POLISH JOURNAL OF PATHOLOGY

Official Journal of the Polish Society of Pathologists
and International Academy of Pathology, Polish Division

Termedia Wydawnictwo Medyczne
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http://www.termedia.pl

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Circulation of 500 copies

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XXI Zjazd Polskiego Towarzystwa Patologów

Lublin, 26-28 września 2019 r.

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Sesje plenarne i tematyczne
Plenary and thematic sessions

Streszczenia
Abstracts

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przewodniczący/chairmans: Andrzej Marszałek (Poznań), Jan Kotarski (Lublin)

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Włodzimierz Olszewski

Department of Lung and Chest Tumours, Maria Sklodowska-Curie Institute – Oncology Center, Warsaw, Poland

Streszczenia nie nadesłano.

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Dariusz Kowalski

Maria Sklodowska-Curie Institute – Oncology Center, Warsaw, Poland

Streszczenia nie nadesłano.

L3

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Jarosław Skokowski

Department of Medical Laboratory Diagnostics and Bank of Frozen Tissues & Genetic Specimens, Medical University of Gdansk, Gdansk, Poland
Department of Surgical Oncology, Medical University of Gdansk, Gdansk, Poland

Streszczenia nie nadesłano.

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Joanna Góra-Tybor, Katarzyna Budziszewska, Monika Prochorec-Sobieszek

Institute of Hematology and Transfusion Medicine, Warsaw, Poland
Sponsor: Novartis

Streszczenia nie nadesłano.

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Sponsor: AstraZeneca

Streszczenia nie nadesłano.

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Maciej Borowiec

Department of Clinical Genetics, Medical University of Lodz, Poland
Sponsor: Perlan Technologies

Streszczenia nie nadesłano.

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przewodniczące/chairmans: Renata Langfort (Warszawa), Małgorzata Szołkowska (Warszawa)

L7
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Renata Langfort

National Institute of Tuberculosis and Lung Diseases, Warsaw, Poland

Pojęcie „zmian rozsianych" w płucach jest szerokim określeniem, które obejmuje zarówno choroby nowotworowe, jak i ogromne spektrum nienowotworowych chorób, przede wszystkim zapalnych.

Wśród rozrostów nowotworowych, w postaci wieloogniskowych zmian mogą występować pierwotne postaci raka płuca, najczęściej gruczolakoraki tapetujące, brodawkowe, śluzowe, rozrosty neuroendokrynne, głównie rozlana samoistna hiperplazja komórek neuroendokrynnych (*diffuse idiopathic pulmonary neuroendocrine cell hyperplasia* – DIPNECH), choroby limfoproliferacyjne oraz przerzuty nowotworowe. Rozpoznanie mikroskopowe wymaga pobrania adekwatnego materiału tkankowego lub cytologicznego (najlepiej połączonego ze sporządzeniem cytobloczków). W niektórych przypadkach, zwłaszcza w diagnostyce rozrostów limfoidalnych oraz w różnicowaniu przerzutów, niezbędne jest przeprowadzenie badań immunohistochemicznych z wykorzystaniem odpowiedniego panelu przeciwciał. W różnicowaniu zmian przerzutowych istotne jest również porównanie preparatów mikroskopowych aktualnie ocenianych zmian w płucu z wcześniej usuniętym nowotworem. W wielu sytuacjach jest to najlepsza metoda umożliwiająca ustalenie właściwego rozpoznania.

Pojawienie się w płucach zmian rozsianych jest częstym objawem śródmiąższowych chorób zapalnych, które stanowią heterogenną grupę ponad 200 schorzeń (*interstitial lung diseases* – ILD). Zwykle ILD charakteryzują się podostrym lub przewlekłym przebiegiem, postępującą dusznością i zróżnicowanym obrazem morfologicznym. Dotyczą przede wszystkim obwodowych struktur układu oddechowego, głównie pęcherzyków, oskrzelików, zajmując stopniowo zraziki płucne. Istotą ILD jest przede wszystkim pojawienie się nacieków zapalnych z różnie zaawansowanym włóknieniem podścieliska miąższu, często połączonego z przebudową struktury płuca. Zmiany mogą być rozległe, zajmują duże fragmenty miąższu płuca lub występują ogniskowo, jako rozproszone, czasami nieregularne ogniska. Często wykazują predylekcję do określonych struktur anatomicznych. Bywają jednoczasowe, o podobnym obrazie histologicznym lub różnoczasowe, charakteryzując się zróżnicowaniem morfologicznym, aktywnością i zaawansowaniem. Rozpoznanie mikroskopowe ILD jest trudne, co wynika z ograniczonej liczby reakcji miąższu płuca w odpowiedzi na liczne czynniki uszkadzające. Ponadto podobny obraz mikroskopowy może pojawiać się w różnych jednostkach chorobowych, jak również w przebiegu jednego schorzenia występują różnorodne zmiany morfologiczne. Brak swoistości zmian morfologicznych wymaga dokładnej korelacji obrazu mikroskopowego z danymi klinicznymi i z badaniami obrazowymi, przede wszystkim tomografią komputerową o wysokiej rozdzielczości.

Istotne znaczenie dla możliwości rozpoznania histopatologicznego ma charakter zmian, rodzaj pobranego materiału oraz miejsce, z którego pobrano wycinki. Biopsja przezoskrzelowa płuca (*transbronchial lung biopsy* – TBLB) jest skuteczną metodą w rozpoznawaniu chorób zajmujących oskrzela i otaczający miąższ płuca (np. sarkoidoza, AZPP), natomiast jest mało przydatna w chorobach przebiegających z włóknieniem i przebudową (np. IPF). W tych przypadkach zdecydowanie lepsze efekty przynosi wideotorakospia czy biopsja otwarta płuca, do niedawna uznawane za „złoty standard" ustalenia rozpoznania mikroskopowego ILD. Obydwie metody pozwalają na pobranie reprezentatywnych, kilikucentymetrowych wycinków, z kilku miejsc, umożliwiając tym samym nie tylko ocenę występujących zmian, lecz także prześledzenie ich lokalizacji, zaawansowania oraz zróżnicowania morfologicznego.

W ostatnim czasie coraz większe znaczenie zdobywa kriobiopsja, gdyż uzyskany materiał jest większy niż pozyskiwany w trakcie TBLB, w związku z czym może być również przydatny w diagnostyce ILD przebiegających z włóknieniem.

Aktualnie „złotym standardem" istotnym w rozpoznaniu ILD jest współpraca interdyscyplinarna obejmująca klinicystę, radiologa, patologa i torakochirurga.

Korelacja danych klinicznych z obrazem radiologicznym i pobranie wycinków z najbardziej miarodajnych miejsc miąższu płuca znamiennie wpływają na możliwości ustalenia prawidłowego rozpoznania histopatologicznego.

L8
Ziarniniaki w badaniu mikroskopowym – czy to zawsze gruźlica?

Ewa Kaznowska

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Ziarniniaki są najczęściej spotykanymi zmianami patologicznymi w płucach i w wielu przypadkach stanowią wyzwanie diagnostyczne. Rozpoznanie histopatologiczne wymaga znajomości specyficznych cech różnicujących zmiany ziarniniakowe.

Zdecydowana większość ziarniniaków w płucach ma podłoże infekcyjne i jest wywołana przez mykobakterie i grzyby. W grupie nieinfekcyjnych ziarniniaków wymienia się występujące w przebiegu sarkoidozy, ziarniniakowatości i zapalenia naczyń (dawniej choroby Wegenera), zapalenia płuca z nadwrażliwości, *hot tube lung*, zachłystowego zapalenia płuca i ziarniniakowatości w przebiegu ekspozycji na talk.

Ustalenie rozpoznania w przypadku stwierdzonych ziarniniaków w płucach jest niezwykle trudne. W pierwszej kolejności należy wykluczyć przyczyny infekcyjne, w czym istotną rolę odgrywa znajomość charakterystycznych cech budowy mikroskopowej, rodzajów odczynów wywoływanych przez drobnoustroje i interpretacji barwień specjalnych. Dalszym krokiem jest poszukiwanie charakterystycznych cech histologicznych ziarniniaków nieinfekcyjnych. W praktycznym podejściu do różnicowania chorób ziarniniakowych płuc pomocny jest algorytm diagnostyczny.

L9
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Aldona Woźniak

Laboratory of Histopathology, Wielkopolska Center of Pulmonology and Thoracic Surgery of Eugenia and Janusz Zeyland, Poznan, Poland

Streszczenia nie nadesłano.

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Małgorzata Szołkowska

Warszawa

Streszczenia nie nadesłano.

SESJA

Choroby cywilizacyjne wątroby. Część III

przewodniczący/chairmans: Andrzej Gabriel (Katowice), Bożena Walewska-Zielecka (Warszawa), Krzysztof Bardadin (Warszawa)

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Andrzej Gabriel

Warszawa

Streszczenia nie nadesłano.

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Michał Kukla

Katowice

Streszczenia nie nadesłano.

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Andrzej Habior

Warszawa

Streszczenia nie nadesłano.

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Bożena Walewska-Zielecka

Warszawa

Streszczenia nie nadesłano.

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Krzysztof Simon

Wrocław

Streszczenia nie nadesłano.

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Agnieszka Hałoń

Department of Pathomorphology and Oncological Cytology, Wroclaw Medical University, Poland
Lower Silesian Oncology Centre, Wroclaw, Poland

Streszczenia nie nadesłano.

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Agnieszka Kunecka

Łódź

Streszczenia nie nadesłano.

SESJA

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przewodniczący/chairmans: Radzisław Kordek (Łódź), Jolanta Orłowska-Heitzman (Kraków)

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Jolanta Orłowska-Heitzman

Kraków

Streszczenia nie nadesłano.

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Radzisław Kordek

Department of Pathology, Chair of Oncology, Medical University of Lodz, Poland

Streszczenia nie nadesłano.

L20
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Andrzej Marszałek

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Department of Oncologic Pathology, Greater Poland Cancer Centre, Poznan, Poland

Streszczenia nie nadesłano.

SESJA HISTORYCZNA *DE MORBIS ET MEDICIS*

przewodniczący/chairmans: Ewa Iżycka-Świeszewska (Gdańsk), Jacek Gulczyński (Gdańsk)

L21
Pathology and the Tudor Royal Family

Matthew Clarke

London, United Kingdom

Streszczenia nie nadesłano.

L22
Paleopathology of the natural mummies from the Ragusa Province (S-E Sicily, XVIII-XX century)

Luca Ventura[1], Claudio Caruso[2], Giuseppe Voi[2], Alessandro Causarano[3], Guido Romeo[3,4], Valentina Pensiero[5]

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Sicily represents the Italian region with the largest collections of mummies. Beside the well-known series of Palermo, Savoca, and Comiso, additional mummies were listed in the province of Messina (north-eastern Sicily) during the last decade. Recently, we had the opportunity to survey new examples of mummified remains in the south-eastern area of the region (Ragusa province). Some of these mummies were also studied by a conservative approach, yielding significant information about the diseases of ancient inhabitants of the island.

The church of Santa Maria della Consolazione in the city of Scicli dates back to the XVI century. After surviving undamaged to a major earthquake in 1693, it was expanded in a Baroque style and finished in the beginning of XIX century. Its funerary character is suggested by the name itself (consolation for the dead) and witnessed by several discoveries of human remains, mortuary chapels and crypts within the building through the years. In 2008, consolidation works allowed to confirm the presence of 20 crypts under the church floor, containing a great number of skeletal remains and 6 mummies buried in coffins. A preliminary survey of the bodies enabled us to date them back to XVIII-XIX century and to establish that they belonged to 3 men and 3 women in a preservation state varying from excellent to poor. A complete paleopathologic study was proposed but, unfortunately, could not be carried out as the mummies were unaccountably reburied under the pavement. Other remains had been discovered in the same church at the beginning of XX century. During the II World War, a single mummified body was found in a room beneath the frontal staircase of the building. This mummy, named the "Queen of the Moors", was recovered and moved to another church, where it is still displayed in a glass/wooden case.

This mummy underwent external inspection, as well as digital radiology and CT scanning. Amorphous material was highlighted in the posterior cranial fossa, along with portions of the meningeal wrappings,

which were also visible within the vertebral column. Tissue remnants were also present inside the orbits. Thoracic and abdomino-pelvic organs appeared extremely well preserved and readily recognizable. All these findings confirmed the natural mummification process, due to rapid dehydration, possibly related to hot dry climate.

All but eight superior and all the inferior elements were present, with two molars displaced postmortem into the right cheek and the larynx. Focal deposits of tartar were observed on the anterior teeth, which also displayed mild periodontitis and severe dental wear. Transverse lines on the anterior teeth were reconducted to enamel hypoplasia.

Diffuse right pleural adhesions were observed, along with subpleural tiny calcifications of the lung and a paratracheal calcified nodule measuring 21 × 16 × 12 mm. Such findings were consistent with primary pulmonary tuberculosis. Left lung appeared normally collapsed.

Small (2–3 mm) phleboliths were identified within the pelvis. Neither growth arrest (Harris) lines, nor fractures could be noted in the standard radiograms of the long bones.

The church of Sant'Anna in the city of Modica was built in 1686, on the pre-existing chapel of S. Calogero, attached to a Franciscan Convent. No significant structural damage was suffered by the church during the major earthquake occurred in 1693, which partially destroyed the friary. Since the end of the XIX century, the lack of planned maintenance resulted in a progressive decay of the building and in recent times the ceiling collapsed on the floor in the central part of the church. During the restoration works, many tombs and crypts were unveiled. In the crypt beneath the Crucifix altar, two mummified human bodies were found and recovered. In the year 2000, they were provisionally stored in a wooden case near the altar, to be occasionally showed to visitors.

Both mummies, identified as MSA 1 and 2, were submitted to visual inspection, digital radiology, and CT scanning.

The body of MSA1 was complete and in a very good state of preservation, belonging to a bearded man, dressed in clothes from the first half of XIX century. The age at death, according to dental wear and radiologic data, was 40 ±5 years. The mummy measured 170 cm in length and belonged to a slim subject, with no signs of anthropogenic manipulation. Amorphous material (remnants of encefalic tissues) was highlighted in the upper posterior cranial fossa, along with portions of the meningeal wrappings. Thoracic and abdomino-pelvic organs appeared extremely well preserved and readily recognizable. These findings confirmed the occurrence of natural mummification, due to rapid dehydration, possibly related to hot dry climate.

All dental elements were present, but two molars: left lower first and right upper third were lost ante mortem. Neither significant deposits of tartar nor dental wear were observed. Diffuse left pleural adhesions were observed, along with multiple, tiny calcifications of the lung and a peribronchial calcified nodule measuring 14 mm in largest diameter. Such findings were consistent with primary pulmonary tuberculosis. The right lung appeared normally collapsed.

The body of MSA2 was complete and in a very good state of preservation, belonging to an old man, with wide remnants of clothes from the end of XVIII century. The age at death, according to dental wear and radiologic data, was at least 75 years. The mummy measured 166 cm in length and belonged to a plump subject (as displayed by the abundant cutaneous folds) with no signs of anthropogenic manipulation. Amorphous material was evident in the posterior cranial fossa with a clearcut distinction of cerebellum. Thoracic and abdomino-pelvic organs appeared extremely well preserved and readily recognizable. These findings confirmed the occurrence of natural mummification, due to rapid dehydration, possibly related to hot dry climate.

A 36 × 15 mm incision with smooth borders was observed in the fourth right intercostal space. A left fibrothorax with multiple calcifications of the lung, and a single right costal adhesion with partial lung retraction were observed. Such findings were consistent with primary pulmonary tuberculosis and suggested the possibility of a traumatic or iatrogenic pneumothorax. Additional radiologic findings include multiple gallbladder or right renal stones, multiple phleboliths in the pelvis, and severe osteoarthritis of the spine and the right hip. The presence of a bandage around the left knee, a leaf on the right ankle, and a chalky device on the right foot probably indicate analgesic medications.

The mummies found in the Ragusa province represent uncommon examples of natural mummification in the Sicilian scenario, characterized by huge numbers of bodies obtained by artificial or spontaneous-enhanced mummification. These unevisceratED, mummified bodies allowed to identify different pathologic conditions and to understand social status and health conditions of the subjects. A point of great interest is that all the subjects investigated were affected by pulmonary tuberculosis. Such finding highlights the impact of this disease on the island population during the last centuries. Moreover, the possibility of iatrogenic pneumothorax, if confirmed, would antedate its introduction in medical practice of at least one century.

Other pathological findings, such as cutaneous folds, pelvic phleboliths, dental status, and gallstones may yield indirect information about social status and nutrition of past inhabitants of the island. The histor-

ical and biological heritage of mummies needs to be properly surveyed and protected, but also adequately studied by multidisciplinary teams of experts. The presence in such a team of at least one skilled anatomic pathologist, well trained in the study of ancient human remains represents an undeniable condition. Moreover, as confirmed by other experiences the use of fine resolution radiologic devices is to be preferred to portable machines and fundamental in obtaining virtual reconstructions of the bodies.

L23

Pathology Museum of Turin: historical heritage and biological archive

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The Pathology Museum of the University of Turin has an old history. Its foundation dates back to 1818 as an "Anatomical Cabinet". The Museum is not now open to the public, even if it probably will be in the near future. The Pathology Collection currently owned by the Museum contains old wet and dry specimens dating back from the half of XIX century to the period before WWII. These specimens were collected by Professor Pio Foŕ and then by Professor Ferruccio Vanzetti, his follower.

They were collected during autopsies and used for educational purposes. In the Institute of Pathology of Turin, the old original autopsy reports are still housed. This increases the information about the specimen which label shows the autopsy number. These specimens show diseases that no longer exist or in their natural state unmodified by therapies.

Therefore, these specimens are a relevant and irreplaceable historical heritage for the study of medicine. However, their relevance is not only due to educational or historical purposes. The particularity of this collection is that it was collected with a modern concept as a Pathology Museum. Professor Pio Foŕ was interested especially in infective and neoplastic disease, therefore this collection is not very impressive as a collection of "monster and mostruosity of nature" but it is very informative as a biological archive. In recent years, increasing attention is being paid to the study of the wet specimens by modern techniques. A conservative approach has been used in Turin for this project where many specimens are being studied as modern ones with histochemical and immunohistochemical stains and also with molecular biology. The possibility of studying these specimens while using modern techniques without damaging them offers the possibility to investigate the natural history of the diseases, especially the neoplastic one.

The project of study and preservation of Pathology Museum of Turin would be of great value for the historical heritage of these specimens and at the same time an opportunity to study the old diseases using modern re-evaluation.

L24

Professor Witold Nowicki – great clinical pathologist of first half of the XX century, Head of the Department of Pathological Anatomy (1919-1941) of the Medical Faculty of Lviv Jan Kazimierz University (dedicated to the 150th anniversary of the birth)

Dmytro Zerbino, Liliya Volos, Vitaliy Ivashchenko

Department of Pathological Anatomy and the Museum of Human Diseases, Danylo Halytsky Lviv National Medical University, Lviv, Ukraine

Witold Nowicki is rightly considered as one of the great clinical pathologist of the first half of XX century. He was apprentice of the founder and first head of the pathological anatomy department prof. Andrzej Obrzut.

Aim of the study was to analyse achievements of prof. Witold Nowicki in the field of medicine and pathology in particular, his scientific and pedagogical activity from modern perspective.

Analysis of medical, scientific, historical literature and internet sources that relate to life and activity of Witold Nowicki in Lviv, from 1902 to 1941, until the last days of his life. Analysis of professor's scientific papers.

Witold Walerian Nowicki – Professor, Head of the Pathological Anatomy Department (1919-1941), Dean of Medical Faculty (1923-1924, 1939), President of the Lviv Medical Society (1920-1921) and Lviv Fight Cancer Committee, Founder of the Lviv University Museum of Hygiene (1930), co-founder of the Morshyn resort. Was born in 18.07.1878 in Bochnia, Poland. In 1896 -1902 he studied in medical faculty of the Jagiellonian University in Kraków. After obtaining of a diploma moved to Lviv and assumed the post of assistant in institution of the pathological anatomy. Since 1919 professor W. Nowicki has held the institution of the pathological anatomy in Lviv. He remained rich scientific heritage – more than 90 papers in Polish, German and

France languages. Result of many years of work in institution of the pathological anatomy in cooperation with other teachers was fundamental three-volume textbook *Anatomia patologiczna*, which was illustrated by more than 1200 pictures, performed under personal management of W. Nowicki.

In last days, he was ending his monograph devoted to scleroma, which was published only after war in 1950 in Wroclaw. During German occupation of Lviv in 4th July 1941 W. Nowicki was arrested and shot with other professors by Nazi Germans. His only son Jerzy Nowicki was shot with him.

SESJA

Praktyczne aspekty patologii molekularnej w onkologii

przewodniczący/chairmans: Monika Prochorec-Sobieszek (Warszawa), Andrzej Marszałek (Poznań)

L25

Mutacje BRAF jako cel terapeutyczny

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Streszczenia nie nadesłano.

L26

Kompleksowa identyfikacja fuzji genowych *ALK, ROS1, NTRK1/2/3, RET* i mutacji *EGFR*, *RAS* z wykorzystaniem sekwencjonowania następnej generacji w raku płuca i innych guzach litych

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Rozpoznanie histopatologiczne nowotworu złośliwego w guzach płuca i innych narządów w zdecydowanej większości opiera się na ocenie oligobioptatu lub materiału cytologicznego. W przypadku raka niedrobnokomórkowego płuca aż w ok. 80% przypadków rozpoznanie jest możliwe wyłącznie na podstawie badania mikroskopowego drobnego fragmentu tkankowego i/lub cytologicznego. Ocena wykładników morfologicznych oraz interpretacja odczynów immunohistochemicznych jest bardzo trudna, ale, co najważniejsze, jest to dopiero wstęp do diagnostyki molekularnej niezbędnej do planowania spersonalizowanego leczenia onkologicznego. Obowiązkiem patologa współpracującego z biologiem molekularnym jest więc nie tylko ustalenie możliwie dokładnego rozpoznania histopatologicznego, lecz także ocena przydatności oraz zabezpieczenie utkania nowotworowego do badań molekularnych.

Nowoczesne techniki biologii molekularnej, takie jak sekwencjonowanie następnej generacji (NGS), zmieniają podejście diagnostyczne z testowania pojedynczych markerów molekularnych na kompleksową jednoczesną ocenę wielu onkogenów, np. *EGFR, BRAF, RAS* czy rearanżacji genowych. Fuzje genów *NTRK/ROS1/ALK/RET* w guzach litych identyfikowane są w < 3% populacji chorych na nowotwory. Jednakże fuzje te zaobserwowano w ponad 40 różnych typach histologicznych nowotworów, w tym w nowotworach przewodu pokarmowego, płuc, ośrodkowego układu nerwowego, tarczycy, głowy i szyi oraz w mięsakach.

W niedrobnokomórkowym raku płuca obserwuje się różne rodzaje zmian genetycznych, w tym zmiany na poziomie pojedynczego nukleotydu (SNV), małe delecje/insercje, zmiany liczby kopii genów (CNV) i fuzje genowe. Testy diagnostyczne identyfikujące jednorazowo wszystkie te markery umożliwiają znaczne zmniejszenie zużycia cennej tkanki i skrócenie czasu oczekiwania na wynik. Wykonywanie powyższych oznaczeń molekularnych na materiale drobnotkankowym i/lub cytologicznym już teraz staje się częścią standardowej praktyki klinicznej, pomimo wielu wyzwań związanych m.in. z wydajnością, kosztami i możliwościami interpretacyjnymi otrzymanych wyników.

L27

Germinalne i somatyczne mutacje *BRCA1/2*

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Mutacje w genach *BRCA1* i *BRCA2* są związane przede wszystkim z podwyższonym ryzykiem zachorowania na raka piersi i jajnika. Wykrycie patogennej mutacji w tych genach umożliwia zastosowanie efektywnych terapii u pacjenta oraz objęcie poradnictwem genetycznym pacjenta i jego rodziny.

W populacji polskiej występuje kilka powtarzalnych mutacji genu *BRCA1 i BRCA2*, które identyfikowane są w ok. 80% rodzin z dziedziczną postacią nowotworów piersi/jajnika. Analiza tych mutacji punktowych jest powszechnie stosowaną procedurą diagnostyczną.

Rozwój technologii sekwencjonowania następnej generacji umożliwia natomiast równoczesne badanie całej sekwencji kodującej obu genów i wykrywanie innych rzadkich zmian patogennych w genach *BRCA1/2*, a także dużych rearanżacji genowych.

Badanie wykonywane na materiale tkankowym z guza umożliwia z kolei identyfikację nie tylko mutacji gremialnych, lecz także somatycznych. Dlatego obecność zidentyfikowanych w guzie wariantów musi być potwierdzona na materiale pochodzącym z komórek prawidłowych.

Postęp w badaniach z zakresu biologii molekularnej umożliwił identyfikację szeregu nowotworów, które wykazują obecność mutacji (somatycznych oraz germinalnych) w genach *BRCA1* i *BRCA2*. Farmakoterapia z wykorzystaniem inhibitorów PARP jest już stosowana w leczeniu części spośród tych guzów, których lista będzie z pewnością poszerzana.

L28

Analiza ctDNA w onkologii molekularnej – stan aktualny i perspektywy wykorzystania

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Circulating tumor DNA (ctDNA) – krążący w krwiobiegu wolny DNA uwalniany z komórek nowotworowych, po raz pierwszy zaobserwowano w ludzkiej krwi w 1948 r, a wzrost jego ilości u pacjentów z chorobą nowotworową w 1977 r. W ostatnich latach tzw. biopsja płynna stała się alternatywnym podejściem diagnostycznym w testowaniu mutacji somatycznych, które zapewnia nowe perspektywy w dziedzinie onkologii klinicznej.

Circulating tumor DNA uwalniany jest do krwiobiegu w wyniku martwicy, apoptozy, rozpadu krążących komórek nowotworowych, lub spontanicznego uwalniania DNA przez nowotwór. Badanie ctDNA umożliwia:

- nieinwazyjną i szybką diagnostykę pacjenta, na etapie wczesnego rozpoznania,
- wdrożenie odpowiedniego leczenia,
- monitorowanie leczenia na poszczególnych etapach terapii ukierunkowanej molekularnie.

Analiza ctDNA jest obiecującym narzędziem diagnostycznym i niejednokrotnie jedynym możliwym do zastosowania ze względu na lokalizację i masę guza. Badanie wolno krążącego DNA nowotworowego pozwala również, choć w ograniczonym zakresie, na ocenę profilu genetycznego komórek nowotworowych.

Włączenie biopsji płynnej do postępowania w niedrobnokomórkowym raku płuca pozwala na szybkie określenie progresji choroby i wprowadzenie zmian w postępowaniu terapeutycznym. Ma to szczególne znaczenie dla pacjentów, u których nie ma możliwości pobrania materiału tkankowego/biopsyjnego. Zastosowanie testów ctDNA otwiera również możliwość szybkiego wdrożenia analizy kolejnych mutacji, których pojawienie się jest markerem niewrażliwości na dotychczasowe leczenie ukierunkowane.

W ciągu ostatnich lat badania koncentrowały się na wykorzystaniu ctDNA również w czerniaku czy raku jelita grubego. Obecnie są one już rutynowo wykorzystywane w praktyce klinicznej.

Stopniowo wdrażane są kolejne metody, których celem jest wykorzystanie ctDNA z biopsji płynnej nie tylko do badania pojedynczych genów, lecz także do analiz wielogenowych (panele onkologiczne) z wykorzystaniem zaawansowanych analiz molekularnych (sekwencjonowania następnej generacji – NGS). Umożliwi to zaoferowanie terapii spersonalizowanej szerszej grupie pacjentów oraz wcześniejsze wykrycie tzw. progresji molekularnej nowotworu, zanim postęp choroby zostanie stwierdzony w badaniach obrazowych.

SESJA

Patologia doświadczalna

przewodniczący/chairmans: Wojciech Łopuszyński (Lublin), Janusz Dzięcioł (Białystok)

L29

Mouse models of inflammatory bowel diseases and colitis-associated colorectal cancer – successes and failures

Jakub Fichna

Department of Biochemistry, Medical University of Lodz, Poland

Inflammatory bowel diseases (IBD) are chronic inflammatory conditions of the gastrointestinal tract, with Crohn's disease and ulcerative colitis as the main representatives. IBD constitute a major risk for colitis-associated colorectal cancer (CAC), which is nowadays one of the most often diagnosed malignancies in Europe.

Increasing incidence and prevalence of IBD and CAC, low efficacy and high risk of adverse side effects observed for currently available therapeutic strategies, together with poor understanding of disease etiopathology – all warrant intensification of research on IBD and CAC and discovery of new treatment methods.

Currently available in vitro screening methods for drug candidates to be used in IBD and CAC are unsatisfactory, thus the animal models play the major role in the process of drug discovery. The biggest challenge faced by the latter is to mirror clinical symptoms from humans to mammals and to reflect similar biomolecular pathways.

During the lecture, the history of validation of animal models of IBD and CAC will be briefly mentioned to give basis for the discussion on the advantages and disadvantages of currently available setups. Moreover, directions in the design of future screening methods for drugs to be used in IBD and CAC will be presented.

L30

Chemotherapy-induced enteric neuropathies

Raquel Abalo

Universidad Rey Juan Carlos, Alcorcón, Spain

Cancer chemotherapy is associated with numerous adverse effects that are feared by both patients and practitioners. Most conventional antineoplastic drugs affect not only cancerous cells, but also healthy cells with a high division rate, leading to typical symptoms (anemia, diarrhea, hair loss…), whereas other agents exert peculiar adverse effects (cardiotoxicity, nausea and emesis, neurotoxicity). These adverse effects may occur during the cycles, with complete recovery of the tissues involved afterwards, or be more persistent, affecting quality of life of cancer survivors.

Chemotherapy may be toxic to the central and peripheral nervous system, with apoptosis/necrosis, reduced neurogenesis and metabolic function impairment as major mechanisms. Whereas a high blood-brain barrier (BBR) penetration increases the risk for developing chemotherapy-related cognitive impairment, peripheral neuropathy leading to sensory symptoms is primarily due to damage of the nerve cells residing within the dorsal root ganglia, which lack an efficient BBR.

The enteric nervous system resides in the gut and also lacks an efficient BBR. Although an enteric neuropathy was early recognized as a major contributor to paralytic ileus typically induced by vincristine, only recently enteric neurotoxicity has been described to be induced by other chemotherapy agents, mainly in preclinical studies. These chemotherapy-induced enteric neuropathies lead to important and relatively long-lasting consequences on gut function and may make the cancer survivor more prone to suffer from gastrointestinal disorders, highly impacting quality of life.

The focus of this talk will be on reviewing the information available on chemotherapy-induced enteric neuropathies, their functional consequences and the mechanisms involved.

L31

Gene expression of Cycline E2 and kinases MAPK in rat neoplastic hepatocytes exposed on proinflammatory macrophages M1 *in vitro*

Marta Wójcik, Urszula Kosior-Korzecka

Chair of Preclinical Veterinary Sciences, Department of Pathophysiology, Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland

Hepatocellular carcinoma (HCC) is a highly malignant tumor of humans, dogs and cats. Ineffectiveness of surgical intervention and resistance to chemotherapy, tend to look for new effective methods of therapy using the immune system of the host. Macrophages (Mf) have multiple functions in both inhibiting or promoting hepatocarcinogenesis, which are depend on their phenotypes. Using DEN-model of hepatocarcinogenesis we analyze the mRNA expression of Cycline E2 and MAPK4, MAPK7 kinases in neoplastic hepatocytes exposed to proinflammatory macrophages M1.

Wistar rats were divided into two groups: I – control (n = 10) and II neoplastic (n = 10). After 6 weeks of DEN administration, hepatocytes were isolated from both groups of animals by collagenase perfusion method. The blood mononuclear cells were isolated using Lymphoprep density-gradient centrifugation. Adherent cells were treated with β-glucan (BBG) at concentration of 10 μg/ml. The heaptocytes and Mf were put into the simple modular culture chambers with dynamic flow of culture medium (Quasi-Vivo System, Kirkstall Ltd., UK). Then, hepatocytes were taken to the analysis.

In comparison to control hepatocytes, expression of Cyclin E2 mRNA was significantly higher in DEN-obtained cells (0.97 ±0.09; 4.95 ±0.2 (ratio of Cyclin E2 mRNA/GAPDH), respectively). Exposition of these cells to proinflammatory Mf-M1 resulted in decreasing of Cyclin E2 mRNA expression to value 2.57 ±0.4. Similarly, Mf-M1 influenced expression of MAPK4 kinase, but without significant changes.

The obtained preliminary results indicate that, proinflammatory Mf-M1 can modulate the expression of Cycline E2, MAPK4 and MAPK7 kinase, which are key regulatory factors of cell cycle both in normal and neoplastic cells.

This study was supported by Grant no DEC-2014/15/B/Nz5/01587 from the National Science Centre, Poland.

L32

Influence of dexamethasone and simvastatin administration on liver cells morphology on a swine model

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The study analysed the effect of dexamethasone and simvastatin administration, with emphasis on proliferation and apoptosis of hepatocytes.

The study included 72 female Large Polish Breed pigs aged 3 months (weighing ca. 30 kg) divided into group I (control; n = 24), group II (*i. m.* injection of monosodium phosphate dexamethasone; 1 ml/10 kg body weight; n = 24), and group III (simvastatin *per os*; 40 mg/animal; n = 24). Medications were administered daily for 29 days. Directly after the euthanasia, the livers were sampled for histopathology, histochemistry, and immunohistochemistry (PCNA, Bcl-2, casapse-3). Apoptosis was visualized by TUNEL method.

Dexamethasone administration led to hepatocyte glycogen, lipid degeneration, sinusoids and central vein dilatation, focal necrosis, and nuclear chromatin condensation. The mean PCNA index, mAgNORs, pAgNORs were lower compared to the control, while Bcl-2 immunoexpression was higher. Simvastatin administration caused acute hepatocyte swelling, glycogen depletion, hyperaemia, hepatocyte pseudoacinar formation, connective tissue hyperplasia, and eosinophil infiltration. The mean PCNA index, mean AgNORs diameter and Bcl-2 expression were lower, mean caspase-3 immunoexpression and apoptosis index was higher.

The above results indicate that dexamethasone and simvastatin administration adversely affects liver morphology and blood supply. Dexamethasone administration increases the level of Bcl-2 protein, which seems to protect hepatocytes from apoptosis. Simvastatin causes a decrease in Bcl-2 protein and increased expression of caspase-3, which seems to have pro-apoptotic properties. Additionally, during the simvastatin administration, there is a risk of hypersensitivity reaction. The results may have significant clinical implications and be helpful in determining the benefit-risk assessment during dexamethasone and simvastatin therapy.

SESJA PLENARNA 2

Hematopatologia

przewodniczący/chairmans: Bogna Ziarkiewicz-Wróblewska (Warszawa), Monika Prochorec-Sobieszek (Warszawa), Justyna Szumiło (Lublin)

L33
Of wolves and sheep: lymphomas and their mimics for the surgical pathologist

Falko Fend

Tübingen, Germany

Streszczenia nie nadesłano.

L34
Aggressive B-cell lymphomas, WHO classification and beyond

Birgitta Sander

Stockholm, Sweden

Streszczenia nie nadesłano.

L35
Early T-cell precursor lymphoblastic leukemia – an unexpected blast crisis of chronic myelogenous leukemia

Anna Szumera-Ciećkiewicz[1,2], Katarzyna Borg[1], Monika Prochorec-Sobieszek[1,2]

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Presenting author: Anna Szumera-Ciećkiewicz

Chronic myeloid leukemia (CML), BCR-ABL-positive is myeloproliferative neoplasm successfully controlled by tyrosine kinase inhibitor therapy and a significant reduction of mortality rated. Nevertheless, without effective treatment, the majority of CML cases progress from chronic to accelerated and blast phase. The predominant part of blast phase is a myeloid crisis but in approximately 20-30% cases the lymphoblastic lineage involvement is reported. The extramedullary blast proliferations are most frequent in i.e. lymph nodes, skin, bones, central nervous system. Early T-cell precursor lymphoblastic leukemia {ETP-ALL} in the latest revision of WHO classification was sectioned off other T-ALL mainly because of characteristic immunophenotype and unfavorable outcome. ETP-ALL comprises only 5-10% cases of adult ALL and is extremally rare among extramedullary T-lymphoblastic blast crisis of CML.

We report in a 69-year-old female who was admitted to the Institute of Hematology and Transfusion Medicine with hyperleukocytosis, hepatosplenomegaly, and peripheral moderate lymph node enlargement. The key points in diagnostics included: smear and trephine biopsy assessment, flow multiparameter cytometry (FMC) of bone marrow and cerebrospinal fluid, lymph node microscopical evaluation and molecular testing. In the bone marrow, CML features were identified together with ETP-ALL single cell involvement. In FMC 8% of cells presented hallmark ETP-ALL immunophenotype: CD7+bright cyCD3+ sCD3– CD2– CD5– CD4– CD8– CD1a– CD45+dim HLA-DR–/+ CD34–/+ CD117–/+ CD99+bright CD13– CD33+dim TdT– MPO–. Microscopically in the lymph node, massive ETP-ALL proliferation was found. Molecularly, BCL-ABL p210 transcript was detected not only on blood but also in the majority of cells from paraffin sections ETP-ALL involved lymph node. The final diagnosis of lymphoblastic crisis in the course of chronic myeloid leukemia in the form of extramedullary early T-cell precursor acute lymphoblastic leukemia. The authors present histopathological and molecular testing pitfalls together with the most recent results in ETP-ALL genetics.

L36
Pozawęzłowy chłoniak Burkittopodobny z aberracją 11q u dwóch młodych chorych

Beata Gierej, Bogna Ziarkiewicz-Wróblewska

Warszawa

Chłoniak Burkittopodobny z aberracją 11q (*Burkitt-like lymphoma with 11q aberration*) to nowa tymczasowa jednostka w klasyfikacji WHO 2016. Podobnie jak chłoniak Burkitta ma bardzo agresywny przebieg kliniczny, podobny immunofenotyp i morfologię. W porównaniu do klasycznego chłoniaka Burkitta wykazuje większy polimorfizm komórkowy oraz ma bardziej złożony kariotyp. Nie stwierdza się rearanżacji genu *MYC*. Typowe są nieprawidłowości dotyczące chromosomu11q w postaci powielenia proksymalnego odcinka długiego ramienia i utraty telomerów.

Przypadek 1. Badanie konsultacyjne 28-letniego mężczyzny z guzem wyrostka robaczkowego pierwotnie rozpoznanego jako chłoniak Burkitta.

Przypadek 2. 24-letnia kobieta z guzem nosogardła.

U obojga chorych nie stwierdzono zaburzeń odporności.

W obu przypadkach morfologicznie naciek zbudowany był ze średnich/dużych komórek limfoidalnych wykazujących umiarkowany polimorfizm, którym towarzyszyły liczne fagocytujace histiocyty.

Podobne były także wyniki barwień immunohistochemicznych: CD20+, CD5-, bcl2-, bcl6+, CD10+, MUM1−, CD30−, TdT−, Ki-67(+++) 100%. Jedyną różnicę stanowiło barwienie z c-myc: dodatnie w przypadku drugim, ujemne w przypadku pierwszym. U obu chorych w badaniu FISH stwierdzono aberracje długiego ramienia chromosomu 11 i brak nieprawidłowości genu *MYC*. W przypadku 1. była to delecja terminalna (del11q), w przypadku 2. stwierdzono powielenie 11q23.

Chłoniak Burkittopodobny z aberracją 11q jest nowo zdefiniowaną jednostką chorobową, wymagającą różnicowania z chłoniakiem Burkitta (BL), chłoniakiem rozlanym z dużych komórek B, nieokreślonym (DLBCL, NOS) oraz chłoniakiem z komórek B o wysokim stopniu złośliwości (HGBL).

Badanie genetyczne konieczne jest do potwierdzenia typowej dla nowotworu rearanżacji 11q.

Pozawęzłowa lokalizacja chłoniaka w opisywanych przypadkach jest rzadziej spotykana niż zajęcie węzłów chłonnych.

SESJA
Nowa klasyfikacja WHO nowotworów skóry

przewodniczący/chairmans: Wojciech Biernat (Gdańsk), Grzegorz Dyduch (Kraków)

L37
Nowotwory keratynocytarne i przydatkowe

Andrzej Marszałek

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Streszczenia nie nadesłano.

L38
Nowotwory melanocytarne

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The 4th WHO classification of skin tumors has brought significant changes in categorization of melanocytic lesions in comparison to the previous edition. Integration of epidemiological, clinical, pathological and genomic features has allowed to divide melanoma and precursor lesions into three major classes (depending on the type of UV exposure) and nine distinct pathways. However, the molecular data have, to some extent, validated a legitimacy of an "old-fashioned" melanoma categorization into four clinico-pathological types: lentigo maligna, superficial spreading, acral lentiginous and nodular type. The current classification has abandoned traditional dichotomy: melanoma vs. nevus, recognizing a continuum in nevus/melanoma progression, with presence of specific, clinical and pathological intermediate/borderline lesions. Therefore, terms like melanocytoma, intermediate lesion and melanocytic neoplasm of low malignant potential have been brought in use. Introduction of these a bit vaguely defined terms acknowledges the existence of melano-

cytic neoplasms with limited capacity of spreading, without ability for distant metastases. Furthermore, a few entities already functioning in daily practice have been officially recognized (nevi of special sites, nevoid melanoma) or precisely characterized (deep penetrating nevus, combined nevus). Classification of dysplastic nevi has been simplified with two grades of dysplasia instead of the former three grade system. For diagnosis of atypical Spitz nevus/tumor elaborate diagnostic criteria have been presented.

L39
Nowotwory hematopoetyczne i limfoidalne

Wojciech Biernat

Department of Pathomorphology, Medical University of Gdansk, Poland

Streszczenia nie nadesłano.

L40
Soft tissue tumors of the skin

Janusz Ryś

Department of Tumor Pathology, Maria Sklodowska-Curie Memorial Cancer Center and Institute of Oncology, Krakow, Poland

The newest WHO classification of the skin includes a total of 74 mesenchymal tumors, compared to 33 units of soft tissue and 6 units of neural differentiation described in previous classification from year 2006. The morphological spectrum of mesenchymal tumors of the skin and subcutaneous tissue is very broad and includes both benign tumors as well as borderline malignancies and fully malignant neoplasms that metastasize in a significant percentage of cases. The characteristic feature of mesenchymal skin tumors is their clinical course which is different from their soft tissue counterparts. Some pleomorphic tumors made of cells with high-grade atypia (atypical fibroxanthoma, atypical intradermal smooth muscle tumor, atypical vascular lesion) have a benign clinical course, whereas selected neoplasm with a "benign" histological picture (plaque-like DFSP) may behave in a malignant manner.

Due to the morphology of the tumor cells mesenchymal neoplasms of the skin and subcutaneous tissue can be divided into spindle cell, epithelioid, myxoid, pleomorphic and clear cell type. The most numerous is the group of spindle cell neoplasms; of these BFHs are the most common growth. Pathologists are required to be able to recognize the specific variants of BFH (cellular/deep FH, aneurysmal FH, angiomatoid FH) with an unusual clinical course. They should also identify specific variants of DFSP and newly described clinico-morphological entities such as plaque-like CD34(+) dermal fibroma, superficial acral fibromyxoma, myxoinflammatory fibroblastic sarcoma, pseudomyogenic (epithelioid sarcoma-like) haemangioendothelioma.

L41
Ocena rearanżacji ALK w niedrobnokomórkowym raku płuca – wyzwanie diagnostyczne

Moderator: Renata Langfort (Warszawa)
Wykładowcy: Małgorzata Szołkowska (Warszawa), Kamila Wojas-Krawczyk (Lublin), Andrzej Tysarowski (Warszawa)

Sponsor: Roche Polska

L42
Praktyczne aspekty badania poziomu ekspresji PD-L1 w kontekście diagnostyki zaawansowanego niedrobnokomórkowego raka płuca

Renata Langfort

National Institute of Tuberculosis and Lung Diseases, Warsaw, Poland

Sponsor: MSD Polska

SESJA

Nietypowe zmiany w cytologii tarczycy (przypadki dydaktyczne)

przewodniczący/chairmans: Dariusz Lange (Gliwice), Stanisław Sporny (Łódź)

L43

AUS czy FLUS w kategorii III wg systemu Bethesda

Agata Stanek-Widera

Department of Tumour Pathology, Maria Sklodowska-Curie Memorial Cancer Center and Institute of Oncology, Gliwice Branch, Poland

Rekomendacją Polskich Towarzystw Naukowych z 2018 r. wprowadzono do kategorii III podkategorię AUS, a ryzyko złośliwości dla podkategorii III FLUS określone zostało dla populacji polskiej na poziomie 5%.

Umiejętność właściwej kategoryzacji rozpoznań biopsji aspiracyjnej cienkoigłowej według obowiązującego Systemu Bethesda ma ważne znaczenie dla postępowania klinicznego.

W przypadku kategorii III bardzo istotne jest odróżnienie, czy obraz mikroskopowy w rozmazie uzyskanym z nakłucia tarczycy jest zmianą pęcherzykową bliżej nieokreśloną (FLUS), czy mamy do czynienia z atypią komórkową o nieokreślonym znaczeniu (AUS).

Podkategoria FLUS to zbiór obrazów przedstawiający komórki pęcherzykowe, (dopuszczalny jest polimorfizm, umiarkowane cechy metaplazji oksyfilnej) tworzące pojedyncze układy rozetkowe, którym mogą towarzyszyć pojedyncze grupy czy rozproszone tyreocyty.

Postępowanie przy rozpoznaniu FLUS polega na powtórnej biopsji nie wcześniej jak 3-6 miesięcy (przy braku innych wskazań klinicznych).

Podkategoria AUS zawiera w sobie obrazy mikroskopowe, które (ze względu na jakość, ilość czy rodzaj materiału) nie pozwalają jeszcze na rozpoznanie „podejrzenie złośliwości", ale także nie pozwalają na ustalenie rozpoznania kategorii I czy II.

W podkategorii AUS nie oczekujemy żadnych powtarzających się formacji, typu pęcherzyki, rozetki, grupy czy płaty. Materiał jest zazwyczaj ubogi, komórki polimorficzne, niecharakterystyczne dla innych kategorii.

Rozpoznanie kategorii III AUS jest ściśle związane z postepowaniem chirurgicznym.

Wykład ma charakter szkoleniowy.

Podczas wykładu zostaną omówione liczne rozmazy biopsji aspiracyjnej cienkoigłowej tarczycy, z naciskiem na różnicowanie w obrębie kategorii III na zmiany AUS i FLUS.

L44

Kategoria V. Podejrzenie złośliwości. Korelacja cytologiczno-histologiczna

Mykola Chekan, Magdalena Suchorzepka

Zakład Patologii Nowotworów, Centrum Onkologii, Instytut im. Marii Skłodowskiej-Curie, Oddział w Gliwicach

Kategoria V – podejrzenie złośliwości oznacza ze wykryto cechy nowotworu złośliwego, ale nie zostały spełnione wszystkie cechy złośliwości. Charakteryzuje się wysoką możliwością (75%) występowania raka w badaniu pooperacyjnym i jest wskazaniem do przeprowadzenia leczenia operacyjnego.

W ciągu 2018 r. w Centrum Onkologii Instytucie im. Marii Skłodowskiej-Curie w Gliwicach przeprowadzono 2545 biopsji cienkoigłowych tarczycy, oraz badanie histopatologiczne 689 pacjentów. Przeanalizowano 105 przypadków, w których materiał biopsyjny sklasyfikowano, jako kategoria V i następnie przeprowadzono leczenie operacyjne. Przeprowadzono analizę porównawczą obrazu cytologicznego z obrazem histologicznym zmian. Szczególną uwagę poświecono 14 przypadkom, w których w materiale pooperacyjnym rozpoznano zmiany łagodne (wole guzkowe, przewlekłe zapalenie limfocytarne, gruczolaki z komórek Hürthla).

L45

Thyroid secondary neoplastic changes

Ewa Zembala-Nożyńska, Mykola Chekan, Ewa Stobiecka, Marcin Wesołowski

Department of Tumor Pathology, Maria Skłodowska-Curie Memorial Oncology Centre-Institute, Branch in Gliwice, Poland

Secondary neoplastic tumors of thyroid gland includes metastases from other neoplasms persisting in other than thyroid organs, or infiltrations and invasion from neighboring organs. The earliest description of metastasis to thyroid gland from testicular tumor was described by Virchow. Metastatic thyroid tumors in postmortem examinations were estimated in frequencies varying from 0.46% to 26%. Most frequent secondary thyroid tumors arising from renal cell car-

cinoma (25% of cases), then lung tumors metastases (22%), gastrointestinal tract, breast, prostate (13%), whereas the rarest are metastases from endocrine malignant tumors (2%). Secondary thyroid neoplastic tumors are frequent in females, and the amount of these changes rises with the age. The abundant vascularization of thyroid is presumably responsible for metastases. It should be also reported, that in cases of renal clear cell carcinoma, the preexistent pathologies of thyroid are conducive for tumor to tumor metastases, moreover time between primary renal tumor resection to thyroid metastasis is very long. Lymphoproliferative processes are also present in thyroid gland. These processes arising from lymphatic nodes were present with frequency nearly 2.5%, whereas primary thyroid lymphoma was found in 4-5% of thyroid tumors. Very rare are thyroid plasmacellular infiltrations in generalized plasma cell myeloma. Secondary thyroid sarcomas are casuistic cases, usually arising from neighboring organs. Three cases of secondary tumors of thyroid gland are presented as illustration of aforementioned issue: renal clear cell carcinoma metastasis to thyroid follicular carcinoma, metastasis from lung adenocarcinoma to thyroid, and metastasis of plasma cell myeloma.

L46

An unusual presentation of Hodgkin's lymphoma in the thyroid. Possibilities and limitations of cytological diagnosis of thyroid lymphomas

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Thyroid lymphomas rarely develop. Primary lymphomas of the thyroid account for as many as 5% of all thyroid malignancies and approximately 2% of extranodal lymphomas. Usually they are non-Hodgkin's lymphoma, the most common is diffuse large B-cell lymphoma (DLBCL), followed by extranodal marginal zone B-cell lymphoma of mucosa-associated lymphoid tissue (MALT lymphoma) and follicular lymphoma and rarely occurring classic Hodgkin lymphoma. Thyroid lymphomas are almost always associated with chronic lymphocytic (Hashimoto) thyroiditis. Occasionally cervical lymph nodes and rarely more distant sites may be involved in addition to the thyroid gland.

The aim of this study is to discuss clinical symptoms and a diagnostic path based on the selected cases of lymphomas developed in the thyroid patients of the Maria Sklodowska-Curie Institute – Oncology Center in Warsaw between the years 2016-2019, including an unusual clinical presentation of lymphoma in a 25 year old man. The study presents diagnostic methods such as the fine needle aspiration biopsy FNAB, immunohistochemical studies, cell-blocks preparation, flow cytometry and histopathology examination.

Cytological diagnosis of lymphoma is difficult and have some limitations , however using modern diagnostic techniques such as immunohistochemical studies, cell-blocks preparation and flow cytometry can often determine correct diagnosis of lymphoma. Precise diagnosis of lymphoma allows for effective treatment depending on the type of lymphoma (radiotherapy, chemotherapy, monoclonal antibodies) avoiding unnecessary cases of thyroid removal.

L47

Guz beleczkowy szkliwiejący. Typowy, nietypowy obraz cytologiczny

Dariusz Lange

Maria Sklodowska-Curie Memorial Cancer Center and Institute of Oncology, Gliwice Branch, Poland

Guz beleczkowy szkliwiejący stanowi w badaniu cytologicznym prawdziwe wyzwanie. W bardzo licznych opisach kazuistycznych prawie zawsze guz ten rozpoznawany jest pierwotnie jako rak brodawkowaty, czasami rdzeniasty, a czasami wymienia się go ale jako jednostkę, którą należy różnicować z rakiem brodawkowatym. W ZPN IO w Gliwicach wielokrotnie rozpoznawano bezbłędnie guza beleczkowego szkliwiącego w preparatach cytologicznych nawet ubogokomórkowych. Podczas wykładu przedstawię cechy cytologiczne, które pozwalają bezbłędnie rozpoznać ten trudny diagnostycznie nowotwór. Na podstawie 30 przypadków guza beleczkowego szkliwiejącego omówiony zostanie charakterystyczny immunofenotyp oraz przedstawione najnowsze informacje o patognomicznej dla tej jednostki fuzji genów *PAX8-GLIS3*.

SESJA

Postępy w uropatologii

przewodniczący/chairmans: Krzysztof Okoń (Kraków), Agnieszka Hałoń (Wrocław)

L48
Prostate cancer pathology: what has changed in the last 5 years

Rodolfo Montironi

Ancona, Italy

Streszczenia nie nadesłano.

L49
New entities of the renal tumors

Marina Scarpelli

Ancona, Italy

Streszczenia nie nadesłano.

L50
Glandular tumors of the urinary bladder

Marcin Ligaj

Warszawa

Streszczenia nie nadesłano.

SESJA

Zmiany jatrogenne w układzie pokarmowym

przewodniczący/chairmans: Anna Nasierowska-Guttmejer (Warszawa), Andrzej Mróz (Warszawa)

L51
Uszkodzenie polekowe przewodu pokarmowego – rola diagnostyki histopatologicznej

Andrzej Mróz

Warszawa

Uważa się, że do 10% pacjentów przyjmujących leki będzie miało powikłania ze strony przewodu pokarmowego, w tym część poważne skutkujące podjęciem działań diagnostycznych i terapeutycznych. Zmiany wywołane stosowaniem leków mogą dotyczyć całej długości cewy pokarmowej, a ich lokalizacja jest różna i zależna od grupy i formy podania. Wpływ leków na przewód pokarmowy może być bezpośredni lub wtórny, choćby poprzez uaktywnienie czynników infekcyjnych w tym bakterii i wirusów. Znakomita większość leków uszkadzających przewód pokarmowy wywołuje zmiany niespecyficzne, w których dominuje jeden z typów uszkodzenia błony śluzowej w tym zmiany martwiczo-wytwórcze, reaktywne (rozrostowe), zapalne, zmiany z dominującą apoptozą, zmiany w jądrach komórkowych, odkładanie substancji.

W części przypadków w badaniu histopatologicznym obecne są zmiany typowe dla danej grupy leków lub konkretnej substancji czynnej. Należy tu wymienić m. in. skupiska makrofagów obładowanych lipofuscyną po zastosowaniu środków przeczyszczających, kryształów po zastosowaniu środków wiążących fosforany, zwapnienia w naczyniach po tetracyklinach, *pill gastritis* po związkach żelaza, specyficzne mikrosfery po środkach przenoszących leki chemioterapeutyczne.

Typ zmian	Lokalizacja	Lek
uszkodzenie śluzówki – martwica	cały przewód pokarmowy	NLPZ, biologiczne, preparat żelaza, GKS
zwężenia	jelito grube i cienkie	KCL, enzymy trzustkowe
zapalenie mikroskopowe	jelito grube	IPP, tiklopidyna, ranitydyna, simwastatyna, karbamazepina, NLPZ, penicylina
zapalenie rzekomobłoniaste	jelito grube	antybiotyki
zmiany niedokrwienne	cały przewód pokarmowy	naparstnica, leki moczopędne, DŚA, ergotamina, kokaina, interferon, dopamina, NLPZ
ogniskowe zmiany zapalne	jelito grube	fosforany, NLPZ, leki biologiczne
atypia komórkowe/nieprawidłowe mitozy	cały przewód pokarmowy	CSA, taksany, kolchicyna
apoptoza	cały przewód pokarmowy	leki biologiczne, immunosupresyjne, przeciwnowotworowe, NLPZ, fosforany

NLPZ – niesteroidowe leki przeciwzapalne; CSA – cyklosporyna A; GKS – glikokortykosteroidy; IPP – inhibitory pompy protonowej

W ostatnich latach do grup leków potencjalnie toksycznych dla przewodu pokarmowego dołączyły leki immunosupresyjne i biologiczne w tym przede wszystkim immunomodulujące. Substancje takie jak mykofenolan mofetilu czy leki z grupy anty CTLA4 czy anty PD1/PD-L1 wywołują zmiany mikroskopowe o charakterze zapalenia jelita grubego z obecnością licznych ciał apoptotycznych, które mogą przypominać nieswoiste zapalenie jelit, zapalenie mikroskopowe, zmiany infekcyjne czy zmiany jak w chorobie przeszczep przeciwko gospodarzowi.

Prawidłowe rozpoznanie histopatologiczne u chorych z podejrzeniem toksycznego działania leków na przewód pokarmowy jest zawsze rozpoznaniem interpretacyjnym i musi być stawiane w odpowiednim kontekście klinicznym – znajomość dokładnego wywiadu oraz obrazu endoskopowego jest zatem konieczna. Dodatkowym zadaniem patologa jest przeprowadzenie odpowiedniej diagnostyki różnicowej i uwzględnienie zmian towarzyszących, co zwykle ma bezpośredni wpływ na decyzje terapeutyczne.

L52
Zmiany w przewodzie pokarmowym po radio- i/lub chemioterapii

Anna Nasierowska-Guttmejer

Warszawa

Streszczenia nie nadesłano.

L53
Zmiany jatrogenne po operacji wyrostka robaczkowego

Dorota Łącka

Warszawa

Streszczenia nie nadesłano.

SESJA

Choroba zależna od IgG4

Przewodniczący: Barbara Górnicka (Warszawa), Bogna Ziarkiewicz-Wróblewska (Warszawa), Marian Danilewicz (Łódź)

L54

Znaczenie diagnostyczne obecności podwyższonego poziomu podklasy IgG4 immunoglobuliny IgG w immunopatologii

Grzegorz Dworacki

Poznań

Streszczenia nie nadesłano.

L55

Autoimmunologiczne zapalenie trzustki związane z nadekspresją IgG4 (*IgG4-related autoimmune pancreatitis*) – opis przypadku

Michał Mazurkiewicz, Beata Gierej, Bogna Ziarkiewicz-Wróblewska

Chair and Department of Pathomorphology, Medical University of Warsaw, Poland

Pacjentka, lat 56, została przyjęta do Kliniki Chirurgii Ogólnej, Gastroenterologicznej i Onkologicznej Warszawskiego Uniwersytetu Medycznego w celu dalszej diagnostyki i leczenia guza trzonu trzustki. Wykonano resekcję odwodową narządu ze splenektomią.

W badaniu histopatologicznym w obrębie opisywanego makroskopowo guza stwierdzono obecność charakterystycznego, „plecionkowego" (*storiform pattern*) włóknienia z częściowym zachowaniem struktur zrazikowych miąższu trzustki oraz średnio nasilonego, przewlekłego nacieku zapalnego lokalizującego się okołoprzewodowo i śródzrazikowo. Charakterystycznym elementem nacieku zapalnego, poza limfocytami, były liczne plazmocyty, wykazujące w badaniu immunohistochemicznym ekspresję IgG4, stanowiące powyżej 40% wszystkich plazmocytów IgG-pozytywnych (powyżej 10 komórek/DPW).

Obraz morfologiczny i wyniki badań dodatkowych spełniły kryteria rozpoznania autoimmunologicznego zapalenia trzustki (AZT) typu 1.

Pewne rozpoznanie autoimmunologicznego zapalenia trzustki i jego różnicowanie z guzem nowotworowym wymaga zastosowania nie tylko badań obrazowych i laboratoryjnych, ale także diagnostyki histopatologicznej opartej o sprecyzowane dla AZT kryteria histologiczne.

L56

IgG4-RD w wątrobie i drogach żółciowych

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Zajęcie dróg żółciowych i wątroby w przebiegu IgG4-RD występuje rzadko, a izolowana postać tej choroby jest jeszcze mniej częsta.

Manifestacja kliniczna przebiega w postaci zmiany guzowatej lub stwardniającego zapalenia dróg żółciowych mogącego doprowadzić do marskości wątroby. Obraz mikroskopowy nie musi prezentować wszystkich kryteriów diagnostycznych dla IgG4-RD; wykładnikiem choroby jest obecność IgG4+ plazmocytów. W surowicy krwi stwierdza się podwyższony poziom IgG4; może on jednak występować także w innych stanach chorobowych. Dlatego konieczna jest korelacja badania histopatologicznego z danymi klinicznymi oraz badaniami dodatkowymi.

W prezentacji przedstawiono przypadki zajęcia dróg żółciowych oraz wątroby w przebiegu IgG4, w postaci stwardniającego zapalenia dróg żółciowych z towarzyszącą marskością.

L57
IgG4-RD w nerkach

Aleksandra Starzyńska-Kubicka,
Agnieszka Perkowska-Ptasińska

Warszawa

Streszczenia nie nadesłano.

L58
IgG4-RD w węzłach chłonnych oraz przestrzeni zaotrzewnowej

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W przebiegu choroby zależnej od IgG4 często stwierdza się zajęcie węzłów chłonnych. Limfadenopatia może pojawić się przed rozpoznaniem, jednocześnie z nim lub po rozpoznaniu tej choroby w innych narządach. Niekiedy występuje jako postać izolowana. Częściej stwierdza się limfadenopatię uogólnioną.

Obraz mikroskopowy jest bardzo zróżnicowany i niespecyficzny – wyróżnia się pięć typów morfologicznych choroby. Wymagają one szerokiej diagnostyki różnicowej obejmującej zmiany odczynowe stojące na pograniczu odczynu i nowotworu oraz chłoniaki.

W przypadkach izolowanej limfadenopatii diagnostyka jest szczególnie trudna, dlatego konieczna jest ścisła korelacja z danymi klinicznymi i wynikami badań laboratoryjnych w celu wykluczenia innych patologii przebiegających z obfitymi naciekami plazmatycznokomórkowymi.

W niniejszej prezentacji przedstawiono 2 przypadki chorych z powiększonymi węzłami chłonnymi, u których podejrzewano rozrosty nowotworowe. Badanie mikroskopowe pozwoliło na wysunięcie podejrzenia limfadenopatii związanej z IgG4, potwierdzonej następnie klinicznie.

L59
IgG4-RD w narządach głowy i szyi

Łukasz Fusprof, Barbara Górnicka

Warszawa

Streszczenia nie nadesłano.

SESJA

Przypadek, który pamiętam do dzisiaj (przypadki dydaktyczne)

Przewodniczący: Andrzej Kram (Szczecin), Joann Reszeć (Białystok)

L60
Guz śródpiersia u 43-letniego mężczyzny, opis przypadku, diagnostyka różnicowa

Joanna Reszeć

Białystok

Streszczenia nie nadesłano.

L61
Rzadki typ guza jajnika – opis przypadku i diagnostyka różnicowa

Urszula Leszczyńska

Białystok

Streszczenia nie nadesłano.

L62
Guz policzka u młodego więźnia

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Streszczenia nie nadesłano.

L63
Skórna postać choroby Rosai-Dorfmanna – rzadki opis przypadku i przykład dobrej współpracy z klinicystą

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Choroba Rosai-Dorfmana (ChRD), typowo manifestująca się uogólnioną limfadenopatią, jest przykładem reaktywnej proliferacji makrofagów charakteryzujących się zjawiskiem emperipolezy i dodatnią ekspresją białka S100. Choroba Rosai-Dorfmana ograniczona do skóry jest bardzo rzadką jednostką i może być diagnostycznym wzywaniem, w szczególności dla młodego patologa i dermatologa.

Dwa wycinki skórne zostały pobrane od 52-letniej kobiety z wyniosłej, 7-centymetrowej czerwono-brunatnej zmiany guzowatej, zlokalizowanej na prawym ramieniu. Zmiana była obecna od 6 miesięcy, z towarzyszącymi dwoma uniesionymi ogniskami, średnicy 1,5 cm każde. W pierwszym wycinku stwierdzono niespecyficzny naciek w skórze właściwej składający się z limfocytów, histiocytów i komórek plazmatycznych oraz pobudzenie komórek śródbłonka w drobnych naczyniach krwionośnych. Po telefonicznej konsultacji z dermatologiem i informacji o pozytywnym wyniku testu przesiewowego w kierunku kiły, w rozpoznaniu zasugerowano zmiany w przebiegu kiły. Ze względu na małe prawdopodobieństwo aktywnego procesu chorobowego, oparte o wyniki pogłębionych badań serologicznych, zdecydowano się na kolejną biopsję. W drugim wycinku stwierdzono nasilony naciek w skórze właściwej złożony z heterogennej populacji komórek zapalnych i licznych makrofagów o obfitej jasnej cytoplazmie, z których część wykazywała zjawisko emperipolezy. Makrofagi wykazywały dodatnią ekspresję białka S100 i CD68 oraz brak ekspresji CD1a. Ze względu na ujemny wywiad w kierunku manifestacji węzłowej, brak objawów ogólnych, po analizie przypadków opisanych w literaturze i kolejnej konsultacji z dermatologiem postawiono ostateczne rozpoznanie skórnej postaci ChRD.

Opisany przypadek jest przykładem dobrej współpracy z klinicystą i może mieć wartość dydaktyczną, w szczególności dla młodych patologów.

L64
Guz barku – dlaczego dane kliniczne są tak bardzo istotne w diagnostyce różnicowej

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Streszczenia nie nadesłano.

L65
Metachronic tumors; similar but not the same

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Two cases of metachronic soft tissue and bone tumors have been presented.

The first case is a non-ossifying fibroma diagnosed in a 32-year old male with proven NF1 syndrome and diffuse neurofibroma of soft tissue. Both tumors were built of spindle cells of similar morphology but different immunophenotype (different reaction to S100 protein and CD34 antigen).

In the second case in female with confirmed disseminated epithelioid PEComa a metachronic chordoma was diagnosed based on positive reaction for cytokeratins and brachyury.

Conclusion: In the diagnosis of soft tissue neoplasms one should remember of metachronic neoplasms both in spindle cell neoplasms and epithelioid onces.

L66
Agresywne chłoniaki B-komórkowe z „końcowym" (terminalnym) zróżnicowaniem charakteryzują się podobieństwami morfologiczno-immunofenotypowymi raków i mięsaków – wyzwanie diagnostyczne

Grzegorz Rymkiewicz

Warszawa

Streszczenia nie nadesłano.

SESJA
Współpraca patologa i biologa molekularnego w diagnostyce nowotworów ośrodkowego układu nerwowego (przypadki dydaktyczne)
przewodniczący/chairmans: Wiesława Grajkowska (Warszawa), Dariusz Adamek (Kraków)

L67
Wyzwania współczesnej neuropatologii

Ewa Iżycka-Świeszewska

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Department of Pathomorphology, Copernicus Hospitals, Gdansk, Poland

Streszczenia nie nadesłano.

L68
Zintegrowana diagnostyka histopatologiczno-molekularna nowotworów ośrodkowego układu nerwowego u dzieci

Wiesława Grajkowska, Joanna Trubicka

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Nowotwory ośrodkowego układu nerwowego (OUN) stanowią po białaczkach drugą co do częstości występowania grupę nowotworów wieku dziecięcego. W ostatnich latach uznano znaczenie wybranych markerów molekularnych w postępowaniu diagnostycznym i terapeutycznym, co zostało uwzględnione w ostatniej klasyfikacji WHO 2016 nowotworów centralnego układu nerwowego. Współczesna diagnostyka tych guzów jest dość skomplikowana i wymaga korelacji obrazu histopatologicznego oraz uwzględnienia wyników badań molekularnych.

Najważniejsze zmiany w zakresie diagnostyki rozlanych glejaków u dzieci polegają na wprowadzeniu markerów genetycznych umożliwiających zdefiniowanie podtypów molekularnych. Przykładem jest wprowadzenie jednostki *Diffuse midline glioma H3K27 mutant* (WHO GIV) zdefiniowanej przez występowanie mutacji w genie kodującym histon H3.3 (*H3F3A*). W grupie wyściółczaków wprowadzono zdefiniowany molekularnie podtyp *Ependymoma RELA fusion – positive* związany z gorszym rokowaniem. Diagnostyka najczęstszego nowotworu złośliwego mózgu u dzieci – *Medulloblastoma* musi zawierać zarówno określenie podtypu histopatologicznego nowotworu jak i ocenę przynależności do grupy transkrypcyjnej. Typy histopatologiczne *Medulloblastoma* to: klasyczny, demoplastyczno-guzkowy, typ z zaawansowaną guzkowością i wielkokomórkowo/anaplastyczny. Grupy transkrypcyjne to WNT, SHH, grupa 3 i 4. W grupie SHH konieczne jest określenie statusu genu *TP53*. Występowanie mutacji w tym genie związane jest z gorszym rokowaniem. Jednocześnie usunięto z klasyfikacji określenie PNET. W grupie nadnamiotowych nowotworów embrionalnych wprowadzono rozpoznanie *Embryonal tumor with multilayered rosettes* (*ETMR*), dla diagnostyki, którego niezbędna jest identyfikacja amplifikacji klasteru

microRNA C19MC. Dla postawienia rozpoznania *Atypical teratoid/ rhabdoid tumor* (AT/RT) niezbędne jest wykrycie obecności patogennych wariantów w genach *INI1* lub *BRG1*.

W ocenie zmian genetycznych u pacjentów obciążonych nowotworami OUN należy uwzględnić również identyfikację zmian germinalnych, które mogą być istotnymi markerami rokowniczymi i prognostycznymi. Jednocześnie w przypadku identyfikacji zmiany germinalnej predysponującej do występowania nowotworu wskazane jest objęcie badaniami genetycznymi wszystkich członków rodziny pacjenta, w celu zapewnienia opieki medycznej umożliwiającej wczesne wykrycie ewentualnych zachorowań na nowotwory w rodzinie.

L69

Identyfikacja molekularnych markerów diagnostycznych, prognostycznych i predykcyjnych w nowotworach mózgu u dorosłych

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Aktualna klasyfikacja nowotworów OUN WHO 2016 opiera się na zintegrowanej diagnostyce histopatologiczno-molekularnej. Największe zmiany dotyczą klasyfikacji rozlanych glejaków, w których niezbędne jest określenie statusu genów *IDH1* i *IDH2* oraz kodelecji 1p/19q. Mutacje *IDH1* występują głównie w argininie w pozycji 132, powodując substytucje, w tym R132H (najczęściej, 88%), oraz rzadziej R132C, R132L, R132S i R132G. Mutacje *IDH2* zazwyczaj występują w kodonach R140 lub R172. Najczęstszą mutacją *IDH2* jest R172K. Określenie statusu genów *IDH1* i *IDH2* z dużą dokładnością można wykonać, stosując techniki biologii molekularnej, takie jak bezpośrednie sekwencjonowanie lub qPCR, ocenę kodelecji 1p/19q, wykonuję się zaś techniką FISH. Wśród rozlanych glejaków wyróżnia się następujące typy: rozlane gwiaździaki z mutacją w genach *IDH* (WHO GII), rozlane gwiaździaki bez mutacji w genach *IDH* (WHO GII), gwiaździaki anaplastyczne z mutacją w genach *IDH* i bez mutacji (WHO GIII), glejaki wielopostaciowe (WHO GIV), skąpodrzewiaki (WHO GII), anaplastyczne skąpodrzewiaki (WHO III) oraz rozlane glejaki linii środkowej z mutacją H3K27 (WHO GIV). Postawienie rozpoznania skąpodrzewiaka wymaga zarówno wykrycia mutacji w genie *IDH*, jak i kodelecji 1p/19q. Glejaki wielopostaciowe w 90% są nowotworami pierwotnie złośliwymi, bez mutacji w genach *IDH1* i *IDH2*. W ok. 10% przypadków glejaki złośliwe powstają z glejaków o niższym stopniu złośliwości wskutek progresji stopnia złośliwości. Określa się je mianem wtórnych glejaków wielopostaciowych i zwykle wykrywa się w nich mutację w genach *IDH*. W przypadku niemożliwości wykonania badań molekularnych bądź otrzymania wyników bez wiążących rezultatów dodaje się określenie NOS (*not otherwise specified*).Ważnym elementem diagnostyki molekularnej glejaków wielopostaciowych jest zbadanie metylacji rejonu regulatorowego promotora genu *MGMT*. Jest to ważny czynniki prognostyczny, jak i kwalifikujący pacjentów do terapii temolozomidem. Skuteczność MGMT zależy od jego stężenia. Proces metylacji wysp CpG promotora tego genu prowadzi do obniżenia aktywności MGMT. Komórki ze zmetyowanym *MGMT* są dużo bardziej narażone na działanie temozolomidu. Ocena hipermetylacji DNA regionu promotorowego MGMT jest możliwa dzięki współczesnym technikom biologii molekularnej.

SESJA PLENARNA 3

Guzy tkanek miękkich

przewodniczący/chairmans: Janusz Ryś (Kraków), Konrad Ptaszyński (Olsztyn)

L70
New fusion sarcomas. Histopathology and clinical significance of selected entities

Markku Miettinen

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Streszczenia nie nadesłano.

L71
Oncogenic kinase gene fusions in cancer. Implication for targeted therapy

Jerzy P. Lasota

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Streszczenia nie nadesłano.

L72
Small round cell tumors – rich men, poor men diagnostic approachy

Konrad Ptaszyński

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Small round cell tumors (SRCT) encompass a heterogeneous group of malignant neoplasms. Histologically they are composed of monotonous proliferation of small round cells. SRCTs comprise three groups of malignancies: 1) small round cell sarcomas including Ewing sarcoma, CIC- rearranged (Ewing-like) sarcoma (most common CIC-DUX4), BCOR-rearranged (Ewing-like) sarcoma (most common BCOR-CCNB3), desmoplastic small round cell tumor and rhabdomyosarcoma; 2) sarcomas with small round cell component including poorly differentiated synovial sarcoma, mesenchymal chondrosarcoma, high grade (round cell) myxoid liposarcoma, and small cell osteosarcoma; 3) non-sarcomatous small round cell tumors including lymphoma, small cell melanoma, small cell carcinoma, Merkel cell carcinoma, NUT carcinoma, and neuroblastoma. Initial diagnosis may be based on the integration of histology clinical data analysis and radiologic consultation. It is believed that the diagnostic and therapeutic approach should include a multidisciplinary team (MDT) discussion of a case. Some SRCTs, e.g. mesenchymal chondrosarcoma, can be diagnosed based on clinical, radiological, and histological observation only. Others, e.g. rhabdomyosarcoma, should include immunohistochemical studies, while many other cases require molecular tests for the final diagnosis. If available, next-generation antibodies (e.g. NKX2-2, ETV4, BCOR) developed based on molecular alterations may help. A targeted next-generation sequencing approach is considered reasonable in undifferentiated round cell sarcomas. The Archer company sarcoma panel is a targeted sequencing test to detect and identify fusions of 26 genes simultaneously.

L73
Nomograms for predicting of both the cause-specific survival and the risk of distant metastases in patients with selected soft tissue sarcomas

Janusz Ryś

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According to the recently introduced eighth edition of the AJCC staging system the prognosis of soft tissue sarcoma (STS) patients depends on location of the primary tumor and tumor size managed as four categorical variable. This new categorization of the primary tumor much better reflects the direct relationship between tumor size and the metastatic risk, however, despite the significant progress, the value of the TNM system in assessing patients' prognosis it is still unsatisfactory, because it does not include the histological type of the tumor. The nomograms dedicated for patients with liposarcomas, synovial sarcoma, rhabdomyosarcoma, leiomyosarcoma, MPNST, desmoid type fibromatosis, and gastrointestinal stromal tumors have

been recently published. They all are based on independent factors determining the prognosis; of course, these factors are different for each of the listed histological subtypes of soft tissue sarcomas.

L74
Multiparametric evaluation of prognostic factors in patients with liposarcoma

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Liposarcoma (LPS), the most frequent soft tissue sarcoma (STS), in WHO classification is divided into 4 histologic subtypes forming 3 biologic groups which are histologically, genetically and clinically distinct: 1. Well-differentiated/dedifferentiated LPS, 2. Myxoid/round cell LPS, 3. Pleomorphic LPS. In AJCC 2017 new site-specific staging system for STS also applies to adipocytic neoplasms with division into: 1) trunk and extremities, 2) retroperitoneum, 3) head and neck, 4) abdomen and thoracic visceral organs.

The most important well-known risk factors in liposarcoma are: histology, grading and location, followed by size, excision margin and molecular changes.

According to heterogeneity and different clinical outcome in adipocytic neoplasms subtype specific postoperative nomogram for liposarcoma was introduced by Dalal in 2006. It combines many variables for more personalized risk assessment, better patient counseling and planning of adjuvant therapy. Multiparametric liposarcoma nomogram can be a useful additional tool for oncologist for better patients' management.

L75
Cytologia cienkowarstwowa BLX – nowa technologia

Jan Faryna, Grzegorz Tracz

Sponsor: Jarwis

Prezentujemy omówienie cytologii jednowarstwowej. Porównujemy metody cytologii płynnej i wskazujemy zalety metody cytologii cienkowarstwowej wraz z omówieniem typowych obrazów ukazujących patologię ginekologiczne jak i nieginekologiczne.

Przedstawiamy nowy aparat do wykonywania preparatów cytologicznych cienkowarstwowych w nowej technologii. Aparat pozwala w wersji zasadniczej na jednorazowe wykonanie 24 preparatów.

Jego główne zastosowanie to wykonywanie preparatów cytologicznych ginekologicznych, jak również preparatów z innych narządów w technice cytologii cienkoigłowej i cytologii z płynów (płyny z jam ciała, mocz).

Aparat barwi preparaty według wybranego typu barwienia jak również przygotowuje osady niebarwione w celu wykonania barwień dodatkowych.

W cytologii ginekologicznej preparaty ocenia są wg klasyfikacji Bethesda.

Umożliwia uzyskanie rozmazów wysokiej jakości, pozbawionych zbędnych zanieczyszczeń.

Pozwala na uzyskanie potrzebnych zagęszczeń komórek. Jest aparatem łatwym w obsłudze i pozwalana na szybkie uzyskanie preparatu wysokiej jakości.

L76
Rak potrójnie ujemny piersi

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Grant naukowy: Roche Diagnostics

Streszczenia nie nadesłano.

SESJA

Heterogenność raka piersi

przewodniczący/chairmans: Ewa Chmielik (Gliwice), Wojciech P. Olszewski (Warszawa)

L77

Heterogeneity of breast cancer during progression

Janina Kulka

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Heterogeneity is a major hallmark of breast cancer: there are several histological types, substantially differing molecular subtypes, and furthermore, intratumoral- and intertumoral (in multifocal cancer cases) heterogeneity has also been revealed.

Both immunohistochemical and molecular studies proved that metastases occuring during progression may differ from the primary tumor, which represents an other dimension of heterogeneity. The possible reasons behind differences between primary tumors and metastases are the presence of different tumor cell clones in the primary tumor, the selection of the most viable cell clone(s) during oncological treatment, occurence of new mutations along with progression.

Further studies also showed, that in cases of multiple metastases, the metastases may differ from each other, rendering targeted treatment even more challanging in such cases.

An important aspect of heterogeneity is that different (surrogate) subtypes of breast cancers show different distribution of distant metastases: hormone receptor positive breast cancers preferentially spread to the skeletal system, while brain metastases are considerably more often seen during progression of HER2 positive and triple negative breast cancers.

The main lesson from studies on metastatic breast cancer that compared primary tumors with their metastases is that in each case of progressing breast cancer, predictive factors should be re-assessed in order to identify new (or lost) targets of therapy.

L78

Heterogenicity of breast cancer in the context of core needle biopsy assessment and its clinical significance

Ewa Chmielik, Ewa Stobiecka, Katarzyna Steinhof-Radwańska, Małgorzata Kowalska, Dorota Ponikiewska, Dorota Ławniczak-Cielińska, Aleksandra Leśniak, Katarzyna Świderska, Marta Mianowska-Malec, Barbara Grandys, Małgorzata Oczko-Wojciechowska, Rafał Tarnawski, Dariusz Lange, Michał Jarząb

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The pathologist during diagnosing breast cancer in core needle biopsy material, constantly assesses its heterogeneity at the microscopic level. Heterogeneity assessed at the genomic level is beyond its routine assessment, but its analysis allows a better understanding of the factors affecting the results of genomic tests used in assessing the aggressiveness of breast cancer. The lecture will present the issue of heterogeneity at both microscopic and genomic levels based on the results of the project "New molecular diagnostic and imaging tools in individualized therapy for breast, thyroid and prostate cancer (MILESTONE)".

In a group of 60 patients with breast cancer, selected transcripts and the molecular subtype of the cancer were assessed using genomic signatures based on the material of 3 tissue cores from needle core biopsy taken before chemotherapy.

Genomic analysis was performed involving the analysis of the entire transcriptome using high-density oligonucleotide microarrays for 60 patients. Marker gene expression ER (ESR1), PR (PGR) and HER2 (ERBB2) were compared with immunohistochemical assessment. High expression of ER and PR coding genes correlated with high expression of immunohistochemically assessed protein. Low expression of ER and PR proteins assessed by immunohistochemistry in genomic analysis was associated with similarly low copy number of these transcripts as in immunohistochemically negative samples. Additionally, the correlation of mitotic index assessment with gene expression was analyzed. There was no clear correlation between the mitotic index assess-

ment and Ki67 (MKI67), as well as selected other proliferation related genes (AURKA and CDK1).

To evaluate the prediction of the genomic subtype of breast cancer, the research version used multi-gene signatures similar to the PAM50, SSP2006, AIMS, SCMOD1, SCMOD2, Genius, intClust kits, using the *genefu* package (Bioconductor).

The discrepancy in the genomic profile between three tumor sections was analyzed. For 67% of patients, there were discrepancies in the prediction of the cancer subtype for 1 or 2 slices in at least one of the examined signatures, which translated into a coherent genomic cancer subtype. In contrast, discrepancies difficult to interpret were obtained for 33% of patients in whom genomic heterogeneity was observed between three slices, which hindered a coherent assessment of the genomic subtype based on existing signatures. Genomic analysis in this group of patients using different signatures indicated even 4 different subtypes of cancer in tissue cores of the same tumor in the same patient.

The real heterogeneity of the tumor, including the varied percentage of tumor content in the stroma and the variability of cancer cells requires the development of signatures resistant to this phenomenon, so that they can be reliably used in the study of small tissue cores.

Work under the project "New molecular diagnostics and imaging tools in individualized therapy for breast, thyroid and prostate cancer (MILESTONE)" financed by the National Center for Research and Development (contract STRATEGMED2 / 267398/4 / NCBR / 2015).

L79

Heterogenność podtypów biologicznych raka piersi

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Streszczenia nie nadesłano.

L80

Kliniczne aspekty heterogenności raka piersi

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Streszczenia nie nadesłano.

SESJA

Patologia okresu okołoporodowego

przewodniczący/chairmans: Agnieszka Korolczuk (Lublin), Aldona Woźniak (Poznań)

L81

Ocena histopatologiczna popłodu – aktualny stan wiedzy

Agnieszka Korolczuk

Lublin

Streszczenia nie nadesłano.

L82

Pathology of stillbirth

Noel McEntagart

Dublin, Ireland

Streszczenia nie nadesłano.

L83

The practical application of Amsterdam classification in routine examination of placenta

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Department of Pathology, University Hospital OUS-Ullevål, Oslo, Norway

There are differences between pathology laboratories and between perinatal/placenta pathologists worldwide. The Placenta Workshop in Amsterdam in September in 2014 resulted in a set of guidelines for macroscopic examination of placenta as well as established criteria for microscopic evaluation of many of the placental lesions. New terminology was proposed. The objective of this new consensus was to unify the language we use for describing placental morphology, ensure the correct interpretation of the morphology in the light of clinical data about fetus and the mother, and last but not least, to help communicate our findings in an understandable manner to our colleagues, the practicing obstetricians and gynecologists. In Norway, we work on communication between placenta pathologists and the practitioners, and many departments use a Norwegian version of the Amsterdam classification, which will also be discussed.

The lecture describes five cases of adverse pregnancy outcomes, ranging from transient birth asphyxia to unexpected IUFD of a full term baby, and from fetal growth restriction to apparently normal looking fetus and placenta. In each case the placenta was sent to our department for histopathologic examination, the diagnosis was made with the regard to Amsterdam criteria and there was also made a comment with the proposed clinical relevance of the findings. The topics included in the lecture are maternal malperfusjon, fetal malperfusjon, maturation defects and chronic inflammatory processes (villitis, intervillositis and deciduitis) in the placenta. There will be short mention of other placental pathologies also. Each case will illustrate the diagnostic process, from receiving the specimen at our department, through macro- and microscopic examination and finally to the end product, the histopathological rapport.

Table 1. Summary of clinical information (case 1-5).

Case	Clinical data
1.	**Mother:** 25-year old woman, G1,P0. Healthy, but family history of hypertrophic cardiomyopathy in mother and grandmother.
	Clinical problem: weak fetal movements in week 38. Ultrasound evidence of disturbed flow in umbilical cord (Doppler). Acute C-section.
	Baby: Boy, 2594 g (on the smaller end, but normal) Apgar: 3-5-7. Down's syndrome. Intestinal necrosis in first months of life resulting in resection of 45 cm of terminal ileum.
2.	**Mother:** 26-year old woman, G1,P0. Healthy.
	Clinical problem: spontaneous birth in week 38+6, but slow progression and baby with signs of fetal asphyxia, use of vacuum.
	Baby: Boy, 3120 g (normal) Apgar: 9-9-10.
3.	**Mother:** 33-year old woman, G4,P2. Previously healthy.
	Clinical problem: High blood pressure in week 31.
	Baby: Boy, 1425 g (SGA,-25% growth restriction) Apgar: 8-8-9.

Table 2. Simplified Norwegian Placenta Classification used by both pathologists and obstetricians

Category	Diagnosis
1	Normal placenta according to gestational age
2	Placenta with chorioamnionitis
3	Placenta with chronic villitis (VUE) or/and intervillositis.
4	Placenta with maternal vascular malperfusjon.
5	Placenta with fetal vascular malperfusjon.
6	Placenta with maturation defect.
7	Placenta with morphology indicating gene/ chromosomal abnormality
8	Placenta with abnormal implantation
9	Placenta with various lesions/ other pathologies.

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L84

Postnatal clinical placentology – from clinical manifestation to diagnosis – multiparameter diagnostics of preeclampsia and FGR

Martyna Trzeszcz

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Department of Pathology and Clinical Cytology, University Hospital in Wroclaw, Poland

Hypertensive disorders of pregnancy (chronic hypertension, gestational hypertension, preeclampsia) are a common complication occurring in up to 10% of gestations. Due to simultaneous negative affection on a mother and a fetus are a major diagnostic-therapeutic challenge and a multiparameter multidisciplinary approach is needed. Preeclampsia (PE) entails a different etiology and shows a different clinical manifestation of presented symptoms as late- and early-onset PE. A rapid progression can occur on its course leading to severe maternal-fetal complications, including death of both. Among potential complications of hypertensive disorders is also a fetal growth restriction (FGR).

A significant increase in importance of clinical placentology has been brought in recent years. It is determined by an earlier detection but most of all by making enable a risk assessment and an early prevention of gestational complications. Improvements in ultrasonographic diagnostics with its technological modifications and with MRI implementation as well, have given new prospects of development an effective perinatal care. Likewise, with the application of biochemical placental biomarkers (PAPP-A, PlGF and sFlt-1) providing a possibility of a primary and a secondary PE and FGR prevention.

A postnatal clinical placentology should be a respond to a continuously improving prenatal diagnostics, and a part of modern perinatal pathology. Verifying novel prenatal sonographic and biochemical diagnostic tools, identifying of the new clinico-placentological correlations that are starting to appear, or assessing a clinical relevance of a potentially masking effect the ASA prophylaxis are current challenges facing the contemporary placental diagnostics.

Placenta is critical in a pathogenesis of gestational hypertensive disorders. Decidual arteriopathy is a fundamental morphologic manifestation of these and is consistent with an inadequate remodeling of spiral arteries. It constitutes a starting point for a development of other hypertension-related lesions, including loss of a vascular integrity and a maternal vascular malperfusion, such as: placental hypoplasia, retroplacental and/or marginal hematoma, infarctions, abnormal villous maturation (acceleration and/or distal villous hypoplasia). It should be also to keep in mind an impact of ASA prophylaxis with its clinically relevant masking effect. Diagnosis of the severe maternal vascular malperfusion is related to a recurrence risk in subsequent pregnancies as 10-25%.

An interdisciplinary approach, an application of the same up-to-date terms for the PE, FGR diagnosis and a clinical guidances' knowledge is a key to a clinical usefulness of the modern placentology. Implementation of current PE terms revealed by the International Society for the Study of Hypertension in Pregnancy (ISSHP) 2018 with an approval by FIGO in 2019, the Delphi consensus 2016 with FGR definition, recommendations of the International Society of Ultrasound in Obstetrics and Gynecology (ISUOG) 2019 with a guidance of the European Society of Cardiology 2018 for application of placental biomarkers, and also an implementation of national Polish recommendations 2019 for a local management of hypertension in pregnancy to perinatal pathologists' practice is a necessary condition of this multidisciplinary approach, needed to a proper identification of pathological abnormalities, also in cases of intrauterine or perinatal death.

SESJA

Interdyscyplinarna sesja patologii szyjki macicy – nowe spojrzenie na kontrowersje diagnostyczne w erze pierwotnego skriningu HPV

przewodniczący/chairmans: Włodzimierz Olszewski (Warszawa), Michał Jeleń (Wrocław), Andrzej Nowakowski (Warszawa)

Moderator: Romana Tomaszewska (Kraków)

Moderator: Robert Jach (Kraków)

L85

Współczesna profilaktyka wtórna raka szyjki macicy – podstawy patomorfologiczne i molekularne

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Streszczenia nie nadesłano.

L86

Czy patolog i ginekolog będą w przyszłości potrzebni do realizacji badań przesiewowych w kierunku stanów przedrakowych i raka szyjki macicy?

Andrzej Nowakowski

Warszawa

Streszczenia nie nadesłano.

L87

HRHPV a LBC – nowa rola cytologii w erze pierwotnego skriningu HPV. Biomarkery immunocytochemiczne – narzędzia selekcji ryzyka HSIL oraz nowoczesnej kontroli niezgodności cytowirusologicznych i cytohistologicznych. Immunohistochemia p16 – kluczowa rola diagnostyczna i co jeszcze? Wyniki histopatologiczne – biopsja kolposkopowa vs. materiał chirurgiczny, kto ma rację? Analiza przyczyn rozbieżności diagnostycznych. Czy niezgodność zawsze wskazuje na błąd diagnostyczny czy może także na ograniczenia metody? Czy istnieje „złoty standard" w detekcji HSIL – wieloparametrowa dyskryminacja ryzyka. Prezentacja przypadków klinicznych

Martyna Trzeszcz, Maciej Mazurec

Wrocław

Streszczenia nie nadesłano.

SESJA

Patologia nowotworów wieku rozwojowego

przewodniczący/chairmans: Maciej Pronicki (Warszawa), Józef Kobos (Łódź)

L88

Trudności diagnostyczne w rozpoznawaniu rzadkich nowotworów wieku dziecięcego

Jadwiga Małdyk

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Streszczenia nie nadesłano.

L89

Mięsak prążkowanokomórkowy u dzieci i młodzieży. Różnice morfologiczne oraz diagnostyka histopatologiczna, immunohistochemiczna i molekularna w guzach tej grupy

Teresa Klepacka

Warszawa

Streszczenia nie nadesłano.

L90

Zasady diagnostyki nowotworów nerek wieku dziecięcego wg obowiązującej klasyfikacji SIOP – RTSG

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Guz Wilmsa (nerczak płodowy) to złośliwy nowotwór nerki wieku rozwojowego (dziecięcego). Nowotwór ten opisał w 1879 r. William Osler, a w 1898 r. Feliks Birch-Hirschfeld. Jednak dopiero opis 7 przypadków tego guza przez Maxa Wilmsa w 1899 r. jako guz mieszany nerki stał się podstawą do przyjęcia nazwy tego nowotworu. Guz ten wywodzi się z embrionalnej tkanki nerkotwórczej i związany jest z nosicielstwem mutacji genu *WT1*, *WT2*, *FWT1* i *FWT2*. Obraz histologiczny guza przedstawia budowę trójskładnikową: składnik nabłonkowy utworzony przez komórki różnicujące się w kierunku nabłonkowym tworząc poronne cewki i kłębuszki nerkowe, składnik blastemiczny zbudowany z małych komórek o skąpej cytoplazmie i hiperchromatycznych jądrach oraz składnik podścieliskowy (zrębowy) utworzony przez myksoidalną tkankę mezenchymalną i wrzecionowate komórki. Istotnym elementem opisu guza Wilmsa jest także stwierdzenie obecności anaplazji komórkowej. Obecnie w Europie obowiązuje Klasyfikacja nowotworów nerek u dzieci wg kryteriów SIOP (2001, 2016). W klasyfikacji tej guzy dzieli się na guzy o małym, pośrednim i dużym ryzyku. Kryteria histologiczne stanowią: obraz morfologiczny guza, a przede wszystkim proporcja poszczególnych składników (komponentów), a także odsetek pól martwicy i zmian regresywnych w stosunku do powierzchni całego guza. Bardzo istotnym elementem rozpoznania histopatologicznego jest również precyzyjne określenie stanu zaawansowania guza. Stosowanie tej klasyfikacji związane jest ze standardem leczenia dzieci z tymi nowotworami. Zasadą postępowania w przypadku tych guzów wg SIOP jest przedoperacyjna chemioterapia u dzieci powyżej 6. miesiąca życia. Jest ona odmienna od sposobu postępowania stosowanego w Ameryce wg klasyfikacji COG. Obecnie w Europie wprowadzany jest w ramach SIOP-RTSG protokół nazwany Umbrella. Celem tego protokołu jest udoskonalenie diagnostyki (prowadzenie badań molekularnych i wprowadzenie precyzyjnych kryteriów histologicznych i radiologicznych) w celu jak najlepszego dostosowania leczenia do określonego typu guza.

L91

Rozpoznawanie anomalii naczyniowych wieku dziecięcego wg zrewidowanej w 2018 r. klasyfikacji ISSVA

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Obecnie stosowana klasyfikacja anomalii naczyniowych wg ISSVA (*International Society for the Study of Vascular Anomalies*) wieku rozwojowego różni się od powszechnie stosowanej u dorosłych klasyfikacji zmian naczyniowych wg Światowej Organizacji Zdrowia (WHO). W klasyfikacji ISSVA anomalie naczyniowe dzieli się na guzy naczyniowe oraz malformacje naczyniowe. Pośród guzów naczyniowych w klasyfikacji tej wyróżnia się grupę guzów łagodnych o pośrednim stopniu złośliwości oraz guzów złośliwych. W grupie malformacji naczyniowych wyróżnia się malformacje proste, złożone, malformacje dużych naczyń oraz malformacje związane z innymi anomaliami. Wśród malformacji prostych wyróżnia się malformacje kapilarne, malformacje limfatyczne, malformacje żylne, malformacje tętniczo-żylne oraz przetoki tętniczo-żylne. Klasyfikacja ISSVA odnosi się do biologicznego zachowania guzów naczyniowych. Szczególnie istotne jest rozpoznanie naczyniaka wczesnodziecięcego (*infantile hemangioma*), potwierdzone dodatnim odczynem GLUT1, ponieważ oznacza to, iż guz tego typu w przyszłości zaniknie. Istotne jest również właściwe rozpoznanie typu wrodzonego naczyniaka (*congenital hemangioma*), takie jak RICH, NICH i PICH. Bardzo ważne jest poprawne rozpoznanie ziarniniaka naczyniowego (*pyogenic granuloma*), najczęstszego guza naczyniowego u dzieci. Istotne jest, aby w grupie malformacji właściwie rozpoznać jej typ oraz w każdym przypadku dążyć do uzyskania informacji klinicznych, dotyczących możliwości wystąpienia innych anomalii oraz okresu trwania choroby.

Doniesienia ustne
Oral presentations

Streszczenia
Abstracts

O1

Are ER(–)/PgR(+) breast cancers real? Histopathological and immunohistochemical analysis of cases from 9 centers

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Steroid hormone receptors are important prognostic markers in breast cancer. Progesterone receptor (PgR) expression is induced by estrogen receptor α (ER) in breast cancer cells, thus the existence of ER(–)/PgR(+) tumors is doubted and considered artifactual. The aim of the current study was to reevaluate ER(-)/PgR(+) breast cancer cases collected from 9 Polish oncology centers and to establish if the use of various anti-ER antibody clones influences diagnosis.

Immunohistochemical and HE slides from 80 cases of ER(–)/PgR(+) tumors were reevaluated by three pathologists. The cases without tissue samples prior to systemic therapy and primarily misdiagnosed cases were excluded (n = 21; 26.25%). Then, 59 cases were stained with antibodies against ER (clones 1D5 and SP1) and PgR (clone 636).

ER(–)/PgR(+) phenotype was confirmed in 32 cases (40%). The diagnosis was changed to ER(+) in 15 cases (18.75%), and to PgR(–) in 11 cases (13.75%). SP1 clone was more sensitive than 1D5 in detecting ER(+) cases ($p < 0.0001$, χ^2 test; κ Cohen coefficient = 0.53. Confirmed ER(–)/PgR(+) tumors showed three morphologic patterns: high-grade invasive carcinoma of no special type, apocrine-like, and carcinoma with the central acellular zone. They demonstrated higher Ki67 expression than other types of breast cancer ($p < 0.001$, Kruskal-Wallis ANOVA). In survival analysis, their clinical course was similar to ER(–)/PgR(–) cases.

The diagnosis of ER(–)/PgR(+) breast cancer requires caution and preferentially double-check with the use of alternative anti-ER antibody clone and another FFPE tissue block. Real ER(–)/PgR(+) cancers show distinct clinicopathological features with high-grade morphology, high Ki67, and survival pattern resembling double-negative breast cancer.

O2

Microenvironment and androgen receptor in triple negative breast cancer (TNBC)

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Triple negative breast cancer (TNBC) is typically associated with poor prognosis. More effective therapeutic strategies are needed. There are two particularly interesting areas of exploration of TNBC: the presence of the androgen receptor in cancer cells as well as elements of the tumor microenvironment. The aim of the study was to determine the presence of CD4 +, CD8+, CD68+, CD163+, CD19+, CD138+, CD56+, FoxP3 + cells in the TNBC microenvironment, presence of the androgen receptor in cancer cells and determination of the relationship between these elements and histopathological features of the tumor.

We selected 315 TNBC cases. A tissue microarray (TMA) was constructed and then the immunohistochemical reactions were performed.

The androgen receptor was present in the tumor cell nuclei in 22.8% of cases and we proved the relation between the cancer's NHG degree and the presence of this receptor. The relation between the androgen receptor and the presence of CD163 + cells in the microenvironment was also confirmed as well were the relations between some elements of the microenvironment (mainly CD163 + cells) and the NHG, pT and pN of TNBC.

Confirmation of the relation between the evaluation markers and tumor features suggest that these parameters might be a good potential footholds in the planning of new therapies. We suppose that CD163 cells in the TNBC microenvironment could be used as predicting factor in new potential therapies in TNBC.

O3

Utility of morphometric analysis and expression of ERG, PTEN and SPINK1 in core needle biopsy to predict prostatic cancer stage

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Number of patients with prostatic cancer that are candidates for conservative management instead of radical treatment is increasing and it becomes very important to select them precisely. Apart of Gleason score not any other parameter that can be described in core needle biopsy is included in planning of treatment nowadays. The aim of the study was to determine the utility of morphometric parameters and expression of ERG, PTEN and SPINK1 in core needle biopsy samples to predict prostatic cancer extent.

Retrospective analysis of core needle biopsy samples obtained from 151 patients between 2007 and 2015 was performed. Morphometric parameters such as: length of the core, presence and length of cancer in each core, number of cores involved with cancer and Gleason score were evaluated. Moreover, cancer to core length, cumulative cancer length, volume of cancer focus, cumulative cancer foci volume were calculated. Expression of ERG, PTEN and SPINK1 were evaluated in tissue microarrays. Collected data were compared to radical prostatectomy findings in the same patients.

Estimated volume of single cancer focus [ml] can be useful to predict higher stage (pT3) (OR: 1.0016; 95% CI: 1.0005-1.0027) and cumulative estimated cancer volume [ml] can be useful to predict the presence of extraprostatic extension (OR: 1.1188; 95% CI: 1.0448-1.1980). Presence of cancer in surgical margin in radical prostatectomy specimen can be predicted by the number of cores involved with cancer (OR:1,31; 95% CI: 1.11-1.55). Perineural invasion is more common in patients with loss of PTEN expression (OR: 4.56; 95% CI: 1.10-18.87), with ERG expression (OR: 6.75; 95% CI: 2.06-22.10), Gleason score > 6 (OR: 6.50; 95% CI: 2.01-21.02) and percent of core involved by cancer (OR: 44.87; 95% CI: 5.57-394.26). Accuracy of prediction can be improved when anatomical distribution of obtained cores is considered.

Based on obtained results some morphological parameters and expression of markers evaluated in prostatic core biopsy can be applied in prediction of cancer extension. Selection of patients available for conservative management may be better with additional data described in biopsy samples.

O4

A first step analysis of a complex propranolol action mechanisms in infantile hemangiomas and their relation to CD133 and HIF1α signaling from proliferation to involution phase

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Infantile hemangiomas (IH) are tumors characterized by proliferation and involution phases. It is recently proved that proliferation phase is driven by activation of vascular endothelial growth factor receptor 2 (VEGFR2), and the normalization of vascular growth factor signaling by decreasing VEGFR2 expression and increasing VEGFR1 starts the involution phase. Although described above mechanism seems to be well established, the complete signaling in IH tissues on the transition from proliferation to involution phase, especially evoked by propranolol treatment is enigmatic.

Here we presented the studies on CD133 and HIF1α expression in rare group IH tissues which underwent propranolol treatment and their relation to VEGF signaling.

The limited IH tissue sections were selected for the preliminary study, from confirmed by immunochistrochemistry Glut-1(+) (the growth phases were accepted as that of depicted in Mulliken and Enjolras' description). Immunohistochemical estiomation of CD133 and HIF1α expression was performed and compared with previous VEGF studies, as well as related to the recent literature discoveries (Bone Marrow Derived Cells and SDF-1 part).

There were observed differences in CD133 and HIF1α positive cells indices in proliferation and involution phases. Obtained results in relation to VEGF signaling and propranolol use may suggest that the mechanisms involving of CD133, HIF1α and potentially SDF-1 and CD45+ cells takes part as a potential regulators. Presented studies brought us closer to understanding of complex signaling in IH tissues, as well as alight new mechanisms of tumor regression

at the course of propranolol treatment for further investigation.

O5
The prognostic value of pattern-based grading system of pancreatic cancer

Michał Bieńkowski[1], Rafał Pęksa[1], Adrian Perdyan[1], Justyna Kostro[2], Jakub Rojek[1], Stanisław Hać[2], Wojciech Biernat[1]

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Pancreatic cancer is one of the leading causes of cancer-related deaths worldwide and its mortality rate is systematically growing in contrast to other frequent neoplasms. Histological grading is an essential prognostic factor, however, it is not unanimously understood. The WHO classification defines strict criteria based on the average of 4 scores. In contrast, in 2005 Adsay *et al*. proposed an alternative system based on tissue architecture patterns (similar in concept to the prostate cancer grading). Unfortunately, it does not seem to have gained any recognition. Here, we compared the prognostic value of grading systems according to WHO and by Adsay *et al*.

The study group constituted of 107 pancreatic cancer patients: 51 males and 56 females with the median age of 66 years (range: 35-84). Histological grade was assessed according to WHO criteria (gland formation, mucin production, nuclear atypia and mitotic frequency in the least differentiated area) and according to Adsay *et al.* (Am J Surg Pathol 2005; 29: 724-733). Statistical analysis was performed with Cohen's kappa and Cox proportional hazard regression using R statistical environment.

There was a relatively good concordance between WHO grades and the pattern approach (weighted κ of 0.78). The former offered a slightly better prognostic value (HR = 1.54, p = 0.01) than the latter (HR = 1.35, p = 0.02).

In summary, although the pattern-based approach does not surpass the WHO grading, it is easy to use and may potentially offer some additional prognostic information.

O6
Osteopontin and premalignant breast lesions

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Progress in imaging and biopsy of breast tissue has enabled the detection of early lesions with different degrees of risk for transformation, raising the question who should receive treatment to counteract the potential for a progression to breast cancer. Because the secreted metastasis mediator osteopontin (OPN) is a marker for breast cancer progression, its presence in premalignant breast lesions may reflect progression risk.

By means of immunohistochemistry, we analyzed correlation between osteopontin variant expression with pre-cancerous breast lesions. The lesions comprised hyperplasia, papilloma, and carcinoma in situ from 415 women, and also from healthy women to assess a) staining for OPN exon 4 or OPN-c in low-risk to high-risk lesions b) correlations between staining and relapse or survival.

The markers correlated with risk. They were prognostic for relapse and survival. More than 95% of women, who experience a relapse had pathology scores of 2-3 for OPN-c intensity at the time of initial diagnosis. 0% of women free of OPN-c (pathology score 0), and about 10% of OPN-c pathology score 1 relapse over 5 years. When combining OPN-c and OPN exon 4 staining, all of the low intensity patients are alive after 5 years, whereas women in the high category have a 50% chance to die within 5 years. Of patients who died, close to 80% had a high score at the time of initial diagnosis.

The addition of OPN splice variant immunohistochemistry to standard pathology work-ups has the great potential to aid decision making in breast cancer prevention.

Key words: breast cancer, premalignant lesion, ductal hyperplasia, tumor progression marker, immunohistochemistry.

O7

Calcification in liver of dogs with congenital portosystemic shunts

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Portosystemic shunts are abnormal vascular connections between the portal vein system and systemic venous circulation. Congenital portosystemic shunts, most commonly recognized in dogs, constitute pathological vessels that developed during embryonic life. Their presence, as previously thought, is not associated with portal hypertension. In humans, reported cases of calcification in the portal system are rare, and most of them have been associated with longstanding portal hypertension, which is capable of causing portal venous calcifications due to mechanical stress to the vessel's walls.

The aim of this study was to check the presence of calcification connected with the portal vein and the portosystemic venous branches in dogs with congenital portosystemic shunts.

Material for the study were 125 archival paraffin blocks, collected in 2005-2014 during diagnostic laparotomies or surgical closures of pathological vascular shunts, which included surgically biopsied liver samples from dogs of different breeds and both sexes. Slides were stained HE and Köss method for calcium salts.

The extrahepatic single shunts were confirmed in 119 dogs, extrahepatic multiple shunts in 1 dog and intrahepatic shunts in 5 dogs. Calcification was present in the vein's walls in 2 dogs (1.6%) with extrahepatic portosystemic shunt: Miniature Schnauzer, male, 12 months of age and cross-breed, male, 8 months of age. Calcification, which was visible around vessels in the portal area, not correlate with degenerative lesions at vessels walls (dystrophic calcification). This led us to conclude that, in the light of the humans literature data, in such animals portal hypertension may have occurred.

Sesje plakatowe
Poster sessions

Streszczenia
Abstracts

P1

Evaluation of the importance of selected proteins of the obesity-inflammation-tumor axis in the group of patients with endometrial cancer

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Endometrial cancer (EC) belongs to one of the most common malignant neoplasms. Obesity, as a well-known risk factor for endometrial cancer, plays role in carcinogenesis by the promotion of subclinical chronic inflammation. Inflammation is related to the pathogenesis of tumors, including EC. The aim of this study is to explain the role of LEP, LEPR, CD68, CD163, GDF15, GFRAL, RET – proteins potentially involved in mechanisms regulating obesity-inflammation-cancer axis in EC, what fits into current trends of seeking for more sensitive and characteristic markers of the process of EC, and biomarkers responsible for regulation of obesity and cachexia process in oncological patients.

158 patients with histopathologic diagnosis of EC were qualified to the study and correlated with clinicopathological features. The survival time was assessed. Immunohistochemical (IHC) analyses were performed on archive tissue sections.

The results of IHC were that all examined proteins expression was significantly higher in EC tissues compared to normal tissues ($p < 0.05$). The expression of CD68 and CD163 was significantly associated with histological grade, Bokhman's classification ($p < 0.05$). The results showed that higher GDF15 expression was positively correlated with FIGO stage, obesity and diabetes ($p < 0.05$). High level of RET was associated with poor prognosis.

The obtained results, combined with histopathological and clinical diagnosis may cause better understanding of mechanisms of inception and progression of EC, as well as determining potential prognostic and diagnostic biomarkers, new methods of preventing and new molecular targeted therapy.

P2

Utility of morphometric analysis and expression of ERG, PTEN and SPINK1 in core needle biopsy to predict prostatic cancer stage

Paweł Bojar, Lech Wronecki, Justyna Szumiło

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Estimated volume of single cancer focus [ml] can be useful to predict higher stage (pT3) (OR: 1.0016; 95% CI: 1.0005-1.0027) and cumulative estimated cancer volume [ml] can be useful to predict the presence of extraprostatic extension (OR: 1.1188; 95% CI: 1.0448-1.1980). Presence of cancer in surgical margin in radical prostatectomy specimen can be predicted by the number of cores involved with cancer (OR: 1.31; 95% CI: 1.11-1.55). Perineural invasion is more common in patients with loss of PTEN expression (OR: 4.56; 95% CI: 1.10-18.87), with ERG expression (OR: 6.75; 95% CI: 2,06-22.10), Gleason score > 6 (OR : 6,50; 95% CI: 2.01-21.02) and percent of core involved by cancer (OR: 44.87; 95% CI: 5.57-394.26). Accuracy of prediction can be improved when anatomical distribution of obtained cores is considered.

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P3

The prognostic value of pattern-based grading system of pancreatic cancer

Michał Bieńkowski[1], Rafał Pęksa[1], Adrian Perdyan[1], Justyna Kostro[2], Jakub Rojek[1], Stanisław Hać[2], Wojciech Biernat[1]

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Pancreatic cancer is one of the leading causes of cancer-related deaths worldwide and its mortality rate is systematically growing in contrast to other frequent neoplasms. Histological grading is an essential prognostic factor, however, it is not unanimously understood. The WHO classification defines strict criteria based on the average of 4 scores. In contrast, in 2005 Adsay *et al*. proposed an alternative system based on tissue architecture patterns (similar in concept to the prostate cancer grading). Unfortunately, it does not seem to have gained any recognition. Here, we compared the prognostic value of grading systems according to WHO and by Adsay *et al*.

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In summary, although the pattern-based approach does not surpass the WHO grading, it is easy to use and may potentially offer some additional prognostic information.

P4

PTEN expression in endometrial carcinomas

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Endometrial carcinoma is the second most common type of uterine cancer. For patients in the clinical stage I 5-year survival rate is 90% but falls below 20% in patients with stage III or IV.

PTEN is a tumor suppressor gene (10q) encoding a phosphatase that inhibits signaling pathway PI3K-AKT-mTOR. Loss of PTEN function is associated with the pathogenesis of many different cancers, particularly endometrial carcinoma. Currently new forms of therapy with PTEN inhibitors in patients with advanced, relapsed or refractory endometrial cancer are studied.

Immunohistochemical assessment of PTEN protein expression in tissue sections of endometrial adenocarcinoma were assesed. Association of PTEN expression with selected clinical and morphological parameters: age, histological grade, infiltration of the cervix and the depth of infiltration of the uterine walls were determined.

The study was conducted in formalin-fixed, paraffin-embedded endometrial carcinomas from 90 patients operated between 2010-2013. PTEN expression was determined by immunohistochemistry using mouse monoclonal anti-PTEN (clone: 6H2.1, Dako), the reaction was visualized using FLEX Dako. Depending on the percentage of PTEN positive cells tumors were diveded into positive and negative.

PTEN negative cancers accounted for 85.8%. In PTEN negative cancers infiltration of the cervix was significantly lower. There was no correlation between the expression of PTEN and age, histological grade and depth of infiltration of the uterine wall.

P5

Interobserver agreement among expert pathologists and residents for TILs evaluation in breast cancer

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The immune response of the host to breast cancer is an important predictor of neoadjuvant chemotherapy. Despite standardization of the assessment of stromal tumor lymphocytes (sTILs), high compliance among pathologists is still a challenge.

The aim of the study was to compare the compliance of TILs quantification among pathologists. The material included 30 breast cancer core biopsies (5 DCIS, 5 invasive lobular, 5 invasive micropapillary, 6 invasive NST and 9 invasive triple-negative cancers). The digital slides were evaluated by a group of 3 experts and 3 residents from international institutions. 15 cases were randomly assigned to each pathologist and every case was scored separately 3 times. Evaluation was made based on the guidelines of the International TILs Working Group on digital slides of 3DHISTECH. The TILs score ranged from 0 to 90%.

A minor discrepancy was noted in cases with abundant lymphocytic infiltration compared to cases in which afford mentioned component was moderately intensive. Interobserver agreement among experts was greater compare to residents, significant discrepancies were observed in 3 and 5 cases out of 30 respectively. Whereas discrepancy between experts and residents occurred in 4 out of 22 cases. Further in 4 cases with high resident's divergence, the assessment made by one of them was always in line with the expert result.

The study proved that TILs assessment is subjective. The pathologist's experience plays a crucial role, which is demonstrated by the high expert interobserver agreement. The major problem in TILs evaluation appeared in breast cancers with medium lymphocytic infiltrates.

P6

SHH pathway in pediatric germ cell tumors – a pilot analysis

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Germ cell tumors (GCTs) are a heterogeneous group of neoplasms affecting patients of all ages. In the pediatric population, they comprise 3% of malignancies, with diverse biology and course. Unfortunately, in around 20% of cases, the outcome is unfavorable – this, in addition to various acute and late side effects of prevailing therapies, is the major impulse to pursue a deeper understanding of their tumorigenesis. Current knowledge links GCTs development to primordial germ cells and various defects of their maturation, division, and apoptosis. Sonic Hedgehog (SHH) pathway is a cell signaling pathway playing an important role in embryonic organogenesis and is thought to be a part of gonad formation through controlling gonocyte migration. Therefore it may contribute to GCTs pathogenesis and progression through paracrine and autocrine signaling. This study presents preliminary results of an immunohistochemical examination of SHH pathway elements using antibodies for SHH, Patched-1 and GLI-1 proteins. The analysis was done on tissue microarrays obtained from paraffin blocks from 41 (22 male and 19 female) pediatric patients with various seminomatous (3 seminomas, 3 germinomas, 11 dysgerminomas) and non-seminomatous tumors (14 Yolk Sac tumors, 1 immature teratoma and 3 mixed malignant germ cell tumors). Almost all cases showed positivity for GLI-1, PTCH-1 was varied, from none to strong positivity, and there was weak positivity for SHH in more than half examined tumors. Further evaluation of SHH components might help to reveal new options for GCTs therapies, increase survival rate and improve the quality of life in the young patients.

Project financed by National Science Centre grant No. 2014/15/B/N24/04855.

P7

Expression of p53 in oropharyngeal squamous cell carcinoma depending on the human papillomavirus status

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A p53 protein is a tumor suppression protein which is overexpressed in squamous cell carcinoma related to *TP53* gene mutations while p16 protein is known to be overexpressed in human papillomavirus (HPV) mediated oropharyngeal carcinoma. The purpose of this study was to investigate the expression of p53 in oropharyngeal HPV-related versus HPV-unrelated carcinoma.

Paraffin blocks were collected from 55 patients with primary oropharyngeal cancer diagnosed in 2017 and 2018 in Oncology Cancer Centre-Institute in Warsaw. The immunohistochemical (IHC) expression of p16 was detected with CINtec p16 Histology and p53 expression was detected with DO-7 antigen. DNA HPV was tested by polymerase chain reaction (PCR) using automatic system Cobas 4800. In this study, the patients with HPV-related carcinoma were identified based on simultaneous positive results of IHC p16 and HPV DNA.

The combination of IHC p16 and PCR classified 56% of the cases as patients with HPV-related carcinoma and 44% as HPV-unrelated carcinoma. Overall, overexpression of p53 was detected in 32% cases. 70% patients with HPV-unrelated carcinoma and only 3% patients with HPV-related carcinoma were p53 positive.

The current study suggests that detection of IHC p53 could be a useful marker of discrimination HPV-related and HPV-unrelated carcinoma.

P8

Frequency of somatic mutations in KRAS, NRAS and BRAF genes in colorectal cancer tumor tissue

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The tumor tissue of patients with colorectal cancer have been routinely profiled for somatic mutations in KRAS, NRAS and BRAF genes, since the discovery that these molecular changes are associated with resistance to anti-EGFR (epidermal growth factor receptor) antibodies (cetuximab and panitumumab). Here we present the results of an ongoing study aimed at revealing the possible correlation between the somatic status of KRAS, NRAS, BRAF genes and clinico-pathological features in colorectal cancer.

The examined gorup consisted of 396 patients with colorectal cancer treated in Lower Silesian

Oncology Centre in Wroclaw in 2017-2019 period. Molecular tests for somatic mutations in KRAS, NRAS and BRAF were conducted with Idylla System (Biocartis), based on the qPCR method. The following tests were used: KRAS 3.0 and NRAS/BRAF 1.0. Interpretation of qPCR reactions results was conducted automatically by algorithm included in the software provided by the manufacturer. Detailed clinical and pathological data were collected for 204 patients by the date the poster was created.

Mutations in KRAS gene were detected in 48% (190) patients. NRAS and BRAF genes revealed mutations in 4,8% (19) and 6,6% (26) cases, respectively. Non-diagnostic results were obtained in 4% (16) cases.

The frequency of mutations (as a relative percentage of all mutated cases) is presented in the Table.

Relationship between frequency of KRAS/NRAS/BRAF mutations and detailed clinical and pathological data (including TNM, histological grade, tumor size, localization of primary tumor and metastases) for limited numer of patients was presented in this poster.

The frequency of KRAS/NRAS/BRAF mutations in colorectal cancer from Lower Silesia Region are similar to frequencies reported by other investigators.

Gene	Mutation	%
KRAS	KRAS G12D	23.8%
	KRAS G12V	20.0%
	KRAS G13D	11.5%
	KRAS G12A	6.0%
	KRAS G12C	5.1%
	KRAS A146P/T/V	4.3%
	KRAS G12S	3.4%
	KRAS Q61H	1.7%
	KRAS G12R	1.3%
	KRAS A59T/E/G	1.3%
	KRAS Q61L/R	1.3%
	KRAS K117N	0.9%
	KRAS Q61K	0.4%
NRAS	NRAS Q61K	2.1%
	NRAS Q61R	1.7%
	NRAS G12D	0.9%
	NRAS G12C	0.9%
	NRAS G13R/V	0.9%
	NRAS Q61L	0.9%
	NRAS Q61H	0.4%
	NRAS A146T/V	0.4%
BRAF	BRAF V600E/D	11.1%

P9

A rare case of multiple calcifying fibrous tumors of a pleura coexisting with sarcoidosis

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Calcifying fibrous tumor (CFT) is a rare benign soft tissue lesion, mostly observed in children and young adults. Common locations include gastrointenstinal tract, peritoneum, mediastinum and pleura. CFT is usually found as a solitary lesion but multiple or disseminated tumors were also described. Most of the cases presented in the literature were found incidentally and patients remained asymptomatic.

We report a case of 29-year-old male patient suffering from sarcoidosis whose chest CT scans revealed two non progressive soft tissue lesions of left sided pleura.

Macroscopically tumors measured 5.8 cm × 3.4 cm × 2 cm and 1 cm × 0.4 cm × 0.2 cm. Both lesions were well circumscribed, firm and smooth on the cut surface. Histopathological examination showed hyalinized collagenous lesion with a few spindle cells, scattered lymphoplasmacytic infiltrate, multiple calcifications and psammoma bodies. Immunohistochemistry (IHC) revealed spindle cells positivity for vimentin and partially for smooth muscle actin. Reaction for desmin, S-100 protein, CD68, CD34 and anaplastic lymphoma kinase was negative. The diagnosis of CFT was made. Differential diagnosis included pleural plaques, old empyema, calcified granuloma, mesothelioma, inflammatory myofibroblastic tumor, solitary fibrous tumor and fibromatosis.

Total excision of the pleural lesions and further follow up is considered to be a sufficient treatment. In small number of described cases coexistence between CFTs and previous trauma or chronic inflammatory processes were reported, but its etiology and histogenesis remains unclear.

We did not find any other case of calcifying fibrous tumor of the pleura coexisting with sarcoidosis.

P10

Comparison of the expression of glucose transporters in brain metastases and gliomas

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Metabolic switch in cancer is the subject of many studies and a potential therapeutic goal. Many of the malignant neoplasms are able to reprogram their metabolism from oxidative phosphorylation to aerobic glycolysis. The aim of this study was quantitative and qualitative analysis of GLUT1, GLUT3 and GLUT4 expression in primary and metastatic brain tumors. The study included 56 cases of glioblastomas and 18 metastatic adenocarcinomas from the patients aged 27- 84 years. Tissue microarrays were prepared based on representative sections determined on hematoxylin-eosine stained slides. GLUT expression

was assessed immunohistochemically in glioma and metastatic tissue (Abcam antibodies, DAKO system). The topography and intensity of GLUTs tissue reactivity was examined under light microscopy. 92% of glioblastoma cells expressed GLUT 1 and 75% GLUT 3 in membranous and cytoplasmic fashion, with higher membranous reaction in perinecrotic areas. GLUT 1 positive cells were also found around thrombosed blood vessels and in endothelial cells. GLUT 3 expression was observed in endothelial cells in normal vessels and in microvascular proliferations with coexistent abluminal layers staining. Metastatic carcinomas revealed strong membranous expression of GLUT1 and focally GLUT3 with poorly expressed topographical heterogeneity. GLUT4 expression was negative in all cases (cytoplasmic staining). Our results suggest that the characteristic location of the GLUT1 and GLUT3 reactions in glioblastoma is a repeatable feature of these tumors compared to metastatic adenocarcinomas, with hypoxia-dependent topography. GLUT 1 and 3 present diverse distribution within blood vessels, with GLUT3 connection to pathologic angiogenic phenotype, suggesting its involvement in angiogenetic properties of tumors.

P11

The usefulness of Amsterdam Placental Workshop Group Consensus – the analysis based on five years material

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The proper placental examination is of a great value in investigations of adverse pregnancy outcomes including stillbirth. Amsterdam Placental Workshop Group Consensus (2016) is a recently proposed, comprehensive classification system that includes all of the major maternal and fetal vascular, infectious and idiopathic/immune inflammatory processes.

The aim of this study was to determine the frequency and type of histopathologic lesions in placentas examined in years 2014-2018. The main groups were: aborted fetus (< 22 hbd), preterm delivery (22-36 hbd) and birth at term (> 36 hbd).

373 placentas were included in the study. Since 2014 the significant increase in number of examined cases was observed. In 319 cases histopathologic examination determined placental pathology. Results were classified according to Amsterdam Placental Workshop Standards.

The main pathologies observed in the second and third groups were: maternal vascular malperfusions (i.e., retroplacental haemorrhage – 54%, infarcts – 19% in each group) and fetal vascular malperfusions (i.e., thrombosis of villous/umbilical vessels – 24% and 22% respectively, increased coiling index – 39% and 41% respectively). Acute chorionamnionitis was the main pathology in the first group (48%).

138 autopsies of fetuses and neonates were performed at that time. Placental examination was performed in 41 of them. Significant placental pathology was identified in 36 cases.

Placental pathology was identified in most of the examined cases. Implementation of the unified system with reproducible grading and staging should help to establish recommendations for placental submission and facilitate progress in studying the pathogenesis, diagnosis and treatment of obstetric disorders with an underlying placental etiology.

P12

Pathological study of 10 inflammatory myofibroblastic tumors – experience of one center

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Inflammatory myofibroblastic tumor (IMT) is a rare lesion, with the incidence rates ranging from 0.04% to 0.7%, that typically occurs within lungs. It is characterized by proliferation of fibroblastic and myofibroblastic cells associated with inflammatory infiltrate. Some of the cases are being linked to translocations within *ALK1* gene.

We present morphologic and immunophenotypic findings of 10 cases of IMTs diagnosed in the years 2010-2019 in Regional Specialist Hospital in Olsztyn, Poland.

The patients age ranged from 21 to 80 with median of 58. Half of patients were males. Four cases had typical location within lung parenchyma, and the other six were localized in unusual sites including parotid gland, skull, anterior mediastinum, atrium, prostate and epididymis.

The lesions consisted of various proportions of spindle or epithelioid cells with mononuclear inflammatory infiltrate and collagenized stroma. IMTs were classified regarding to three basic histological patterns. The first pattern included lesions with myxoid areas and numerous blood vessels (3 cases), the second pattern included lesions with fascicular spindle cell proliferation (2 cases) and the third pattern was characterized by presence of dense, compact collagen (4 cases). One case was a mixture of all of the mentioned patterns. In 90% cases tumor cells were immunoreactive for smooth muscle actin. Two cases were positive for ALK1 antibody and they were localized within lungs.

Due to its varied morphology IMT should be considered as differential diagnosis in both spindle-cell rich and collagenized tumors with distinct inflammatory infiltrate.

P13

High RhoA expression is an independent marker of favorable prognosis in skin melanoma

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RhoA, a member of GTPase family, controls numerous biological processes e.g. formation of stress fibers, cell contractility and polarity, transcription and cell cycle progression. In a number of cancers RhoA manifests tumor-promoting activity through influence on apoptosis, proliferation, adhesion, invasion and formation of metastasis. Data on the role of RhoA in melanoma are scarce and inconsistent. To address this issue we performed a clinicopathological analysis of RhoA expression.

Immunohistochemical staining for RhoA was analyzed semi-quantitatively in 134 primary skin melanoma tumors. These results were statistically analyzed with other clinicopathological characteristics including patient survival.

Elevated RhoA expression was associated with lower Breslow thickness ($p = 0.028$), higher grade of tumor-infiltrating lymphocytes ($p = 0.006$) and no disease recurrence ($p = 0.002$). Moreover, recurrence-free survival (RFS) ($p < 0.001$) and melanoma-specific survival (MSS) ($p < 0.001$) were considerably longer in cases with high RhoA expression. When adjusted for Breslow thickness and the status of regional lymph nodes, RhoA expression remained an independent prognostic factor for RFS (HR: 0.47; 95% CI: 0.26-0.84; $p = 0.011$) and MSS (HR: 0.35; 95% CI: 0.17-0.71; $p = 0.004$). In conclusion, RhoA expression in skin melanoma is related to features of less aggressive histopathological phenotype and favorable clinical behavior. Further investigations need to clarify mechanisms of probable functional involvement of RhoA in the pathogenesis of melanoma.

P14

Mitotic and proliferation index in lung carcinoids – compatilibity analysis

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Lung carcinoid tumors are neuroendocrine epithelial malignancies. Mitotic index is one of the most important criterium to differentiate typical from atypical carcinoid.

The Ki67 index is not obligatory but it helps to estimate grade of the neoplasm and is widely used.

These two parameters were objects of our evaluation.

Analysis of accordance between different doctors (pathologist and pathologists in training) and correlation between mitotic and proliferation index.

Forty cases of lung carcinoid were examinated by 3 pathologists in training and consultant pathologist.

We counted mitotic figures in area of 2 mm^2 on slides stained with HE and used immunohistochemistry stain for Ki67 (proliferative index). The mitotic index was not always in correlation with proliferation index. There was better concordance in evaluation of proliferation index than in the number of mitosis between different pathologists.

Number of mitosis is under subjective analysis depending on many factors such as the quality of sections cutting, fixation and processing of the biopsies and the experience of the pathologist.

P15

ERG-TMPRSS2 translocations and morphology in prostatic carcinoma

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Prostatic carcinoma is one of the most frequent cancers in men; a significant proportion of cases is due to ERG-TMPRSS2 translocation. The aim of present study was to find a possible relationship between morphology and translocations involving ERG and TMPRSS2 genes.

The material consisted of 148 radical prostatectomy cases. The cases were graded according to the ISUP guidelines and staged by AJCC system. FISH test was performed with ZytoLight ERG/TMPRSS2 kit (ZytoVision) according to the manufacturer's recommendations and read on a fluorescence microscope equipped by appropriate filter set according to the reagents` manufacturer guidelines. This study was supported by a grant from National Science Centre, Poland (no. 2015/19/B/NZ5/00044).

In 82 cases no translocation was detected. In 31 cases ERG-TMPRSS2 fusion was detected. In 10 cases where was an ERG translocation not affecting TMPRSSERG and in 6 cases TMPRSS2 translocation not affecting ERG. In the remaining 19 cases the FISH was not readable. Of the 129 case were FISH was informative Gleason score was 3 + 3 = 6 in 31 cases, 3 + 4 = 7 in 58 cases, 3 + 5 = 8 in 1 cases, 4 + 3 = 7 in 27 cases, 4 + 4 = 8 in 4 cases, 4 + 5 = 9 in 4 cases, 5 + 3 = 8 in 1 cases, 5 + 4 = 9 in 2 cases. Tertiary Gleason pattern was present in 21 cases, and it was pattern 3 in 5 cases, pattern 4 in cases, and pattern 5 in cases. The cancers with any type of ERG or TMPRSS2 translocation tended to show higher grade than the ones with normal FISH status.

P16

Usefulness of the Stocker's classification for the diagnosis of the pulmonary malformation in children

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The purpose of this study was to present cases of CCAM in terms of patohistological features, gender and site distribution as well as to compare the results with Stocker's classification.

A retrospective review was performed on eleven cases of CCAM obtained in four years period (2015-2019) in University Children's Hospital in Krakow, Poland.

The cases for this study were 7 boys and 4 girls (64% vs. 36%), patients age at operation ranged from 4 days to 10 months. 6 cases involved the left lung (55%) whereas the right lung was involved in 5 cases (45%). Histopathological examination showed congenital cystic adenomatoid malformation type I in 7 cases (64%), type II in 3 cases (27%) and type III in 1 case (9%). No congenital cystic adenomatoid malformation type 0 and IV was diagnosed.

Data obtained from this study fell into Stocker's classification proving its usefulness.

P17

The role of PPARγ agonists – rosiglitazone and 15-deoxy-$\Delta^{12,14}$-prostaglandin J2 in experimental cyclosporine A hepatotoxicity

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Cyclosporine A (CsA) is an immunosuppressive drug used in transplantation and treatment of autoimmune diseases. Experimental studies revealed impairments in liver function and morphology among cyclosporine-treated animals.

The aim of the study was to evaluate hepatoprotective activity of PPARγ ligands: rosiglitazone and 15-deoxy-$\Delta^{12,14}$ – prostaglandin J_2 on CsA-induced hepatotoxicity in experimental animals.

Cyclosporine A was administered subcutaneously at a dose of 15mg/kg/day for 28 days. Both PPAR γ agonists were given for 28 days 0,5 hour before the administration of CsA. Rosiglitazone was administered orally at a dose of 8 mg/kg/day and PGDJ2 was given intraperitoneally at a dose of 30 μg/kg/day.

Cyclosporine A induced liver injury was evidenced by increased serum levels of aspartate aminotransferase (AST), alanine aminotransferase (ALT), and bilirubin. Serum concentrations of GSH and GSSG, lipid peroxidation products, NAD+/NADH, NADP+/NADPH and ADP/ATP ratios and caspase 3 activity showed, that CsA induced oxidative stress, evoked an imbalanced red-ox state and apoptosis in the liver. Microscopic examination showed sinusoidal dilatation, mononuclear cell infiltration, necrosis of hepatocytes, intracellular vacuolar degeneration and microvesicular steatosis and apoptopic cells. The biochemical and morphological changes induced by CsA were limited by administration of both PPARγ agonist – rosiglitazone and PGDJ2.

Biochemical and liver histopathological examination indicate that both PPARγ agonists used in the experiment may play an important role in protecting against CsA-induced hepatotoxicity.

P18

Overexpression of TRIP13 predicts poor prognosis in patients with clear cell renal cell carcinoma

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What is the leading molecular mechanism that causes broad resistance to systemic therapies, remains a key question in renal cancer related research. We explored associations of TRIP13 expression with the clinical course using the Cancer Genome Atlas (TCGA), and validated these findings in tissue microarray (TMA).

The TCGA cohort consisted of 528 patients diagnosed with clear cell renal cell carcinoma (ccRCC). The RNA-seq data was mapped using the Ensembl gene id, and the FPKMs (number Fragments Per Kilobase of exon per Million reads) for *TRIP13* were used for quantification of mRNA expression. The TMA contained specimens from 87 ccRCC patients. We used immunohistochemistry to investigate TRIP13 protein expression levels. The overall survival (OS) was analyzed using the Kaplan-Meier method and log-rank statistics. Univariate and multivariate analyses were conducted using Cox proportional hazard models.

Median follow up for TCGA cohort and TMA cohort was 3.28 and 6.3 years, respectively. 20.64% of patients had high TRIP13 expression in TCGA cohort vs. 28.74% in TMA cohort. TRIP13 protein expression did not significantly correlate with stage nor tumor grade ($p > 0.05$), and there was no statistical difference between its levels within the cytoplasm of ccRCC cells and corresponding normal cells. Elevated TRIP13 expression served as an independent unfavorable prognostic indicator of survival in ccRCC both on mRNA ($p = 3.4e\text{-}11$) and protein ($p = 5.2e\text{-}3$) levels.

TRIP13 overexpression predicts poor prognosis in ccRCC. Together with the emerging reports, this observation raises a suspicion that TRIP13 is a substantial driver of resistance to systemic therapies against kidney cancer.

P19

Detection of ADAMTS20, NF1, PKHD1 and MTRR mutations with appliance of next generation sequencing (NGS) in dermal fibrosarcoma arising in dermatofibrosarcoma protuberans of 64-year-old male patient

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We examined a status of fibrosarcoma arising in dermatofibrosarcoma protuberans of 64-year-old male patient. A dermal, solid, grayish-yellow, desmin-negative trichrome-bluish tumor measured 1.5 cm in diameter pT1a (edition 8 pTNM). It was was composed of spindle cells. It was consistent with dermatofibrosarcoma protuberans (ICD-O3: 8832/3) in areas of low mitotic activity, low atypia and sustained CD34 positivity. CD34-negative texture with high mitotic index and atypia was consistent with to high grade sarcoma apparently of fibrous origin, given category fibrosarcoma. The high grade component was graded (G3) and scored according to French Federation of Cancer Centers Sarcoma Group (FNCLCC): total score of 6 points: tumor differentiation: 3 points + Mitotic count: 3 points (up to 26 mitoses/ 10HPF in high-grade fields), + no necrosis: 0 points. In low grade sarcomatous component ADAMTS20 (NM_025003: c.1661C>T, p.P554L) NF1 (NM_001042492: c. 2173G>T, p.E725X) and PKHD1 (NM_138694: c. 11074C>T, p.R3692X) were revealed with following allelic frequencies: 25%,27%, 17% and 44%. In high grade component allelic frequencies of the same mentioned mutations were 30%, 30%, 14% and 51% respectively. In the light of our findings, none of detected mutations can be regarded as a mutation that would definitely induce phenotype of high malignancy, because ADAMTS20, NF1 and PKHD1 mutations were detected both in high grade sarcoma and in low grade areas of dermatofibrosarcoma protuberans. It also points that these mutations appeared on early stages of tumor development.

P20

First steps of employing ATR FTIR method to detect bladder cancer from urine sediment samples from patients assigned to cancerous and normal cytological groups

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The bladder urothelial cancer incidence is the 11th most common malignancies in the world in both sexes. Currently bladder cancer diagnosis is based on urine cytology, molecular and radiological imaging methods, but to put a recognition and start treatment the "gold standard" – histological examination of bladder biopsy has to be done. Morphological changes are not always unequivocal. Due to many difficulties in assigning morphological features, sensitivity of urine cytology is only ca. 30 and 70% for low- and high-grade tumours, respectively. Therefore, the need for new detection technologies has still arisen. One of alternatives is the application of spectroscopic tools like Fourier-Transform Infrared spectroscopy (FTIR) offering label-free detection of cancer in urine sediment of patients. Their classification is based on standard cytology that stratified samples into normal, suspicious and cancerous. Abnormal cells come from patient with inflammatory changes or with atypical cells in cytology. The abnormal cells are the most difficult to assess and often detailed medical data is needed. The medical history of bladder cancer divides cases into low and high risk. Attenuated Total Reflectance (ATR) FTIR spectra of urine sediment reveal a good discrimination of the norm and cancer groups, in particular for the high risk patients. IR bands at 1020, 1050, 1080, and 1236 cm^{-1} assigned to glycogen, sugars and DNA are potential candidates for FTIR carcinoma markers. Although, high individual variation of urine biocomponents, the 3D Principal Component Analysis (PCA) is able to label-free detect cancerous samples.

MK thanks the InterDokMed project (no. POWR.03.02.00-00-I013/16) for financial support.

P21

Mutational screening of the Hh pathway-related genes in pediatric germ cell tumors

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Germ cell tumours (GCT) are a heterogenous group of tumors arising from germ cells on different phases of their differentiation and maturation. Little is known regarding the pathogenesis of these tumors, however recent data point towards the putative role of (dysregulated) Hedgehog (Hh) signaling among the triggering factors of their growth.

To assess potential DNA alterations of the Hh pathway in GCTs, we sequenced 25 Hh-related genes in a set of 27 tumors.

Next generation sequencing of FFPE samples was performed using an UMI-based QIAseq Targeted DNA Custom Panel (Qiagen) genes on Illumina NextSeq Platform. Variant calling was performed using CLC Genomic Workbench (Qiagen).

All samples passed QC checkpoints with the median reads of 11 mln, median coverage of 831 and 97.8% covered regions. None of the canonical Hh-related genes was found to have a Tier1/2 variant, however a number of variants of unknown significance have been identified. These include a novel germline *GLI2* c.4332_4333delinsAT variant affecting the residue previously associated with Holoprosencephaly9 syndrome detected in a yolk sac tumor located in testis of a 2 year or a germline *SMO* c.2011C>T substitution in the COS2-binding region overlapping with the cluster of PKA/CK1 phosphorylation sites.

Most of the detected variants were germline what might point towards their role of (dys)regulators of the Hh-network and hence risk factors for GCT development. Studies on larger cohorts are needed to verify their prevalence among GCT patients.

This research was funded by Polish National Science Centre grant number: 2014/15/B/NZ4/04855.

P22

Are ER(–)/PgR(+) breast cancers real? Histopathological and immunohistochemical analysis of cases from 9 centers

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Steroid hormone receptors are important prognostic markers in breast cancer. Progesterone receptor (PgR) expression is induced by estrogen receptor α (ER) in breast cancer cells, thus the existence of ER(–)/PgR(+) tumors is doubted and considered artifactual. The aim of the current study was to reevaluate ER(-)/PgR(+) breast cancer cases collected from 9 Polish oncology centers and to establish if the use of various anti-ER antibody clones influences diagnosis.

Immunohistochemical and HE slides from 80 cases of ER(–)/PgR(+) tumors were reevaluated by three pathologists. The cases without tissue samples prior to systemic therapy and primarily misdiagnosed cases were excluded (n = 21; 26.25%). Then, 59 cases were stained with antibodies against ER (clones 1D5 and SP1) and PgR (clone 636).

ER(–)/PgR(+) phenotype was confirmed in 32 cases (40%). The diagnosis was changed to ER(+) in 15 cases (18.75%), and to PgR(–) in 11 cases (13.75%). SP1 clone was more sensitive than 1D5 in detecting ER(+) cases ($p < 0.0001$, χ^2 test; κ Cohen coefficient = 0.53. Confirmed ER(–)/PgR(+) tumors showed three morphologic patterns: high-grade invasive carcinoma of no special type, apocrine-like, and carcinoma with the central acellular zone. They demonstrated higher Ki67 expression than other types of breast cancer ($p < 0.001$, Kruskal-Wallis ANOVA). In survival analysis, their clinical course was similar to ER(–)/PgR(–) cases.

The diagnosis of ER(–)/PgR(+) breast cancer requires caution and preferentially double-check with the use of alternative anti-ER antibody clone and another FFPE tissue block. Real ER(–)/PgR(+) cancers

show distinct clinicopathological features with high-grade morphology, high Ki67, and survival pattern resembling double-negative breast cancer.

P23

Cardiac amyloidosis: the clinical and pathomorphological changes of two cases of cardiac lesion in primary AL-amyloidosis

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Cardiac amyloidosis, once thought to be a rare disease, is increasingly recognized due to enhanced clinical awareness and better diagnostic imaging. The purpose of the study was to determine the clinical and pathomorphological analysis of cases of primary AL-amyloidosis with the involvement of the heart.

We have analyzed the clinical and pathomorphological changes of two cases of cardiac lesion in primary AL-amyloidosis.

In both cases AL-amyloidosis has been diagnosed with post-mortem examination. Clinical diagnosis demonstrates hypertrophic cardiomyopathy with heart failure. In both cases, the cause of death of the patients was acute kidney damage. In post-mortem examination, cardiomegaly was observed. The myocardium is dense, reddish-brown with thin mesh grayish veins, is severely cut, similar in density to rubber. At histological examination cardiomyocytes with atrophy, hydropic dystrophy, focal myocytolysis. Subendocardially, in the walls of small intramural arteries, interstitium, surrounding the myocytes, there were observed diffuse and focal accumulation of amorphous homogeneous, weakly-basophilic masses. Similar masses are found in the parenchyma of the spleen, of the glomeruli and the small caliber arteries of the kidneys, along the sinusoids of the liver, pancreatic stroma. Coloring of these masses for the Congo red gave a positive result.

In both cases cardiac disturbances in clinical picture of the disease and determined its prognosis. Clues to the diagnosis include ventricular "hypertrophy" seen on echocardiography with inappropriately low electrical voltages on ECG. The diagnosis of amyloidosis requires a biopsy of the tissue, indicating a positive coloration of the Congo red.

P24

Pathological deformations of internal carotid artery: pathomorphological and biomechanical models

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Pathological deformations of internal carotid artery (PD ICA) are factors leading to acute cerebrovascular accident. There are data about reversions and progressions of deformations. The aim of our research is to assessment pathomorphological and biomechanical changes in PD ICA.

There were 377 clinical cases of patients operated on carotid stenosis. Following methods have been used: histological investigation; immunohistochemical method with monoclonal antibodies (RAH C11-0.1, RAH C33, CIV 22, TIMP-1, MMP-9); biomechanical modeling of carotid arteries (ANSYS, Workbench, SolidWorks 2008), statistic assessment of received data (MS Exel 2003, Statistica 7, IBM SPSS Statistics 19).

Pathomorphological changes: connective-tissue deformation of the artery wall at the corner and proximal part of inflection; smooth muscles atrophy – distal part. Immunohistochemical analysis showed high expression of collagen types I and III in the middle and external layers, collagen type IV in the middle layer of the artery wall. Biomechanical models of PD ICA with different angles of inflection (30, 60, 90, 130) were developed using clinical data and vessel molds. As a result, the most dangerous deformations are angles 30 and 60, because of them influence on gradient of pressure into the artery wall.

The phenomenon of evolution of PD ICA is revealed: the increase of the pressure gradient and the appearance of high tensile areas lead to the fact that the bending angle becomes sharper and the deformation are more pronounced. This indicates the hemodynamic "instability" of the bend and its ability to progress.

P25

Microenvironment and androgen receptor in triple negative breast cancer (TNBC)

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Triple negative breast cancer (TNBC) is typically associated with poor prognosis. More effective therapeutic strategies are needed. There are two particularly interesting areas of exploration of TNBC: the presence of the androgen receptor in cancer cells as well as elements of the tumor microenvironment. The aim of the study was to determine the presence of CD4 +, CD8+, CD68+, CD163+, CD19+, CD138+, CD56+, FoxP3 + cells in the TNBC microenvironment, presence of the androgen receptor in cancer cells and determination of the relationship between these elements and histopathological features of the tumor.

We selected 315 TNBC cases. A tissue microarray (TMA) was constructed and then the immunohistochemical reactions were performed.

The androgen receptor was present in the tumor cell nuclei in 22.8% of cases and we proved the relation between the cancer's NHG degree and the presence of this receptor. The relation between the androgen receptor and the presence of CD163 + cells in the microenvironment was also confirmed as well were the relations between some elements of the microenvironment (mainly CD163 + cells) and the NHG, pT and pN of TNBC.

Confirmation of the relation between the evaluation markers and tumor features suggest that these parameters might be a good potential footholds in the planning of new therapies. We suppose that CD163 cells in the TNBC microenvironment could be used as predicting factor in new potential therapies in TNBC.

P26

Calcified amorphous tumor of the heart as an unexpected autopsy finding

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Calcified amorphous tumor of the heart (cardiac CAT) is an extremely rare non-neoplastic cardiac mass, originally described in 1997. Up to now only several cases were reported in the literature. The patients usually complain of the symptoms related to obstruction or embolization such as dyspnea and syncope. Accurate diagnosis of a cardiac mass is often made on surgical excision and histopathological examination.

We report a case of 75-year-old female, who was admitted to Emergency Department in Regional Specialist Hospital in Olsztyn due to loss of consciousness. The diagnosis of sudden cardiac arrest caused by ventricular fibrillation with myocardial infarction was made. Urgent coronary angiography demonstrated critical proximal LAD artery stenosis and the percutaneous coronary intervention with revascularization of the LAD was performed. After the procedure, parameters of multiple organ failure were increasing continuously and after 12 hours after admission the patient died. The autopsy was performed.

In postmortem examination, generalized atherosclerosis and early myocardial infarction of the anterior wall of the left ventricle was confirmed. Surprisingly, macroscopic examination of the heart revealed a calcified, yellowish tumor measuring 5x2x2 cm, attached to the muscle of the lateral wall of left ventricle. Microscopically, the cardiac mass showed nodular calcified amorphous debris with admixed degenerated fibrin and focal chronic inflammation. No pleomorphism or mitoses were seen. The diagnosis of CAT was established.

Cardiac CAT is a rare entity of uncertain etiology usually diagnosed as cardiac mass in symptomatic patients. To our knowledge it is a first report of incidental finding during autopsy.

P27

Correlation between insulin receptor substrate type 1 (IRS-1), erythropoietin (EPO) and erythropoietin receptor (EPOR) with regard to its clinicopathological variables in primary colorectal cancer

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Despite the great improving made in colorectal cancer therapy, the quest for molecular prognostic factors or therapeutic targets is still main objective for a large number of scientist. Erythropoietin effectively prevents anemia and for this reason, patients undergoing chemotherapy or radiation therapy due to colorectal cancer have also been treated with recombinant human erythropoietin. However, EPO seems to promote survival of the malignant cells. Since ability of IRS-1 to coordinate multiple signals that may be critical during carcinogenesis, it was of interest to investigate expression of IRS-1, EPO, EPOR and assess correlation between them, with regard to clinicopathological variables of colorectal cancer.

The expression of tested proteins was evaluated in primary colorectal cancers using the immunohistochemical method. Statistical analyses were performed by using the Spearman rank correlation test ($p < 0.05$).

Our results show a statistically significant positive correlation between IRS-1 and EPO expression in all researched groups except case of: adenocarcinoma with mucosal component, poor differentiated tumor (G3) and pT1+pT2 stage of tumor. Positive association between IRS-1 and EPOR expression occurred in all groups of patients except case of: adenocarcinoma with mucosal component and case of poor differentiated tumors (G3).

Overall, our results demonstrate that the expression of IRS-1 in colorectal cancer correlates with expression of EPO system. This leads to conclusion that modulation of IRS-1 action may be a potential new therapeutic strategy.

P28

Comparison of expression insulin receptor substrate type 1 (IRS-1), leptin (Ob) and leptin receptor (ObR) in primary colorectal cancer

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Obesity is a significant risk factor for several types of cancer, including colorectal cancer. The incidence of colorectal cancer has continued to trend upwards in recent years because of rising levels of obesity worldwide. Leptin is main adipocyte-secreted protein and levels are raised in obese individuals. Studies in cellular models suggested involvement of leptin in colorectal carcinogenesis. IRS-1 is a signaling intermediates of the insulin and insulin-like growth factor receptor, but this is important to mention the fact that IRS-1 action is not limited to binding to receptors with tyrosine kinase activity. Previous researches shown that IRS-1 can be activated in leptin-signaling pathway. For this study, it was of interest to investigate expression of IRS-1, Ob, ObR in colorectal cancer and assess correlation between them.

The excision specimens were collected from 150 patients undergoing surgery for primary colorectal cancer. Immunohistochemical method was used to assess studied proteins. Statistical analyses were performed by using the Spearman rank correlation test applying a significance level of $p<0,05$.

Positive correlation between IRS-1 and Ob was found in all group of patients except case of: adenocarcinoma with mucosal component, poor differentiated tumor (G3), pT1+pT2 stage of tumor, while correlation between IRS-1 and ObR was absent in only two groups: adenocarcinoma with mucosal component, pT1+pT2 stage of tumor.

Summarize, expression of IRS-1 strong correlates with expression of Ob and its receptor in colorectal cancer. Looking forward, further attempts could prove quite beneficial to the therapeutic strategy in colorectal cancer treatment.

P29

Correlation between insulin receptor substrate type 1 (IRS-1), proapoptotic Bax, antiapoptotic Bcl-xL in primary colorectal cancer

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Based on GLOBOCAN 2018 data CRC is the third most common cancer diagnosed globally. Most of the research in this field is aimed at finding new prognostic factors or therapeutic strategy in order to reduce high colorectal cancer-related mortality. Cause IRS-1 has ability to interact with multiple intracellular proteins and modulate signal to proliferation and survival, two elements relevant during cell transformation, for this study, it was of interest to evaluate expression of IRS-1, Bax, Bcl-xL in colorectal cancer and assess correlation between them.

Expression of tested proteins was analyzed in tissue samples obtained from 150 patients diagnosed with colorectal cancer. In order to assess the correlation, Spearman rank correlation test was applied ($p < 0.005$).

Our results demonstrate that correlation between IRS-1 and Bax is statistically significant in all groups exclude case of: adenocarcinoma with mucosal component (AM), poor differentiated tumor (G3) and pT1+pT2 stage. The positive correlation occurred between IRS-1 and Bcl-xL in all cases except following groups of patients: tumor with primary localization in rectum, adenocarcinoma with mucosal component, poor differentiated tumor.

In light of this data, IRS-1 seems to be positive correlated with proapoptotic as well as antiapoptotic proteins. Future investigations are necessary to validate the kinds of conclusions that can be drawn from this study.

Overall, our results demonstrate that the expression of IRS-1 in colorectal cancer correlates with expression of EPO system. This leads to conclusion that modulation of IRS-1 action may be a potential new therapeutic strategy.

P30

Ultrastructure of synaptic endings in the hippocampal CA1 and CA3 sectors in the rat experimental model of febrile seizures and with the use of topiramate

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The study aimed at exploring a potentially neuroprotective effect of topiramate (TPM), one of the most commonly used newer-generation, broad spectrum, antiepileptic drugs against ultrastructural damage of hippocampal synaptic endings in the experimental model of febrile seizures (FS).

The study used male young Wistar rats aged 22-30 days , divided into three experimental groups and control group. Hyperthermic stress was evoked by placing animals in a 45°C water bath for four consecutive days. Brain maturity in such animals corresponds to that of 1- or 2-year-old children TPM at a dose of 80 mg/kg b.m. was administered with an intragastric tube before and immediately after FS. Specimens (1 mm^3) collected from the hippocampal CA1 and CA3 sectors, fixed *via* transcardial perfusion with a solution of paraformaldehyde and glutaraldehyde, were routinely processed for transmission-electron microscopic analysis.

Advanced ultrastructural changes induced by hyperthermic stress were manifested by distinct swelling of hippocampal pre- and post-synaptic axodendritic and axospinal endings, including their disintegration. The axoplasm of presynaptic boutons contained a markedly decreased number of synaptic vesicles and their abnormal accumulation. The synaptic junctions showed a dilated synaptic cleft and decreased synaptic active zone. TPM used directly after FS was ineffective in the prevention of hyperthermia induced injury of synaptic endings in hippocampal CA1 and CA3 sectors. However, TPM administrated prior to FS induction demonstrated a neuroprotective effect against synaptic damage in approximately 25% of synaptic endings in the hippocampal sectors, more frequently located in perivascular zones. It was manifested by smaller edema of both presynaptic and postsynaptic parts, containing well preserved mitochondria, increased number and regular distribution of synaptic vesicles within the axoplasm, and increased synaptic active zone.

Our current and previous findings suggest that TPM administered "prophylactically", before FS, could exert a favorable effect on some synapses, mainly indirectly, *via* the vascular factor, i.e. protecting blood-brain barrier components and through better blood supply of hippocampal CA1 and CA3 sectors.

P31

Cytoprotective role of vitamine E in adipose-derived stem cells against hydrogen- peroxide- induced oxidative stress

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Nonalcoholic fatty liver disease (NAFLD) is one of the major causes of chronic liver injury affecting the general health of various populations. The underlying pathogenesis of NAFLD remains to be fully elucidated, however, the pathological changes may be explained by the 'twohit hypothesis'. The 'first hit'' consists of the accumulation of hepatic lipids, which is predominantly associated with insulin resistance, while the 'second hit' consists of oxidative stress, mitochondrial dysfunction and inflammation.

Adipose-derived stem cells (ADSC) possess the ability to differentiate into various mesodermal lineages. Furthermore, ADSC have a high proliferative capacity, secrete various proteins and have immunomodulatory effects. Therefore, ADSCs have gained considerable attention in the field of regenerative medicine to repair various damaged tissues.

The exposure to reactive oxygen species (ROS) results in apoptosis and release of inflammatory mediators. Therefore the survival of ADSC against oxidative stress and inflammation is vital for effective stem cell therapy.

In the present study, ADSC were isolated from the mouse adipose tissue. We aimed at evaluating the effect of vitamin E treatment on ADSC against H_2O_2- induced oxidative stress. The oxidative stress was induced by treating ADSC with 500, 1000, 1500 μM H_2O_2 with or without vitamin E.

We observed that the viability of ADSC is enhanced after vitamin E treatment under H_2O_2-induced oxidative stress We observed that the viability of ADSC is enhanced after vitamin E treatment under H_2O_2-induced oxidative stress. The findings of this study may help in developing effective stem cell therapy for the diseases characterized by the oxidative stress and inflammation such as NAFLD.

P32

The *IDH1* and *IDH2* mutations in patients with glioma

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Mutations isocitrate dehydrogenase 1 (*IDH1)* and isocitrate dehydrogenase 2 (*IDH2*) are frequently detected in glioma. The new classification of CNS tumors was included *IDH* mutations on final diagnosis. Gliomas with *IDH1* or *IDH2* mutations have improved prognosis compared to gliomas *wild-type IDH. IDH* mutations are significant markers of positive chemosensitivity, correlate with a better response to temozolomide and longer survival.

Tumor samples were obtained from 1000 patients with brain gliomas (449 women and 551 men) at the age: 18-71 years, from Department of Neurosurgery, 10th Military Research Hospital and Polyclinic in Bydgoszcz. Tumor samples were formalin-fixed, paraffin-embedded (FFPE) then diagnosed and graded according to the WHO classification of tumors of the central nervous system 2016.

Genomic DNA was extracted from FFPE tumor samples with Maxwell 16 FEPR Plus LEV DNA Purification Kit and Maxwell 16 MDx Instrument.

The MLPA method (Multiplex Ligation-dependent Probe Amplification) was carried out using SALSA MLPA kit P088 to detect *IDH1* (*R132H/R132C*) and *IDH2* (*R172K/R172M*) mutations. Statistics analysis were performed with chi-squared test.

Among 1000 patients with gliomas in our group, 259 (26%) patients with low-grade glioma (WHO grade II), 285 (29%) patients with high-grade glioma (WHO grade III) and 456 (45%) with Glioblastoma (WHO grade IV) were graded.

IDH1 and *IDH2* mutations were observed in 375 cases (37,5%) and *IDH1/2 wild-type* were observed in 625 (62,5%) cases.

Mutation *IDH1 (R132H)* was observed in 352 patients (94%), *IDH1 (R132C)* in 10 patients (2,5%), *IDH2 (R172K)* in 11 patients (3%) and *IDH2 (R172M)* in 2 patients (0,5%).

P33

Human papillomavirus high-risk infection in women in Wroclaw, Poland

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Human papilloma virus (HPV) cause nearly 100% of high-grade cervical dysplasia and cervical cancer. To date, approximately 200 types of HPV have been identified and at least 14 has been classified as oncogenic (HPV- HR, HPV high-risk). Among them, types 16 and 18 have the highest oncogenic potential. Over half of sexually active women are exposed to HPV.

In 2018, Cellgen Laboratory performed screening diagnostic tests as a part of a social campaign "Wyzwanie100" ("Challenge100"). The aim was to examine women from Wroclaw and its environs for HR-HPV infection. Material for the test were cervical swabs, obtained by self-sampling device Evalyn Brush (Rovers). The campaign involved 726 voluntarily applying women aged 25-60 years. Cervical specimens were tested by real-time PCR, using AmpliSens® HPV HCR-screen-titre-FRT PCR kit, which detects 14 HPV- HR types (16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68) with genotyping 16, 18 and 45.

HPV- HR infection prevalence was 17% in the examined population, notably among women aged 25-30 years (23%). The frequency of HPV types was as follows: HPV16 – 2.34%, HPV18 – 1.65% and HPV45 – 1.79%.

The results showed that the frequency of high-risk HPV infection among participants of Wyzwanie100 does not differ from published research results for the Polish and European populations.

P34

Pulmonary alveolar proteinosis in a 29 years old male

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Presenting author: Olena Mazur

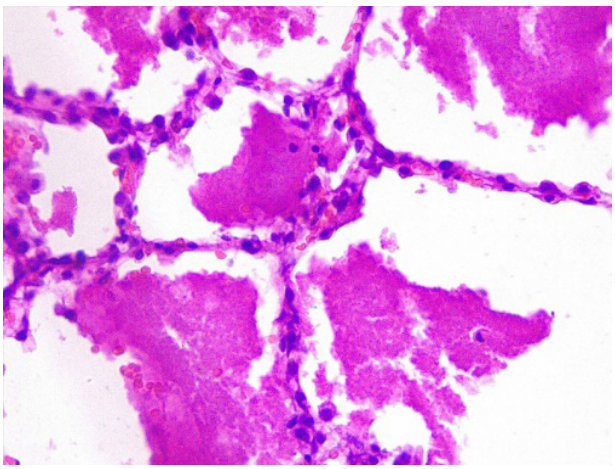
Pulmonary alveolar proteinosis (PAP) is a rare syndrome comprising a heterogeneous group of diseases characterized by the accumulation of pulmonary surfactant (lipoproteinaceous material) in alveolar macrophages and the alveolar space.

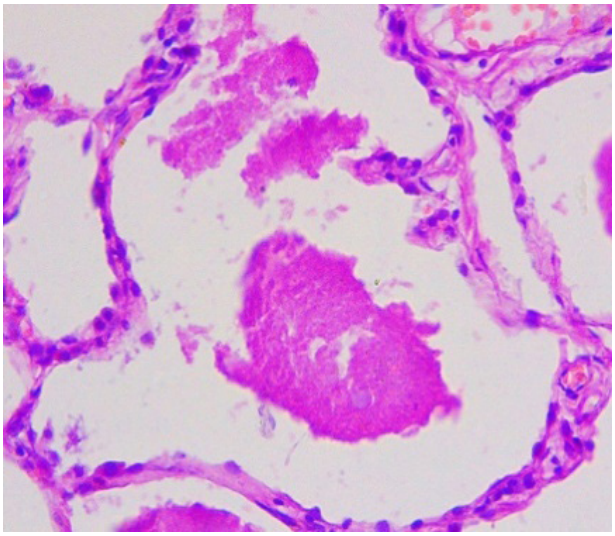
The prevalence of pulmonary alveolar proteinosis has been estimated at the level of 0.37 cases per 100,000 persons. The median age at the time of diagnosis is 39 years; most patients are men, and 72% have history of smoking. The male predominance may be explained by the more frequent tobacco use.

In the described morphologically confirmed case of alveolar proteinosis, a male aged of 29 years (tobacco smoker, who had no other chronic diseases or contacts with possibly inhaled chemicals) during the last 6 months complained about shortness of breath, cough with sputum discharge, constant hyperthermia, which varied within 37-37.2°C and slight discomfort in the chest while breathing.

Due to the complications which occurred after the primary diagnosis verification, a biopsy of the lung tissue was performed.

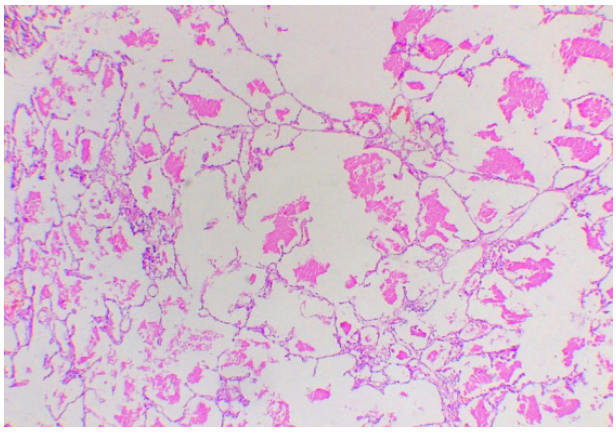
Morphologically a great amount of dilated alveoli clusters containing homogeneous eosinophilic material (acellular surfactant) were discovered.



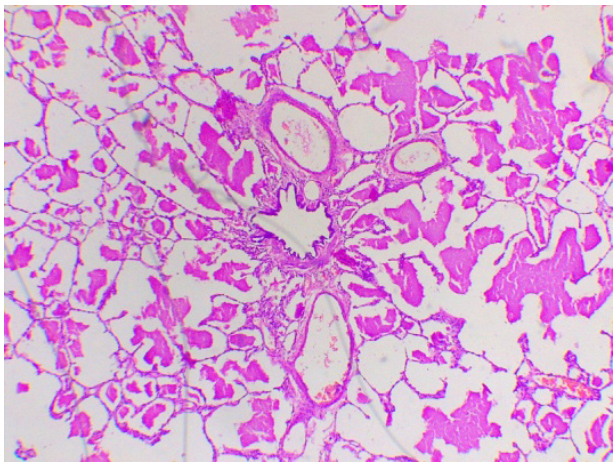


Interalaveolar septa were thinned, there were no pathological changes identified in their cellular composition and structure.

The surrounding pulmonary tissue consisted of emphysematous alveoli. Their lumen was overaired.



Bronchial system: the prismatic epithelium was monomorphic; the walls of the bronchi were thickened due to diffuse sclerosis, with a slight lymphocytic infiltrate.



As we can see, this syndrome has many "clinical masks" which cause problems with diagnosis verification and treatment, so it definitely deserves further study.

P35

The unique collection of tumors and other eye diseases in the museum of Human diseases, Danylo Halytsky Lviv National Medical University

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Presenting author: Olena Mazur

The Museum of Human Diseases is an important part in the modern educational and scientific process of the Danylo Halytsky Lviv National Medical University since 1896. It was founded by Andrzej Obrzut, the first head of the pathology department at the Lviv Medical University. Owing to his devoted work, the museum was formed, as well as the archive of autopsy cases (which currently includes more than 90 thousand copies, and on top of it - numerous histological techniques and staining methods were introduced into practice.

The Museum is scrupulously organized: the stands, located in individual cabinets, are clearly divided according to the organ systems, exhibits are stored in the Kaiserling's solution, Tisenhausen solution and formalin.

A completely exclusive series of tumors and other eye diseases deserves a great attention: it includes 55 unique exhibits.

In general, they can be divided into four groups:
- inflammatory diseases of the eye (chronic purulent inflammation, chronic iridocyclitis, chronic productive perineuritis, etc.);
- consequences of the transmitted diseases (eye atrophy, formed cysts of multiple localizations, corneal staphyloma, etc.);
- eye tumors (melanoma, sarcoma, glioma, osteoma, squamous cell carcinoma of the cornea, etc.);
- eye traumas (retinal detachment, external body of the eye, traumatic iridocyclitis, etc.).

This impressive collection and archive of autopsy cases of the Museum of Human Diseases of the Danylo Halytsky Lviv National Medical University are included in the State Register of scientific objects that belong to national heritage.

P36

Diastrophic dysplasia – from 1st trimester ultrasonographic prenatal diagnostics to perinatal pathologist report with post mortem imaging – a case report

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Diastrophic dysplasia is a skeletal dysplasia that occurs in 1/500,000 pregnancies. It is characterized by significant shortening of all long bones with preserved normal neurodevelopment.

35-years-old woman came for prenatal diagnostics in 12 6/7. Sono-examination revealed NT = 1.2 mm and normal additional markers. cff-DNA examination was carried out at patient's request (negative result). Check-up sono-examination was recommended due to abnormally bent, moveless, shortened limbs.

In 15 5/7 following abnormalities were confirmed: extreme bilateral long bones shortening, abnormally bent limbs, moveless. Additionally, hitchhikers thumbs, clubfeet with deviated toe and micrognathia were revealed. Clinical suspicion of diastrophic dysplasia was placed. Patient was referred for a genetic consultation followed by amniocentesis in 16 6/7 (in cytogenetics – normal male karyotype). Molecular test confirmed an initial diagnosis.

Parents made a decision about termination of pregnancy. Fetus and placenta were referred to a perinatal pathologist. Extreme symmetrical limbs shortening was confirmed in post-mortem babygram. Clubfeet was diagnosed in macroscopic exam with following bilateral features: toe deviation, hypoplasia of 1st metacarpal bone. Additionally to prenatal sono-exam macrocephaly, extreme micrognathia, cleft soft and hard palate, left radial campomelia were diagnosed. Decreased amount of extracellular substance with secondary mucinous transformation and minor cystic changes without accompanying disorders of growth plates architecture was diagnosed in microscopic examination of long bones, lumbar spine and ribs II-V, what was consistent with diastrophic dysplasia.

Standardized 1st-trimester sono-examination remains an integral part of a modern prenatal diagnostics, fundamental in detecting of structural defects. Perinatal pathologist's examination objectifies and expands ultrasonographic diagnostics of structural disorders.

P37

Abnormal cytology results and high-risk HPV status among sexually active women over the age of 30 from an urban area in Poland – prevalence, genotypes and phenotypes

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The aim of our retrospective study was to determine a prevalence and a distribution of a high-risk human papillomavirus (HRHPV) among sexually active women ≥30 with abnormal cytology results in an urban area in Poland.

A study group was selected among 12850 sexually active women who were attending an office-based opportunistic cervical cancer screening, outside the public health system in Wroclaw between August 2015 and January 2019. Endocervical samples for HRHPV detection were collected together with material for liquid-based cytology in all patients. A real-time PCR for genotyping HPV types 16 and 18 and

phenotyping 12 non-16 and non-18 types was used. All cytology samples were processed using an automated laboratory preparation.

Of the 470 women with abnormal cytology, 276 were infected with at least one HRHPV genotype.

The mean age in group was 44,2. The prevalence of HRHPV infection among these women was 58,7%. Data for each cytology result are given in the following order: % of all cytology results/% of HRHPV-positive cases/% of types 16 or (and) 18+/% of types non-16 & non-18-positive for ASC-US: 6,5/47,9/40,7/59,3; LSIL: 3,3/75,7/32,1/67,9; HSIL: 0,5/86,4/84,2/15,8; ASC-H 0,4/88,2/53,3/46,7 and AGC-NOS: 0,2/14,3/100,0/0,0 were detected. The most frequent were 12 non-16/non-18 HPV types (58,7%).

Types non-16/non-18 are the most common HRHPV phenotypes in the group of Polish women ≥ 30 from an urban area with abnormal cytology results. A larger study with a more representative sample would be needed to determine predominant oncogenic genotypes in described sub-region and especially in cancer cases in this age group.

P38

Malignant phyllodes tumor of the breast cum CDIS

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Malignant Phyllodes tumor is a rare case and develops in older women. It is necessary to differentiate with metaplastic carcinoma. Immunochemistry help us to make a good recognition.

The aim of this case report is to highlight characteristic details to a make good diagnosis of malignant phyllodes tumor and differentiate from metaplastic carcinoma.

A 50-years-old woman was operated due to 3.0 cm tumor of the breast. Grossly well defined, grey tumor with negative margins was revealed. HE examination showed a lot of pleomorphic cells, a little necrosis and many unregular mitotic figures. Between such pictures the structures of DCIS NG1 were also present. The question was: is it a malignant phyllodes tumor with CDIS or metaplastic carcinoma? Many of immunohistochemical reactions were done.

The final diagnosis was – pleomorphic sarcoma with CDIS low grade. Two years later a small lump developed in the same breast. Histologically it had only a pattern of pleomorphic sarcoma identical to the primary tumor. The component of DCIS was absent. It confirmed our diagnosis of malignant phyllodes tumor.

This rare case shows us the possibility of coexistence of the malignant transformations of two components in phyllodes tumor. It is important to make a good recognition because of further treatment. The diagnosis of metaplastic carcinoma implicates more aggressive treatment – chemotherapy. After diagnosis of malignant phyllodes tumor with CDIS excised within healthy limits only observation until recurrence is recommended.

P39

Chest wall tumors – two-year experience at the hospital for lung diseases and a brief literature review

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Chest wall tumors are a diverse group of lesions representing virtually all lineages of differentiation. The most common tumors of the chest wall are metastatic malignant tumors and direct extension of the malignant pulmonary and mesothelial tumors. Primary chest wall tumors, benign or malignant are less common. We reviewed our two-year experience at the busy pulmonary and chest surgery institution in Szczecin, Poland, and presented the tumors according to practical issues encountered in the differential diagnosis. Most important entities and problems considered in the differential diagnosis were: Metastatic RCC vs. Paraganglioma vs. ASPS, Fibromatosis vs. DFSP, Elastofibroma vs. Spindle cell lipoma, Chondrosarcoma vs. Osteochondroma, Lymphoma vs. Ewing Sarcoma, Synovial Sarcoma vs. benign spindle cell proliferation and SFT vs. Schwannoma vs. MPNST. Differential diagnosis of chest wall lesions includes both benign and malignant neoplasms; however, most of the infiltrative growths of the chest wall should be considered malignant or borderline unless proven otherwise. Clinical information available for the pathologist usually is limited. Multidisciplinary Team Meeting (MDT) would explain many

problems in the differential diagnosis, but it is not a part of diagnostic procedures in our institution and a seldom practice in Poland.

P40

Morfologia i powstawanie jamy pourazowej po doświadczalnym uszkodzeniu rdzenia kręgowego u szczura

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Uszkodzenie rdzenia kręgowego to częsta przyczyna niepełnosprawności u osób młodych. Najczęściej jest wynikiem urazu. Obecnie badane metody farmakoterapii wykorzystują efekt przeciwobrzękowy lub przeciwzapalny, jednak patomechanizm odpowiedzi tkanki nerwowej na uszkodzenie jest wciąż niejasny, stąd nadal nie opracowano skutecznej metody leczenia.

Celem pracy jest ocena morfologii ogniska uszkodzenia u szczura w czasie od 1. do 112. doby po doświadczalnym uszkodzeni rdzenia kręgowego oraz zbadanie metodą ELISA poziomu wybranych białek mieliny w płynie mózgowo-rdzeniowym i w surowicy, ewentualnej korelacji poziomu białka z obrazem histologicznym ogniska uszkodzenia, a także zbadanie metodą ELISA stężenia akwaporyny 4 w płynie mózgowo-rdzeniowym oraz ewentualnej korelacji poziomu białka z obrazem histologicznym ogniska uszkodzenia.

W doświadczeniu wykorzystano 45 szczurów rasy Long Evans, które poddano doświadczalnemu uszkodzeniu rdzenia kręgowego.

Ustalono, iż w pierwszych trzech dobach po urazie w miejscu uszkodzenia dominuje obrzęk. W kolejnych dobach , aż do 28 dni po urazie utrzymuje się intensywny naciek zapalny, złożony głównie z makrofagów. Po 16 tygodniach po urazie w miejscu uszkodzenia widoczna jest w pełni ukształtowana jama wypełniona płynem i otoczona blizną glejową.

Stężenie akwaporyny 4 było zwiększone w grupach o przeżywalności 5, 7 i 14 dni. Stężenia białek mieliny zarówno w płynie mózgowo-rdzeniowym, jak i w surowicy nie wykazywały istotnych statystycznie różnic w porównaniu z grupą kontrolną.

Obecnie opracowywane metody farmakoterapii wykorzystujące efekt przeciwobrzękowy oraz efekt przeciwzapalny powinny być testowane łącznie w określonych punktach czasowych. Żadne z badanych białek nie koreluje w istotny sposób nasileniem zmian patologicznych w miejscu uszkodzenia i nie może stanowić użytecznego markera w celu monitorowania skuteczności leczenia.

P41

Uterine Perivascular Epithelioid Cell tumor (PEComa) – differential diagnosis of uterine mesenchymal tumors with epithelioid morphology: case report and review of literature

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PEComa is mesenchymal tumor with epithelioid and spindle cell morphology that rarely occurs in uterus. It's characterised by myoid and melanocytic differentiation resulting on variable positive staining for HMB 45, Melan A. Prognosis is uncertain. Malignant behaviour was reported if 4 or more of following were present: tumour size > 5 cm, infiltrative growth, high-grade cytologic features, mitoses > 1/50 HPF, necrosis, lymphovascular invasion.

It has to be included in differential diagnosis of tumors exhibiting epithelioid features, namely epithelioid variant of leiomyoma and leiomyosarcoma as well as undifferentiated carcinoma and metastatic carcinoma and melanoma.

Case of uterine corpus Perivascular Epithelioid Cell tumor was analysed using morphologic and immunohistochemical methods.

PEComa is rare uterine mesenchymal tumor characterised by epithelioid morphology and potential unfavourable prognosis. Immunohistochemical stains for melanocytic differentiation should be included in immunohistochemistry panel before establishing diagnosis of smooth muscle tumor in uterus.

P42

Usefulness of rebiopsy in case of mesangial pathology

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Mesangial changes are an issue without a definite solution. In the last several years, the notion "mesangial glomerulonephritis" has practically been eliminated as a result of immunological examinations, and replaced with notions such as "IgA nephropathy", "IgM nephropathy" or "IgG nephropathy". Their common morphological characteristic is most often the increase in number of mesangial cells (four and upwards), and the presence of deposits in the mesangium. Therefore, in histological or electron-microscopic evaluation, mesangial glomerulonephritis is still used, and the final diagnosis is given following immunofluorescence examination.

Results of 200 biopsies in patients with glomerulopathy were presented. In this group, in 118 patients progression was found, in 79 patients no difference in morphological image between the first and last biopsy was found, in 3 patients remission was stated. The time elapsed between the first and last biopsies was from 7 months to 35 years.

The most frequent clinical symptom was nephrotic syndrome, and the second most frequent was proteinuria. Other symptoms were a lot rarer. No coincidence between the increase in morphological changes and the character of clinical symptoms was found.

Progression was found at various stages of observation (after a few months, but also after many years).

Research results prove the usefulness of biopsy in patients who do not show adequate effects of treatment, especially with increased clinical symptoms. Electron-microscopic examination is necessary in order to discover early signs of progression.

P43

A rare autopsy case of multisystem atrophy

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Multiple system atrophy (MSA) is a rare, progressive neurodegenerative disorder of uncertain etiology, affecting adults. Depending on the clinical symptoms, the disease is classified as MSA-P with predominant parkinsonism or MSA-C with cerebellar signs. In most cases disease is diagnosed according to clinical criteria, but autopsy results revealed antemortem misdiagnosis in about 30% of cases. The diagnostic hallmark of neuropathological diagnosis of MSA is the presence of alfa-synuclein glial cytoplasmatic inclusions (GCI) in oligodendrocytes.

We present a case of 70-year old woman, admitted to emergency department with cardiorespiratory arrest and pulmonary oedema, without logic contact, with a history of atypical parkinsonism. Neurological examination showed extrapyramidal syndrome, spasticity of low extremities and axial stiffness.

Brain autopsy was performed after 2 weeks of whole brain formalin fixation. During macroscopic examination the pigment loss in the substantia nigra, together with atrophy and dark discoloration of the putamen was found. Histological findings correlated with gross examination. The extensive loss of the dopaminergic neurons in substantia nigra and neurons in putamen with coexisting astrogliosis were detected. Additionally in the putamen intracellular iron deposits were shown. No Lewy bodies in neurons were found. Alfa-synuclein staining revealed the inclusions typical for MSA. Based on these findings the neuropathological diagnosis of MSA-P was made. General autopsy findings confirm cardiorespiratory arrest as direct cause of death.

It is important to perform brain autopsy in any case with Parkinson syndrome to establish proper diagnosis.

P44

Recommendation for brain and spinal cord autopsy.

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Neuropathological brain and spinal cord postmortem examination is very specific and some documents should be available to assist pathologists in autopsy central nervous system (CNS) procedures.

Polish Society of Neuropathologist prepare a recommendation for CNS autopsy which should be regarded as educational tool. The protocol clarify how brain and spinal cord examination should proceed. The guideline include some legal issues, general condition and necessary equipment of autopsy theater. At the document we shortly describe essential neuroanatomy, steps of brain and spinal cord removal and appropriate cutting with gross examinations. Moreover, we focus on correct histopathology sampling according to brain type (normal or abnormal) with consideration of frequent pathological conditions such as ischemic brain, neurodegenerative disorders, epilepsy or alcohol abuse. At the end we present a proposed final autopsy report with all necessary information that should appear in it.

We believe is very important to promote and create such recommendation to improve the quality of CNS postmortem examination all over the country.

P45

Comparative analysis of abnormal Pap smear and the histopathological diagnosis of cervical biopsy based on material of Pathomorphology Department in The Mazovian Specialist Hospital in Radom

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Correlation between cytological and histological exams is one of the basic elements of continuous monitoring acuity of gyneacological cytology.

The aims of the study were: the comparative analysis of the results of abnormal cervical gyneacological cytology exams with the results of histopathologic exams in the same patients, defining the basic rates assessing the exam acuity in the Pathomorphology Department of the Mazovian Specialist Hospital in Radom, and also comparing the results with the medical literature data.

The analysis involved the patients with an abnormal cervical cytology conventional exam taken in our Department, from 1 January 2012 to 31 December 2016. Among all the examined patients, a group of 733 patients who presented with an initial diagnosis of LSIL, HSIL, ASC-H and Ca, was used for the comparative cyto-histopathological analysis.

In the researched time period, 3% of the patients were reported positively. In the analysed group we identified the histopathologically diagnosed neoplasia in 612 cases (83,5%). In 16,5% a histopathological exam did not attest a positive cytological result. The greatest number of the diagnostic incompatibilities were observed among the LSIL patients and ASC-H.

Correlation between cytological and histological exams was comparable with the one described by other authors, especially in HSIL and Ca groups. The number of the incompatibilities is within the range of the international guidelines. What can be bothering is a small proportion of histopathological exams taken in ASC-H cases, which can lead to belated treatments, and thus it should be explained.

P46

Breast carcinoma arising in microglandular adenosis – a case report

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Microglandular adenosis (MGA) is a very rare breast disease that can mimic well-differentiated breast cancer, both clinically and pathologically. It is believed that invasive cancer coexists in 27-30% of MGA cases. Breast cancer arising in MGA is called the abbreviation MGACA, while the form MGA with atypia – the abbreviation AMGA. The majority of groups of patients with MGACA described in the medical literature refer to 11-19 cases. MGA microscopic features are well known to pathologists, however, the criteria for differentiation of MGA, AMGA and MGACA due to the small number of cases are not standardized, which creates big diagnostic problems. In addition, the morphological similarity of MGA, AMGA to other changes in the breast, both non-neoplastic and invasive cancer, makes the diagnosis of this rare disease a big challenge for the pathologist, especially in a small oligobiopsy material. MGA was formerly thought to be a benign breast lesion, however, a recent molecular study of MGACA cases has shown that MGA is a neoplastic, clonal change, potentially a precursor to triple negative breast cancer (TBNC-triple negative breast cancer). It seems that cancers growing on the MGA medium constitute a separate subgroup within TBNC with probably a better prognosis. Surgical treatment even in large lesions is the treatment of choice, adjuvant chemotherapy is a question discussed.

We present a case of a 36-year-old woman with invasive cancer developing on the MGA and AMGA medium, retaining the immunophenotype characteristic of MGA, we discuss features that differentiate each stage of the development of change and differential diagnosis with other breast diseases. In addition, we present the results of genetic tests carried out with blood, which is not described in any publication known to us.

Key words: breast carcinoma, microglandular adenosis, triple-negative phenotype.

P47

Immunohistochemiczna detekcja insuliny w miejscu wkłucia w przypadku podejrzenia zabójstwa z samobójstwem sprawcy

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W praktyce medyczno-sądowej przypadki związane z samobójczym, zbrodniczym lub przypadkowym przedawkowaniem insuliny są rzadkie i należą do trudnych pod względem analitycznym i opiniodawczym. W każdym z tego rodzaju przypadków decydujące znaczenie mają wstępne informacje uzyskane od prokuratora lub policji przed sądowo-lekarską sekcją zwłok, które pozwalają na odpowiednie przeprowadzenie badania makroskopowego i ukierunkowanie diagnostyki pośmiertnej.

Celem pracy jest przedstawienie modelowego postępowania w tego typu przypadkach opracowanego w Katedrze i Zakładzie Medycyny Sądowej i Toksykologii Sądowo-Lekarskiej w Katowicach, ze szczególnym uwzględnieniem możliwości dodatkowego potwierdzenia podania insuliny przez jej immunohistochemiczną detekcję w miejscu wkłucia.

Opis dotyczy typowego przypadku zabójstwa-samobójstwa z wykorzystaniem insuliny. Według informacji prokuratury, 63-letni mężczyzna miał pozbawić życia żonę, psa, a następnie popełnić samobójstwo. W mieszkaniu ujawniono list pożegnalny, penfill i puste opakowania po preparacie NovoMix 30 (mieszanina szybko i długo działającego analogu insuliny). Sądowo-weterynaryjna sekcja zwłok psa wykazała śmiertelne obrażenia w postaci głębokich ran ciętych szyi i brzucha, natomiast oględziny i sądowo-lekarskie sekcje zwłok mężczyzny i kobiety nie wyjaśniły przyczyny ich zgonu. Ujawniono jednak miejsca wkłuć na udach i ramieniu. Zabezpieczono szeroki materiał do badań dodatkowych: biochemicznych, chemiczno-toksykologicznych i histopatologicznych, w tym wycinki z miejsc wkłuć. Badanie immunohistochemiczne z wykorzystaniem przeciwciała Polyclonal Guinea Pig Anti-Insulin FLEX IR002 (Dako) potwierdziło obecność insuliny w tkance podskórnej obu ofiar. Naszym zdaniem metoda immunohistochemicznej detekcji insuliny w miejscu wkłucia może i powinna być stosowana w każdym tego rodzaju przypadku.

P48

Lafora bodies in young Chihuahua dog

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Lafora disease is autosomal recessive and affects the metabolism of carbohydrates with abnormal storage of polyglucosans, which are produced and found in large numbers in the brain and liver, myocardium, striated skeletal muscles, as well as the skin. Myoclonus seizures are typically found in veterinary patients with, very rare, Lafora disease. Lafora disease has been documented in humans, dogs and one cat.

Four-year old male Chihuahua suddenly died overnight with no previous neurological symptoms. Upon necropsy severe inflammation of the gastrointestinal tract and cardiopulmonary insufficiency were found. Samples were collected from the all internal organs, include brain, for histopathological examination; stained routinely (HE) and according to PAS method. Moreover samples for bacteriological examination were collected. During histopathological examination necrosis in the cardiac muscle and around vessels in the lungs parenchyma were seen, moreover congestion (with hemorrhages) of all internal organs, especially lungs. Strongly PAS-positive Lafora bodies were found in the brain. Numerous *Escherichia coli* (hemolytic strains) were isolated from samples of all internal organs.

Lafora bodies are occasionally seen in older animals. In dogs with Lafora disease (Wirehaired Dashunds, Basset Hound, beagle, borzoi dog) average age of onset of first neurological clinical signs is 6.94 years. In presented case death of the animal was due to sepsis, caused by bacterial infection and Lafora bodies were found occasionally. This case is unique in that the dog was significantly younger than the typical age of dogs with Lafora disease, moreover there is no reported cases of Lafora disease in Chihuahua dogs.

P49

Calcification in liver of dogs with congenital portosystemic shunts

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Portosystemic shunts are abnormal vascular connections between the portal vein system and systemic venous circulation. Congenital portosystemic shunts, most commonly recognized in dogs, constitute pathological vessels that developed during embryonic life. Their presence, as previously thought, is not associated with portal hypertension. In humans, reported cases of calcification in the portal system are rare, and most of them have been associated with longstanding portal hypertension, which is capable of causing portal venous calcifications due to mechanical stress to the vessel's walls.

The aim of this study was to check the presence of calcification connected with the portal vein and the portosystemic venous branches in dogs with congenital portosystemic shunts.

Material for the study were 125 archival paraffin blocks, collected in 2005-2014 during diagnostic laparotomies or surgical closures of pathological vascular shunts, which included surgically biopsied liver samples from dogs of different breeds and both sexes. Slides were stained HE and Köss method for calcium salts.

The extrahepatic single shunts were confirmed in 119 dogs, extrahepatic multiple shunts in 1 dog and intrahepatic shunts in 5 dogs. Calcification was present in the vein's walls in 2 dogs (1.6%) with extrahepatic portosystemic shunt: Miniature Schnauzer, male, 12 months of age and cross-breed, male, 8 months of age. Calcification, which was visible around vessels in the portal area, not correlate with degenerative lesions at vessels walls (dystrophic calcification). This led us to conclude that, in the light of the humans literature data, in such animals portal hypertension may have occurred.

P50

Is infrared spektroscopy helpful in thyroid follicular tumors diagnostics?

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Distinction between follicular thyroid adenoma (FTA) and follicular thyroid carcinoma (FTC) may cause diagnostic problems despite using techniques supporting histopathology. The challenging cases often require second opinion. The commercial molecular tests are expensive and not applicable in the Polish population. Therefore, search for new methods continues.

To evaluate if infrared spectroscopy is useful in distinguishing between follicular lesions of the thyroid.

30 patients were enrolled, 15 with FTA and 15 with widely invasive FTC (WI-FTC), all with 10-year follow-up. All WI-FTC patients had documented disseminated disease. The samples (2 cores of a normal and two of neoplastic tissues from each specimen) were prepared using Tissue microarrays. Infrared spectroscopy involves the interaction of infrared radiation with matter. By passing infrared light through the sample, oscillation of its chemical functional groups is caused and the infrared spectrum is recorded. In our study FTIR spectroscopy and FT-Raman spectroscopy methods were used. The results were subjected to computational analysis to obtain information about the spectra variation among the types of tissues.

Both quantitative and qualitative changes were visible in received FTIR and FT-Raman spectra. Modifications in protein metabolism due to pathological processes in the tissues were visible. Also, an increased quantity of collagen in WI-FTC and FTA tissues was detected. Changes in nature of the spectra indicate alterations in gene expression leading to variability in proteins present in the tissues.

The results show that infrared spectroscopy is effective in distinguishing between FTA and WI-FTC as well as between normal and neoplastic thyroid tissue.

P51

Mixed medullary and follicular thyroid carcinomas – case report

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The literature describes rare cases of mixed medullary and follicular thyroid carcinomas, which constitute less than 1% of thyroid carcinomas. The occurrence of mixed (biphasic) metastases suggests the development from the multi-potential stem cells that may differentiate into follicular and parafollicular populations. Still, we cannot exclude the possibility that the bi-directional differentiation is driven by the microenvironment of medullary carcinoma, which may stimulate the growth of follicular carcinoma through the activity of generally known oncogenes.

We describe the case of a 68-year old man with increasing pain at the side of his neck as a first symptom.

After the USG examination of the neck and FNA biopsy of the tumour in the right thyroid lobe (DC V in the Bethesda System), the thyroidectomy resulted in a report of a 1.9 × 1.5 cm mixed medullary and follicular thyroid carcinoma. From 36 identified lymph nodes, 3 contained mixed metastases and 12 contained pure medullary carcinoma metastases. The immunohistochemistry assays were performed in tumour and lymph nodes.

The immunohistochemistry confirmed the biphasic character of the carcinoma components- medullary: TTF-1, CT (+) mixed with papillary: TTF-1, CK19, CKAE1/AE3, HBME (+) with 10% Ki67. The components were truly mixed in the metastases and were difficult to discern without immunohistochemistry: CT(+) and CK19(+) in respective cell populations.

This is the first case of a mixed medullary and follicular thyroid carcinoma with multiple mixed nodal metastases. The course of the disease might be insidious and difficult to predict.

P52

Holoprosencephaly with craniosynostosis in miscarried fetus

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Holoprosencephaly and craniosynostosis are conditions that usually occur separately with prevalances of 1:8000 and 1:2500 live births respectively. The numbers are highly underestimated if all pregnancies, including miscarried and aborted, are taken under consideration reaching 1:250 pregnancies with holoprosencephaly and 1:1400 with craniosynostosis. Very rarely those two conditions can coexist in the same patient as Genoa syndrome, also known as Camero – Lithuania – Cohen syndrome, a mysterious condition of yet uncertain genetic background but probably autosomal recessive pattern of inheritance. We have found 16 cases of this association documented in literature so far. Here we describe a patient, miscarried in ~15th week, fetus of undetermined sex, from the 6th pregnancy of 36-years old mother, having already 4 live births and 1 miscarriage in her history. The patient presented association of both, holoprosencephaly and craniosynostosis. We provide a detailed post mortem examination report of this fetus alongside with histopathologic report of both, fetal and placental tissues and hypothesize the possibility of rare Genoa syndrome, being present in this patient, which could be the first case report of this condition in Poland.

P53

NUT Carcinoma – the spectrum of histological appearances

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NUT carcinoma is a rare, aggressive tumor of the chest as well as head and neck location. It can occur at any age, but predominantly teenagers and young adults are afflicted. The tumor (formerly classified as NUT midline carcinoma) is genetically defined by a somatic translocation of the nuclear protein in testis (NUT) gene (chromosome 15q14). In most of the cases, the NUT gene is fused to bromodomain containing 4 (BRD4) gene (chromosome 19p13.1). The remaining one-third of the cases are termed NUT-variant in which the NUT gene is fused with BRD3, NSD3 or other undefined non-bromodomain containing genes. Diagnostic modalities of NUT carcinoma used to be limited to FISH and RT-PCR. The BRD-NUT fusion protein is present only in the nuclei of NUT carcinoma cells. That allowed to develop NUT-specific monoclonal antibodies that were proven to have 100% specificity and 87% sensitivity with a characteristic speckled pattern of staining. Microscopic slides of one recent case and slides of a few collected cases from the consultation files of head and neck NUT carcinoma have been reviewed to show relevant differences in the histological appearance. It became striking to us that on one end of the spectrum are tumors with small round, undifferentiated cells, and only focal abrupt keratinization; on the other end, tumors with clearly epithelial cells and areas of overt keratinization are seen. We will present remarks regarding some diagnostic clues.

P54

A first step analysis of a complex propranolol action mechanisms in infantile hemangiomas and their relation to CD133 and HIF1a signaling from proliferation to involution phase

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Infantile hemangiomas (IH) are tumors characterized by proliferation and involution phases. It is recently proved that proliferation phase is driven by activation of vascular endothelial growth factor receptor 2 (VEGFR2), and the normalization of vascular growth factor signaling by decreasing VEGFR2 expression and increasing VEGFR1 starts the involution phase. Although described above mechanism seems to be well established, the complete signaling in IH tissues on the transition from proliferation to involution phase, especially evoked by propranolol treatment is enigmatic.

Here we presented the studies on CD133 and HIF1a expression in rare group IH tissues which underwent propranolol treatment and their relation to VEGF signaling.

The limited IH tissue sections were selected for the preliminary study, from confirmed by immunochistrochemistry Glut-1(+) (the growth phases were accepted as that of depicted in Mulliken and Enjolras' description). Immunohistochemical estiomation of CD133 and HIF1a expression was performed and compared with previous VEGF studies, as well as related to the recent literature discoveries (Bone Marrow Derived Cells and SDF-1 part).

There were observed differences in CD133 and HIF1a positive cells indices in proliferation and involution phases. Obtained results in relation to VEGF signaling and propranolol use may suggest that the mechanisms involving of CD133, HIF1a and potentially SDF-1 and CD45+ cells takes part as a potential regulators. Presented studies brought us closer to understanding of complex signaling in IH tissues, as well as alight new mechanisms of tumor regression at the course of propranolol treatment for further investigation.

P55

The value of an atomic-structure tumor studies in relation to the routine histological evaluation and the established prognostic parameters based on clinical-scale analysis

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The discovery of prognostic impact of tumor atomic structure has opened a new age of research on human pathologies with the use of isotope ratio mass spectrometry (IRMS) in direct cancer tissue evaluation *in vivo*. IRMS use allowed to complete the knowledge of cancer on the atomic level and create a new area of biomarkers and potential targeted therapies. The isotopic profile of cancer structure was proved to be related to the course of the disease. IRMS modern, precise and versatile analytical method rapidly develops and the newest results of cancer investigation are published in the most demanded scientific journals. These facts lead to a question what is the IRMS value in comparison with the established methods of cancer studies: light microscope evaluation and molecular assessment.

There was performed an retrospective clinical-scale analysis of the results of 600 IRMS estimations in comparison with routine methods to search for the relation between isotopic composition of tumor tissues and parameters obtained with the use of light microscope and molecular techniques in routine diagnostic procedure according to the currently used protocols.

There was found the relation between tumor atomic-structure and universal prognostic parameters: the histological type of tumor from light microscope studies – as well as stage of cancer disease.

The atomic-structure tumor studies do not compete with the established methods of cancer tissue evaluation, furthermore they support findings from the group of prognostic parameters - the most important for individual patient consideration, make IRMS to be especially dedicated to personalized medicine.

P56

The atomic structure of Hodgkin and non-Hodgkin lymphoma – specific models of isotopic fractionation and cell metabolism

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Isotope ratio mass spectrometry (IRMS) method met the highest requirements concerning measurement quality and credibility even when based on non-numerous samples and it was recently to be applicable to cancer tissue studies *in vivo* with prospective clinical impact. The evaluation of isotopic profile currently has become a highly specialized area of cancer investigation able to reveal the differences not visible with the use of other techniques.

We took this versatile approach to investigate isotopic profile of Hodgkin and non-Hodgkin lymphoma to recognize their atomic structure and potential differences or relations between isotopic fractionation processes and established biology of the examined entities.

Nitrogen and carbon isotopic profiles of 6 frozen tissue samples from Hodgkin and Non-Hodgkin lymphoma (B-cell) of developmental age were evaluated with the use of Continuous Flow Isotope Ratio Mass Spectrometer coupled with elemental analyzer for simultaneous carbon-nitrogen-sulfur (NCS) analysis.

Distinct differences in isotope ratios were found in tumour tissues with regard to their histological type, clearly separating them. Non-Hodgkin lymphoma tissue appeared nitrogen and carbon depleted comparing with the Hodgkin type, as much as 2.05‰ for nitrogen and 0.86‰ for carbon.

Revealed diffeneces support the thesis that nitrogen depletion identifies entities characterized by worse prognosis, which need a more individual and complex approach. It is hard to identify the exact, metabolic processes behind obtained results, however, distinct differences captured in the studies suggest modified isotope fractionation patterns specific to biology and metabolism of Hodgkin and Non-Hodgkin lymphomas.

P57

Stem cells in solid tumors of childhood – preliminary evaluation of SOX2 (SRY (sex determining region Y) – box 2) and its potential relations to tumor biology and CD44 expression

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Stem Cells and Cancer Stem Cells are a small subpopulation with capabilities of self-renewal, differentiation, and tumorigenicity. One of the surface markers used to identify cancer stem cells is CD44 which is also known to be involved in cancer dissemination and proved to express in developmental neoplasms. SOX2 plays an essential role in somatic cell reprogramming, reversing the epigenetic configuration of differentiated cells back to a pluripotent embryonic state and it is also critical for directing the differentiation. Its expression was identified in many cancers and was related to abnormal differentiation. Solid tumors of childhood represent wide group with different histogenesis and biology. Although they are known to commonly activate the pathways of embryonal development there is no complex studies of potential clinical impact of SOX2 expression in this unique group.

Leading types of solid tumors of developmental age have been chosen for the first phase of the study. The search for SOX2 positive cells in tumor tissues was performed with the use of immunohistochemistry and retrospectively related to CD44 expression. An complex analysis of potential histoclinical relations of SOX2 presence as well as to CD44 expression was done.

There was observed SOX2 expression in tissues of solid tumors of developmental age. Preliminary results suggest that the presence of SOX2 positive cells may show the relation with CD44 presence and potentially reflect established prognostic parameters. Obtained results make to be reasonable the complex search of SOX2 expression and its potential prognostic impact in this group.

P58

Bone marrow-derived cells – an unappreciable factor in developmental tumor biology? A preliminary report

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Physiological and pathological blood vessel formation observed in ischemic tissues and in tumors is derived from the existing vasculature due to proliferation, as well as migration of endothelial cells. It is recently known that angiogenesis involves recruiting of bone marrow-derived cells (BMDC) which are a heterogeneous population consists of endothelial and pericyte progenitor cells, and CD45+ vascular modulatory cells. The latest are the most easily identify by LCA evaluation, which in solid tumors of developmental age is commonly an element of immunohistochemical panel in differential diagnosis. It is recently discovered that BMDC take part in tumor progression and regression processes much more that previously believed. Malignancies of developmental age are unique in their biology, spontanic regression and the unexpected disease progress followed by treatment failure are both observed. Despite wide range of prognostic parameters the course of the disease is not always predictable. It has not been found any complex studies on BMDC expression in tumors of developmental age in relation to their aggressiveness or the disease outcome.

The computed micropictures of the complete typical spectrum of developmental tumors was chosen for the studies and the preliminary search for BMDC LCA positive cells in tumor tissues and their surrounding was performed. An analysis of their presence, location and potential relation to chosen histoclinical features and prognostic parameters was done.

Obtain primary results suggest that BMDC may represent a population that function as a modulator of developmental tumor biology, mainly tumor progression, worth for further investigation, especially in neuroblastoma group.

P59

Decalcification protocol of bone tissue sarcomas – the critical point in routine histopathological diagnostics

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Decalcification is a key point in the routine diagnostic of bone sarcomas and bone marrow evaluation. The antigenicity may be altered by decalcifying agents that enable appropriate interpretation of immunohistochemical assessment and histopathological classification of the malignancy. Moreover, several decalcification procedures influence on the DNA/RNA quality. Currently, the molecular testing i.e. fluorescence in situ hybridization and next-generation sequencing has an increasing impact on the final diagnosis and treatment. Strong acids e.i. hydrochloric or nitric acid are widely used for their rapid decalcifying properties, but they are known to have a detrimental influence on immunoreactivity and DNA integrity. In comparison, weaker acidic buffers, containing formic or trichloracetic acid, now are growing in popularity. EDTA which is a chelating agent with neutral pH requires a longer time for the complete removal of calcium salts and an initial fixation in formalin but it seems to be superior for tissue morphology preservation and the majority of molecular methods.

The authors present their own experience in decalcification. We show results of implementation EDTA in routine bone sarcoma histopathological diagnostics. The main pitfalls of that procedure are depicted including immunohistochemical and molecular testing. We would like to encourage pathology departments to unification decalcifying methods with achieving high tissue quality goal for further testing. We highly recommend the EDTA protocol which can be applied without significant loss of immunoreactivity and RNA or DNA integrity loss.

P60

Neuropeptide Y and its receptors in primary and metastatic prostate cancer

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Prostate cancer (PCa) presents high morphological and clinical heterogeneity. The cancerogenesis of this malignancy is not well established. It is necessary to search for novel diagnostic markers and therapeutics targets. One of the new research area in oncology is significance an function of small peptides.

In this study, analysis of immunohistochemical distribution and intensity of neuropeptide Y (NPY) and its receptors in relation to patho-clinical data is presented. The material comprised of 51 primary prostate cancers and 11 bone metastases. The patho-clinical data: age, pT feature, Gleason score and Grade Group were considered. Microarray technique was performed. NPY system was explored in cancer (Ca), PIN and benign prostate (BP).

The study showed different expression of NPY in Ca and BP: homogeneous membrane-cytoplasmic pattern in cancer cells, and membranaceous with apical accent in luminal cells of glands in BP. The NPY expression and its receptors were higher in PCa then in BP with correlation among Y2R and Y5R. Moreover PIN, bone metastases and PCa displayed similar expression of all system elements. There were no statistically significant differences between NPY system and clinico-pathological features.

The observations indicate activation of NPY system in PCa and its possible auto- and paracrine role, and participation in invasion. Similar reactivity of NPY elements in PIN and PCa reveals its universal character and early event in prostate cancerogenesis.

P561

PARP1, *RNF213*, *PAX8*, *KMT2C*, *MTRR* mutations in malignant mesothelioma of testicular tunica vaginalis testis

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Molecular profile of mesotheliomas should be characterized in various sites e.g. in mesothelioma of tunica vaginalis testis (MMTVT). We aimed at determination of molecular profile of mesothelioma in such a site of 81-year-old man.

Standard HE as well immunohistochemical stainings were applied on tumor samples. Molecular next gene sequencing was used to evaluate mutations in 409 common mutated cancer-related genes in the case.

The tumor was composed of multifocal papillary-solid texture with necrosis fields among tightly packed areas of high cellularity with multiple mitoses. The tumor was positive for WT-1, CKAE1 / AE3, calretinin, CK7 with negativity for CK5, PSA, TTF-1. Following mutations were revealed in PARP1 (NM_001618: c.2285T<C p.V762A), RNF213 (NM_001256071: c.3121G<A, p.A1041T), PAX8 (NM_013992: c.404A>G, p.K135R), MTRR (NM_024010: c.147A>G, p.I49M) and two sorts of mutations in structure of KMT2C gene (NM_170606: c.2447_2448insA (c.2447dupA), p.Y816fs and NM_170606: c.1042G>A, p.D348N) for the first time in MMTVT.

On the ground of our findings, we conclude that development of MMTVT may be obscured by hereditary genetic predisposition in genes associated with DNA repair (PARP1), regulation of protein degradation (RNF213), surveillance of embryonic development (related to Müllerian duct origin) (PAX8), methionine synthesis (MTRR) and somatic changes

linked to epigenetic regulation of gene expression (KMT2C). Hereby presented, the peculiar molecular abnormalities could serve as targets for therapy in MMTVT.

P62

Predictive value of morphologic parameters described in endoscopic gastrobiopsy samples in assessment of *Helicobacter pylori* infection

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Assessment of *Helicobacter pylori* in gastrobiopsy samples is a routine practice in patient evaluation. The aim of the study was to determine whether morphologic parameters described in gastrobiopsy samples, such as: presence and intensity of chronic and active inflammation, intestinal metaplasia, atrophy and polyps are helpful in verification of Helicobacter pylori presence in histological samples.

Retrospective analysis of gastrobiopsies from 20675 patients diagnosed between 2010 and 2018 was performed. All samples were obtained from single institution (Gastromed Lublin) according to standardized procedure. Sections were stained with HE, paS with alcian blue and Warthin-Starry method. Morphological evaluation was performed according to Sidney/Houston protocol. Moreover, value of presence of most common polypoid lesions of the stomach, such as fundic gland and hyperplastic polyps was also determined.

Helicobacter pylori infection was detected in 6391 (30.82%) evaluated patients, 2399 (37.54%) men and 3992 (62,46%) women. Presence of *H. pylori* in gastric corpus was predicted by presence of: active inflammation (OR: 15.07; 95% CI: 13.65-16.23), chronic inflammation >1+ (OR: 6.98; 95% CI: 6.36-7.68), and lymphoid follicles (OR: 1.99; 95% CI: 1.80-2.21). Presence of fundic gland polyps (OR: 0.05; 95% CI: 0.02-0.12), intestinal metaplasia (OR: 0.38; 95% CI: 0.30-0.49) and atrophy (OR: 0.55; 95% CI: 0.42-0.71) were negative predictors. In gastric antrum infection was predicted by presence of: chronic inflammation >1+ (OR: 16.97; 95% CI: 14.85-19.40), active inflammation (OR: 13.44; 95% CI: 12.15-14.86), and lymphoid follicles (OR: 5.46; 95% CI: 4.92-6.06). Atrophy of the antral mucosa (OR: 0.57; 95% CI: 0.36-0.88) and antral foveolar hyperplasia (OR: 0.68; 95% CI: 0.59-0.79) were negative predictors. Presence of hyperplastic polyps and intestinal metaplasia were of no predictive value.

Histological features allow to identify patients with *H. pylori* infection with good reliability. Value of intestinal metaplasia is associated with its anatomical distribution. Presence of *H. pylori* in fundic gland polyps is very rare. Findings such as atrophy, intestinal metaplasia and fundic gland polyps during endoscopic examination can be helpful in verification of other methods to determine *H. pylori* infection.

P63

Osteopontin and premalignant breast lesions

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Progress in imaging and biopsy of breast tissue has enabled the detection of early lesions with different degrees of risk for transformation, raising the question who should receive treatment to counteract the potential for a progression to breast cancer. Because the secreted metastasis mediator osteopontin (OPN) is a marker for breast cancer progression, its presence in premalignant breast lesions may reflect progression risk.

By means of immunohistochemistry, we analyzed correlation between osteopontin variant expression with pre-cancerous breast lesions. The lesions comprised hyperplasia, papilloma, and carcinoma in situ from 415 women, and also from healthy women to assess a) staining for OPN exon 4 or OPN-c in low-risk to high-risk lesions b) correlations between staining and relapse or survival.

The markers correlated with risk. They were prognostic for relapse and survival. More than 95% of women, who experience a relapse had pathology scores of 2-3 for OPN-c intensity at the time of initial diagnosis. 0% of women free of OPN-c (pathology score 0), and about 10% of OPN-c pathology score 1 relapse over 5 years. When combining OPN-c and OPN exon 4 staining, all of the low intensity patients are alive after 5 years, whereas women in the high category have a 50% chance to die within 5 years. Of patients who died, close to 80% had a high score at the time of initial diagnosis.

The addition of OPN splice variant immunohistochemistry to standard pathology work-ups has the great potential to aid decision making in breast cancer prevention.

Key words: breast cancer, premalignant lesion, ductal hyperplasia, tumor progression marker, immunohistochemistry.

P64

Expression of MMP-9 and TIMP-1 in different steps of malignant transformation in the cervix – an immunohistochemical study

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Changes in the activity of the Metalloproteinases (MMPs) and their endogenous inhibitors (TIMPs) can lead to considerable degradation of the extracellular matrix and thus promote the invasion of the neoplasm.

The aim of the study was to evaluate the expression of MMP-9 and TIMP-1 in precancerous lesions and invasive cervical squamous cell carcinoma.

The study group consisted of 156 patients, included 20 cases LSILs, 75 cases of HSILs of which 30 cases diagnosed as CIN2 and 45 cases as CIN3, 56 patients with invasive cervical cancer and 5 cases with normal cervical tissue. The expression of MMP-9 and TIMP-1 was performed by immunohistochemistry.

A positive reaction to MMP-9 was found in all patients with invasive cervical squamous cell carcinoma and CIN3, in 90% patients with CIN2 and in 60% patients with CIN1. The percentage of cells expressing MMP-9 and the intensity of the reaction were the highest in cancers and CIN3 lesions. For TIMP-1 35.7% patients with invasive cervical cancer and 42.2% patients with HSILs showed the higher positivity.

The results supports the participation and the significant role of MMP-9 and TIMP-1 of progression pre-cancerous lesions to invasive cancer in the cervix and suggests that high MMP-9/TIMP-1 expression values may occur in the advanced process neoplasia in the cervix.

P65

Effect of 5-ALA mediated PDT in combination with thalidomide on murine breast carcinoma and endothelial cell lines

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Photodynamic therapy (PDT) is a minimally invasive cancer treatment method. It induces apoptosis of neoplastic cells, inhibit angiogenesis and modulate immune system.

Thalidomide is a drug used in hematology, mostly in treatment of plasma cell myeloma. It's pleiotropic effect is similar to PDT – induction of apoptosis and oxidative stress, angiogenesis inhibition and immune system modulation.

In this study we have examined effects of PDT/thalidomide combination *in vitro*.

Murine breast carcinoma 4T1 and murine endothelial 2H11 cell lines were treated with 5-ALA mediated PDT and incubated with thalidomide for 48 hours. MTT cytotoxicity assay, flow cytometry Annexin V/PI apoptosis assay of 4T1 and 2H11 cells were performed. For 2H11 cells VEGF expression was measured with ELISA.

Combination of PDT thalidomide showed an additive effect in cytotoxicity in 4T1 cells in comparison with PDT only and thalidomide only treated groups. Apoptotic cells fraction was similar in PDT and PDT/thalidomide treated cells. Administration of thalidomide after PDT resulted in lower expression level of VEGF by 2H11 cells. Interestingly VEGF expression was highest in PDT only treated cells, while PDT and thalidomide treated cells expressed VEGF at similar level of those treated only with thalidomide.

Several studies have found an increase in expression of VEGF in endothelium during first days after PDT. This may result in proliferation of tumor vasculature and favor malignant cells survival.

Our results suggest that addition of thalidomide to 5-ALA mediated PDT procedure may enhance anti-angiogenic effect. It requires further studies, however it may bring an advantage in cancer treatment.

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CD271+ mesenchymal stromal cells in myeloproliferative neoplasms Philadelphia-negative

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Myeloproliferative neoplasms Philadelphia-negative (MPN Ph-) are heterogenous group of malignancies. Their clinical picture, morfphology and microenviroment differ significantly. Mesenchymal stromal cells (MSCs) CD271-positive play major role in hematopoietic stem cells renewal. They have been analyzed in context of neoplasm development and propagation. Aim of this study is to analyze the histology of CD271-positive MSCs in MPN Ph-.

FFPE trephine biopsy slides from 31 patients diagnosed with primary myelofibrosis (PMF), polycythemia vera (PV) or essential thrombocytemia (ET) were stained using anti-CD271 monoclonal antibody. Staining area was measured using ImageJ software. MSC histotopography and architecture was assessed using conventional light microscopy.

In cases of ET and PV CD271+ MSCs were forming a loose meshowork with perivascular and periadipocytic distribution. In cases of PMF, CD271+ cells were forming thick bundles and dense meshwork entwining hematopoietic cells.

The stained area was similar in cases of PV and ET had a mean value of 12.2% and 9.5% respectively. In contrast, most cases of PMF showed staining with a mean value of 24.1%. There was not significant difference between fibrotic and prefibrotic PMF – 26.5% and 23.6% respectively.

Although a small group was analyzed, a strong relationship between MF and high CD271+ cells density is visible. Similar level of density in cases PMF and prePMF show that CD271 staining might be helpful in differentiating prePMF from other MPNs. Our study suggest that microenviromental niche created by CD271+ MSCs may be an important factor in development of high-grade myeloproliferative neoplasms. Further investigations are ongoing.

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Characteristics of thyroid tumors of uncertain malignant potential according to WHO classification

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Thyroid tumors of uncertain malignant potential (TUMP) are a new diagnostic category, introduced by WHO in 2017. These neoplasms includes FTUMP (follicular tumor of uncertain malignant potential), WDTUMP (well differentiated tumor of uncertain malignant potential) and NIFTP (noninvasive follicular tumor with papillary like features) and in 2018 year were diagnosed and consulted in 12% of all cases in our department.

The aim of the work was presentation of characteristics of these tumors.

The group consisted of 124 cases (women 85%, men 15%) send for consultation in Department of Tumor Pathology in Gliwice in 2018. Patients age ranged from 17-88 years old (mean 51.5 ±15 years). Tumor diameter fluctuated between 0.33-9 cm (mean 2.5 ±1.7 cm). Number of specimen significantly correlated with tumor diameter. Tumors appeared in both thyroid lobes in similar percentage.

The connective tissue capsule was present in 69%, whereas in 20% capsule was absent, in9% partian and in remaining 2% damaged. Non-infiltrated capsule was seen in38%, but partial infiltration by tumor cells was find in 50%, and multifocal infiltration in 11%, focal infiltration in 3%. Histological pattern was predominantly follicular (56%), then oxyphilic (14%), papillar (2%), mixed (28%). Post-biopsy pseudoaingioinvasion was observed in 2%. Remnant thyroid gland was unchanged in 25%, whereas remaining cases presented papillary cancer (19%), multinodular goitre (35%), chronic thyroiditis (19%) and others (2%). Proliferation index Ki67 varied 1-20% (3.45 ±3.09%). Concordance between initial diagnosis with final consultation was confirmed in 23%.

The group of thyroid tumors of uncertain malignant potential presents heterogeneous and ambiguous morphological profiles.

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Spindle cell adenoma of thyroid

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Spindle cell lesions of thyroid (T-SCL) belongs to rare lesions originated as proliferations could start from follicular, mesenchymal and parafollicular compartment and malignant type are more popular than benign or reactive process.

A case presented by us was diagnosed in a male 67 years. Grossly was good demarcated, 4cm in diameter, yellow-white tumor, located in the right lobe of thyroid. The cells were elongated, with hyaline produced matrix. Nuclei enlarged, polymorphous, brightening with pronounced nucleoli. Invasive growth and angioinvasion were not reported. Only focal, not intensive atypia was not typical for initial diagnosis (atypical adenoma) and eliminated spindle cell variant of anaplastic carcinoma. Immunohistochemical staining revealed positive reaction with TTF1, TG, CK AE1/AE3, CD 56 confirmed thyroidal origin. CT, CHR, synaptophysin and low level of calcitonin serum ruled out medullary carcinoma. CD5 negative disconnected SETTLE, CASTLE & FDCT. Nuclear staining Ki67 4 % didn't support hyalinizing trabecular tumor. CD34 was positive only in vessels, thus eliminated SFT. SMA was focally positive, and with connection of positive thyroidal markers didn't suggest smooth muscle tumours. S-100 negative ruled out peripheral nerve sheath tumors. Also CK7, CD99, CD20, CK19, EMA, INI-1 and CD 117 were negative. Interestingly, bcl-2 positive expression was suspicious for CASTLE but TG and TTF1 were positive.

The rare case should be revised to accent a role of vast immunohistochemistry in final diagnosis.

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Professor Witold Nowicki – great clinical pathologist of first half of the XX century, Head of the Department of Pathological Anatomy (1919-1941) of the Medical Faculty of Lviv Jan Kazimierz University (dedicated to the 150th anniversary of the birth)

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Witold Nowicki is rightly considered as one of the great clinical pathologist of the first half of XX century. He was apprentice of the founder and first head of the pathological anatomy department prof. Andrzej Obrzut.

Aim of the study was to analyse achievements of prof. Witold Nowicki in the field of medicine and pathology in particular, his scientific and pedagogical activity from modern perspective.

Analysis of medical, scientific, historical literature and internet sources that relate to life and activity of Witold Nowicki in Lviv, from 1902 to 1941, until the last days of his life. Analysis of professor's scientific papers.

Witold Walerian Nowicki – Professor, Head of the Pathological Anatomy Department (1919-1941), Dean of Medical Faculty (1923-1924, 1939), President of the Lviv Medical Society (1920-1921) and Lviv Fight Cancer Committee, Founder of the Lviv University Museum of Hygiene (1930), co-founder of the Morshyn resort. Was born in 18.07.1878 in Bochnia, Poland. In 1896-1902 he studied in medical faculty of the Jagiellonian University in Kraków. After obtaining of a diploma moved to Lviv and assumed the post of assistant in institution of the pathological anatomy. Since 1919 professor W. Nowicki has held the institution of the pathological anatomy in Lviv. He remained rich scientific heritage – more than 90 papers in Polish, German and France languages. Result of many years of work in institution of the pathological anatomy in cooperation with other teachers was fundamental three-volume textbook *Anatomia patologiczna*, which was illustrated by more than 1200 pictures, performed under personal management of W. Nowicki.

In last days, he was ending his monograph devoted to scleroma, which was published only after war in 1950 in Wroclaw. During German occupation of Lviv in 4th July 1941 W. Nowicki was arrested and shot

with other professors by Nazi Germans. His only son Jerzy Nowicki was shot with him.

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Concentration of CD10 protein in serum and tissue specimen in patients with adenocarcinoma tubulare large intestine – a pilot study

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The CD10 protein belongs to the group of transmembrane metalloproteases. Tissue expression of CD10 is observed in immature precursor cells of T and B lymphocytes, as well as in dividing B cells and mature neutrophils. In the literature, CD10 expression is described in the development of breast, lung and colorectal cancer.

Serum CD10 concentration was tested by ELISA as well as immunohistochemistry in tissue material from 30 patients diagnosed and treated due to Adenocarcinoma tubulare of the large intestine diagnosed in the histopathological examination. Serum CD10 concentration was compared with serum concentration from 10 humans prepared for appendectomy. Immunohistochemical and immunoenzymatic results were compared with tumor size, CEA concentration, CA 19.9 and AFP in serum and Astler-Coller's classification.

In serum and tumor the mean and median CD10 was higher in the study group than in the control group ($p = 0.0001$). Tumor size positively correlated with serum CD10 concentration ($Rs = 0.686$) to a greater extent in men than in women in immunohistochemical studies. Serum CD10 concentration was the highest in the B2 group according to the Asler-Coller classification.

Due to the small research group, one must carefully draw conclusions about CD10 as a prognostic biomarker in the diagnosis of Adenocarcinoma tubulare of the large intestine. Initial results, however, are interesting in the opinion of the authors.