Ventral hernia following lymphocele fenestration in a patient after renal transplantation – a case report and treatment strategy

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Abstract

Introduction: *Lymphocele is a common finding after renal transplantation. The frequency of this complication is up to 38%; of these, only 10% need surgical treatment. Unfortunately, hernia may be observed as a consequence of a lymphocele or its treatment.*
Aim: *To show the need for a complex approach to patients who have undergone kidney transplantation and in whom lymphocele has occurred. The secondary goal is to draw attention to the lack of randomized clinical trials which could give an answer to what type of approach the surgeon should use.*
Case report: *A 59-year-old woman underwent renal transplantation in June 2006. After one month a large lymphocele occurred surrounding the transplanted kidney, impressing the vein of the graft. In ultrasound examination, postoperative hernia was found. In August 2006 fenestration of the lymphocele was performed by the open approach with simultaneous onlay technique for repair of the hernia using PP mesh. In September 2006 the patient was admitted to the hospital with symptoms of bowel obstruction. Laparoscopy revealed colic intussusceptions into the post-fenestration orifice, which were liberated during the procedure. Hernia repair using laparoscopic intraperitoneal onlay mesh (IPOM) technique with ePTFE mesh was performed. Mesh was placed with a 5 cm overlap, using Protack tacks in the "double-crown" technique.*
Conclusions: *The presented case highlights the complexity of problems of ventral hernias occurring in patients who have undergone lymphocele treatment after renal transplantation. The surgical management should differ in different groups of patients (with hernia, with lymphocele, with both problems). Whether the open or the laparoscopic approach was used for that operation should be taken into consideration.*

Key words: *hernia, transplantation, kidney, lymphocele*

Introduction

Lymphocele is one of the most common early complications after kidney transplantation [1, 2]. In the literature the rate of its occurrence reaches 18% and may increase to 35% with some immunosuppressant usage, e.g. sirolimus. The main stream of lymph fluid collection appears in the surrounding of iliac vessels, remains asymptomatic and usually within a few weeks reabsorbs completely without surgical treatment [2, 3].

Bulging of the skin in the area of the transplant may be the first symptom of lymphocele formation. It may enlarge in size, increasing the pressure on the iliac vessels or urethra, which can finally lead to the loss of transplanted kidney function, or by increasing the intra-abdominal pressure may result in rupture of

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the suture line of the fascia. This mechanism may finally result in hernia formation. In these cases surgical intervention is needed in order to prevent damage or even loss of the graft. Internal drainage (fenestration) of the fluid compartment into a peritoneal cavity is the most common procedure in that case.

This procedure can be performed by either the laparoscopic or the classical approach [4, 5]. Differently when the fascia suturing is inadequate, than classical wound revision, fenestration and secondary abdominal wall closing is recommended. Mesh repair should be considered for defect closure in those cases.

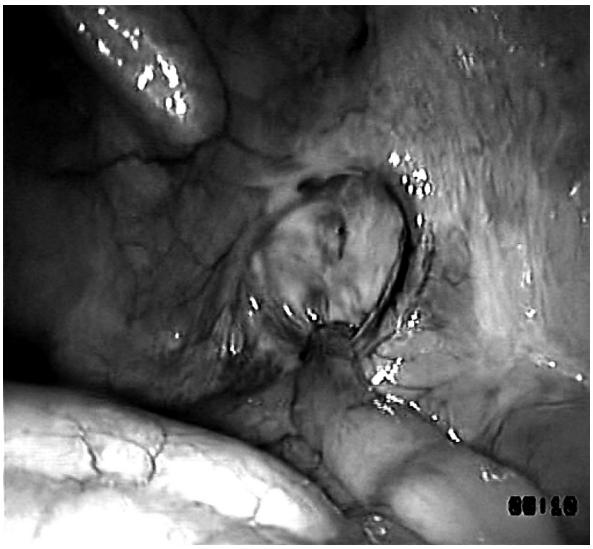

Figure 1. Bowel pulled out of the hernia sac

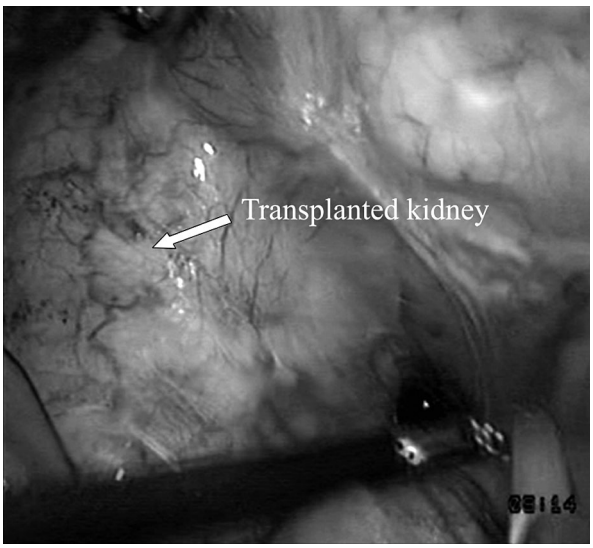

Figure 2. Transplanted kidney at the top of the hernia sac

Aim

The main aim of this study is to show the need for a complex approach to patients who have undergone kidney transplantation and in whom lymphocele has occurred. The secondary goal is to draw attention to the lack of randomized clinical trials which could give an answer to what type of approach the surgeon should use.

Case report

The 59-year-old patient was transplanted on 21.06.2006 with a cadaveric donor kidney due to a chronic kidney insufficiency as a result of its cirrhosis. During the postoperative period a large lymphocele and ventral hernia in the cicatrix occurred. Due to the progressive loss of graft function the patient was qualified for surgery. On 03.08.2006 hernioplasty using polypropylene mesh (Hertra-0, Herniamesh, USA) and peritoneal fenestration of the lymphocele were performed; both procedures were completed during the same operation.

Graft function was normalized directly after the operation. One month later the patient was readmitted to the hospital due to acute pain in the right lower abdomen; hernia recurrence was found, and bowels were located in the hernia sac (Figure 1). In ultrasound examination no fluid collection was discovered in the vicinity of the graft. The mesh margin (external – lower side) was found not to be fixed to the abdominal wall.

On 07.09.2006 laparoscopic hernia treatment was performed together with verification of fenestration openings (Figure 2). It was observed that all margins of the mesh were correctly fixed over the graft, and the fascia was not destroyed.

The colon together with the appendix protruded into the preperitoneal space, through one, and out of two fenestration openings of the peritoneum. A peritoneal hernia sac was not observed (Figure 1). The bowel and mesocolon protruded back into the peritoneal cavity (Figure 3).

Laparoscopic IPOM (intraperitoneal onlay mesh) procedure was performed (Dual-Mesh, WL Gore, USA) with 5 cm overlap. For the mesh fixation Protac (Tyco Inc. USA) was used in the “double crown” technique.

The patient was dismissed from the hospital 4 days after the operation. There were no complications noted either in the postoperative period or in 12-month follow-up.

Figure 3. Mesocolon in hernia orifice

Discussion

Lymphocele as one of the most common complications after kidney transplantation constitutes an important clinical problem [1] due to the diagnostic problems and infectious complications after its surgical treatment.

The diagnosis is made following the clinical suspicion. The symptoms and signs that are clinically significant are the ones secondary to the compression of the surrounding structures: tumour in the iliac fossa or hypogastrium, inferior ipsilateral limb oedema, obstruction of the upper or lower urinary tract, constipation, hypertension or venous thrombosis. Semiology must be integrated with the chronological moment of appearance of symptoms, knowing that lymphocele appears after the first month following surgery.

A schema of the diagnosis and treatment should be prepared once the lymphocele is diagnosed. Ultrasound examination as an easy and cost-effective method is the recommended standard for diagnosis in these cases [6]. It allows the recognition of fluid collection as well as hernia appearance and the hernia sac content, which seems to be of great importance for choosing the treatment method.

CT scan as a second choice is more precise and the region of the graft can be easily reconstructed in 3D. Although large lymphocele appears relatively often, a clinical standard of management is still lacking.

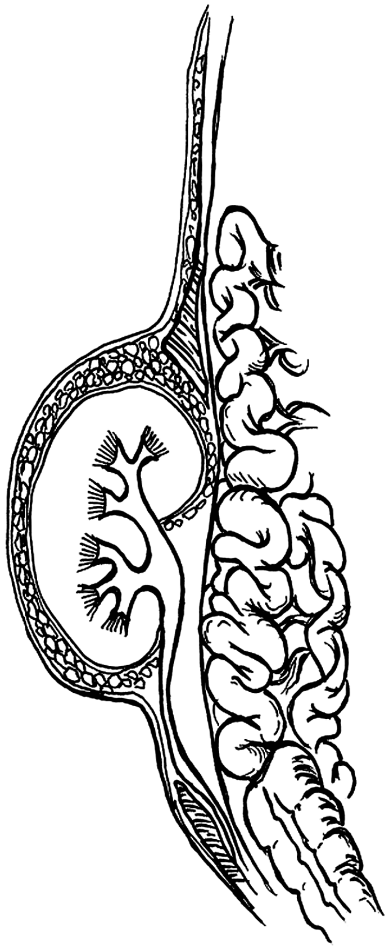

Figure 4. Graft as content of hernia orifice (insufficiency of the fascia)

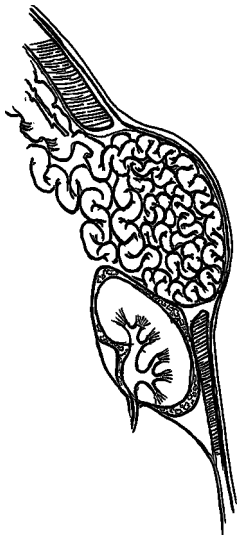

Figure 5. Bowels as content of hernia sac

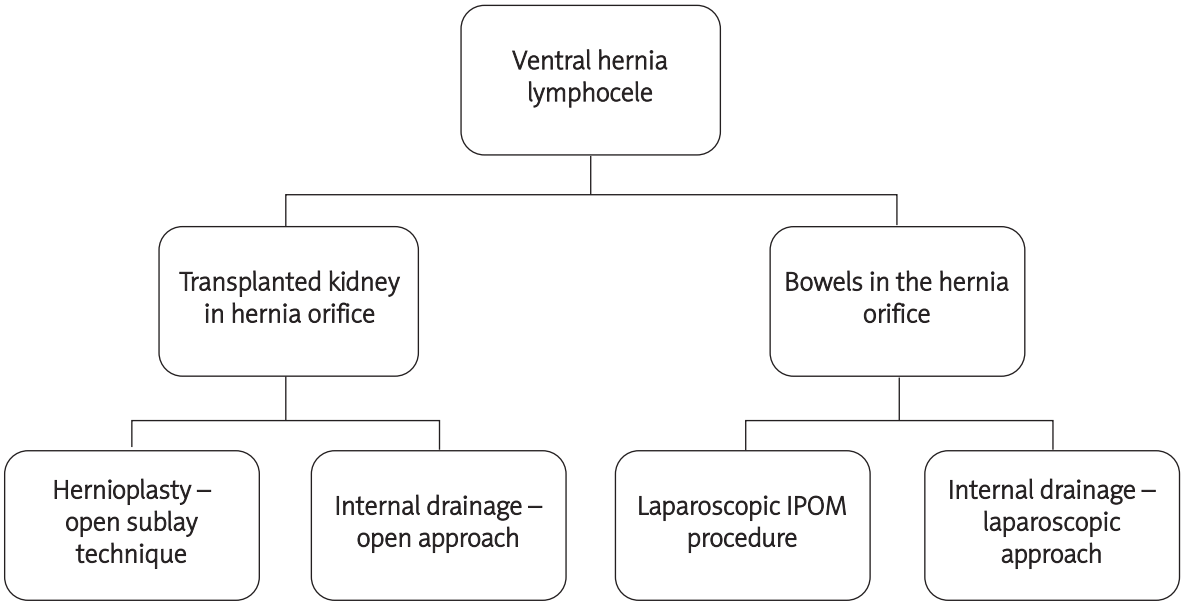

Figure 6. Treatment algorithm of lymphocele and hernia following renal transplantation (procedures should be done simultaneously)

There are several methods of therapeutic treatment, e.g. sclerotherapy, puncture, external drainage [1, 4, 5, 7]. Puncture and external drainage are not recommended in the case of large lymph collection due to a high risk of possible infection and recurrence [4, 7].

Internal drainage may be an alternative, and may be completed in the open as well as in the laparoscopic approach. This easy-to-perform method reveals high effectiveness [4]. It involves creating a gap in the peritoneum, which establishes communication between the lymphocele and the peritoneal cavity. This method due to the lack of guidelines carries a high risk of hernia formation. The recommended size and positioning of peritoneal openings are not described in the literature. The authors also believe that using the single incision laparoscopic surgery (SILS) method may be a valuable technique, but further investigation is still needed [8]. Not every abdominal bulging in the region of the graft will be a symptom of lymphocele formation. In some cases, due to the wrong surgical technique, a typical hernia may occur. Bowel, omentum or even renal graft in the hernia orifice can be found. Large lymphocele can be either a coincidence or a cause of the hernia.

Diagnosis of the described ventral hernia in patients after kidney transplantation is a very important clinical problem, influencing the operative strategy.

Two different clinical situations, considering the patient illustrated above, implicate different methods of treatment. If the graft is present in the hernia (Figure 4), the author proposes open hernioplasty with a polypropylene mesh and fenestration to be performed at the same time.

In the other case, when peritoneum with bowel appears in the hernia sac (Figure 5), and the graft in the proper position, laparoscopic IPOM and fenestration simultaneously are recommended. The author concludes that the treatment algorithm in these cases should consider various techniques based on the presence and location of the graft and hernia sac, and, what is significant, the surgeon must be well skilled in the laparoscopic approach [9] (Figure 6).

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