Late caecal fistula after laparoscopic appendectomy managed mini-invasively – case report

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Abstract

Laparoscopic appendectomy is being performed increasingly, worldwide. The laparoscopic approach is associated with a lower complication rate and a shorter period of disability but some major complications still occur. We present a case of a 22-year-old woman who underwent laparoscopic appendectomy for acute appendicitis. In 3 weeks time after surgery, after physical activity the patient presented acute abdomen. Exploratory laparoscopy revealed peritonitis caused by caecal fistula. Laparoscopic lavage and drainage of the peritoneal cavity with formal caecostomy was performed. The postoperative course was uneventful. The stoma was closed in 6 months' time without other complications. In our opinion laparoscopy is proven to be a safe and good option for diagnostics and treatment of some complications of appendectomy.

Key words: *laparoscopic appendectomy, complications, caecal fistula.*

Introduction

Acute appendicitis is the reason for most urgent admissions and unscheduled operations in general surgery. In the western world, approximately 8% of the population are appendectomized [1]. Laparoscopic appendectomy has gained acceptance over the last decade and is being performed increasingly worldwide [2]. The laparoscopic approach is associated with a lower complication rate and a shorter period of disability [3]. Some major complications still occur. In the literature, specific reported complications after laparoscopic appendectomy include bowel injury, haemorrhage, wound infection, caecal fistula, infected hydrocele and iliac-iliac AV fistula [4].

Case report

A 22-year-old previously healthy female presented to the emergency department with a 2-day history of diffuse abdominal pain later migrating to the right iliac fossa. The pain was associated with nausea and anorexia. Her medical history was not significant. She has no history of abdominal surgery. The patient's physical exam at presentation was significant for right lower quadrant pain with voluntary guarding. The patient's white blood count at that time was 9.1×10^9 cells/l. The ultrasonography (USG) abdomen and gynaecological examination found no pathology. The patient was taken to the operating room for laparoscopic exploration which proved the clinical suspicion of acute appendicitis. We performed

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a laparoscopic appendectomy using the routine technique with the placement of a 10 mm optical trocar at the level of the umbilicus and introduction of two 5 mm trocars, one in the suprapubic median position and one in the left flank. The base of the appendix was double ligated, and the stump was buried with Z suture. Pathological examination of the excised appendix verified the diagnosis of acute phlegmonous appendicitis. The patient's early post-operative course was uneventful. She was discharged 2 days after surgery. The patient was treated perioperatively with a 2-day regimen of intravenous cefoxitin (1,000 mg every 6 h) and as an outpatient with a 5-day course of oral ciprofloxacin. On the 21st post-operative day, after being pulled by a dog during a walk, the patient presented acute abdominal pain associated with voluntary guarding and tenderness in the hypogastrium. She was admitted to the Gynaecology Department. After conservative treatment the ailments disappeared. She consulted a surgeon. A computed tomography (CT) scan was performed which revealed a large amount of free fluid and a tiny air bubble under the left hemidiaphragm. She was transferred to the Surgical Department. She was operated on; exploratory laparoscopy revealed a large amount of free greenish fluid and a closed caecal fistula. Lavage with 1000 ml saline, drainage and formal caecostomy were performed. The patient was treated perioperatively with a 5-day empirical antibiotic regimen of intravenous piperacillin-tazobactam (4,500 mg every 8 h) and later 8-day guided treatment with ciprofloxacin (3 days intravenous and 5 days oral treatment as an outpatient). The postoperative course was uneventful. The stoma was closed 6 months later with no other complications.

Discussion

In the last 2 decades nothing has changed surgery more than implementation of laparoscopy. Miniinvasive techniques are now often applied not only in planned surgery, but also in emergency procedures done for "acute abdomen" [5]. These changes did not bypass Poland [6, 7]. Acute appendicitis is still the most common reason for emergency surgery [8, 9]. For many years the gold standard was open appendectomy, which is proven to be a safe and feasible technique. Nowadays there are many hospitals where the laparoscopic approach is the method of choice. Some authors indicate a higher rate of intra-abdominal abscesses after minimally invasive appendectomy, especially when perforation or gangrene is present [10]. The new randomized clinical trials do not confirm this observation; on the contrary, they show the advantages of laparoscopy in complicated appendicitis [11]. The group of patients who benefit the most from the laparoscopic method are childbearing women [12]. Gynaecological diseases or even ovulation are common causes of acute abdominal symptoms in these patients. Mini-invasive techniques allow an exact diagnosis of possible intra-abdominal pathology and reduce the risk of laparotomy-associated adhesions, which can cause infertility or intestinal obstruction. Other groups who benefit are the obese and the elderly. This is mostly due to the improved post-operative course and reduced complication rate, especially at the wound site, which is a serious problem in these groups of patients [13, 14].

Laparoscopic appendectomy has a lower complication rate than the classic technique but some dangerous adverse effects still occur [15]. One of the most hazardous is appendiceal faecal fistula.

Its frequency is about 0.5% and it is present most often after operations due to complicated appendicitis [16]. The time of occurrence is most frequently on the 3rd to 4th post-operative day. The cause of occurrence of fistula on the 21st post-operative day is unclear. Probably necrosis of the appendiceal stump was present earlier but was camouflaged and closed by surrounding tissues. Its existence was revealed after physical activity, which is undertaken earlier and to a greater degree by patients after miniinvasive surgery. The most serious complications, such as fistula and vascular injury, are mainly managed by open surgery [4]. However, there are some reports of successful laparoscopic treatment of some major adverse events after appendectomy [17]. In our case, the miniinvasive approach proved to be a safe and effective way of diagnosing and treating complications of this kind.

Conclusions

Laparoscopic appendectomy has a lower complication rate than the classic technique but some dangerous adverse effects still occur. In our opinion, laparoscopy is proven to be a safe and good option for diagnostics and treatment of some complications of appendectomy.

References

1. Addis DG, Shaffer N, Fowler BS, et al. The epidemiology of appendicitis and appendectomy in the United States. Am J Epidemiol 1990; 132: 910-25.
2. Schick KS, Hüttl TP, Fertmann JM, et al. A critical analysis of laparoscopic appendectomy: how experience with 1,400 appendectomies allowed innovative treatment to become standard in a university hospital. World J Surg 2008; 32: 1406-13.
3. Guller U, Hervey S, Purves H, et al. Laparoscopic versus open appendectomy: outcomes comparison based on a large administrative database. Ann Surg 2004; 239: 43-52.
4. Kuehnl A, Zimmermann A, Pongratz J, et al. Young girl presenting with heart failure 5 years after laparoscopic appendectomy. Case report of an ilio-iliac AV fistula. Eur J Vasc Endovasc Surg 2010; 40: 107-9.
5. Strzałka M, Bobrzyński B, Budzyński A, et al. Open or laparoscopic appendectomy? Videosurgery and Other Miniinvasive Techniques 2009; 4: 110-4.
6. Strzałka M, Bobrzyński A. Laparoscopy in the treatment of acute abdominal diseases. Videosurgery and Other Miniinvasive Techniques 2008; 3: 1-9.
7. Jurga G, Fabisiewicz S, Łazarz M, et al. Laparoscopic interventions in urgent patients – 2 years of our experience. Videosurgery and Other Miniinvasive Techniques 2007; 2: 119-21.
8. Shamim M, Haider SA, Iqbal SA. Persistent appendiceal faecal fistula following a complicated open appendicectomy. J Pak Med Assoc 2009; 59: 181-3.
9. Schick KS, Hüttl TP, Fertmann JM, et al. A critical analysis of laparoscopic appendectomy: how experience with 1,400 appendectomies allowed innovative treatment to become standard in a university hospital. World J Surg 2008; 32: 1406-13.
10. Kehagias I, Karamanakos SN, Panagiotopoulos S, et al. Laparoscopic versus open appendectomy: Which way to go? World J Gastroenterol 2008; 14: 4909-14.
11. Markides G, Subar D, Riyad K. Laparoscopic versus open appendectomy in adults with complicated appendicitis: systematic review and meta-analysis. World J Surg 2010; 34: 2026-40.
12. Zaninotto G, Rossi M, Anselmino M, et al. Laparoscopic versus conventional surgery for suspected appendicitis in women. Surg Endosc 1995; 9: 337-40.
13. Enochsson L, Hellberg A, Rudberg C, et al. Laparoscopic vs open appendectomy in overweight patients. Surg Endosc 2001; 15: 387-92.
14. Hui TT, Major KM, Avital I, et al. Outcome of elderly patients with appendicitis. Arch Surg 2002; 137: 995-1000.
15. Nakhamiyayev V, Galldin L, Chiarello M, et al. Laparoscopic appendectomy is the preferred approach for appendicitis: a retrospective review of two practice patterns. Surg Endosc 2010; 24: 859-64.
16. Lintula H, Kokki H, Vanamo K, et al. Laparoscopy in children with complicated appendicitis. J Pediatr Surg 2002; 37: 1317-20.
17. Yang JC, Rivard DC, Morello FP, et al. Presumed appendiceal abscess discovered to be ruptured Meckel diverticulum following percutaneous drainage. Pediatr Radiol 2008; 38: 909-11.