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CASE REPORT

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Stump appendicitis and generalized peritonitis due to incomplete appendectomy

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Abstract Stump appendicitis is a rare clinical situation when there is incomplete appendectomy. A wide spectrum of diseases in the differential diagnosis of right lower quadrant pain of the abdomen and presence of appendectomy operation in a patient's history delay the diagnosis. We report such a case of perforated stump appendicitis and generalized peritonitis occurring eight months after appendectomy.

Key words Appendicitis • Appendectomy • Stump appendicitis

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Introduction

Appendicitis still remains one of the most common acute surgical diseases with a bacterial process that is usually progressive. Obstruction of the lumen is the dominant causative factor. Most of the complications of appendectomy include wound infection, periappendicular or intra-abdominal abscess and postoperative adhesions [1]. The other late technical complication is stump appendicitis [2–6].

We herein report a case of stump appendicitis related to generalized peritonitis eight months after an appendectomy.

Case report

A 68-year-old woman presented to our emergency department with diffuse abdominal pain lasting 24 hours. She did not complain of nausea, vomiting, urinary tract symptoms, excessive vaginal discharge or change in bowel habits. Her surgical and medical histories included an appendectomy eight months earlier, hypertension and atrial fibrillation. When she was admitted to our emergency department, she had a temperature of 38° C (axillary) and 38.8° C (rectal), blood pressure of 150/80 mmHg, pulse rate of 88/min, and respiratory rate of 18/min. She had a right lower pararectal incision scar and bowel sounds indicated hypoperistalsis. There was bilateral lower abdominal quadrant tenderness, but no defense was detected. There was tenderness but no mass was palpated by digital rectal examination. The stool was negative for occult blood.

After presentation to emergency room, intravenous fluid resuscitation was initiated and a nasogastric tube was placed. Hemoglobin level was 12.9 g/dl, white blood cell count was 16 400/mm^3 and platelet count was 166 000/mm^3.

As she presented with an acute abdomen, she was taken to the operating room for an exploratory laparotomy after adequate intravenous electrolyte replacement. At operation intra-

abdominal purulent material and periappendicular stump abscess with perforation of stump by impacted fecaliths were found (Figs. 1, 2). Cecum was dissected from its retroperitoneal attachments. A stump of 3 cm in length was resected and inverted into the cecal wall with interrupted sutures. After irrigation of the abdominal cavity thoroughly, four rubber drains were placed inside the abdomen to drain subhepatic, suprahepatic, splenic and recto-uterine locations.



Fig. 1 Stump appendicitis before perforation

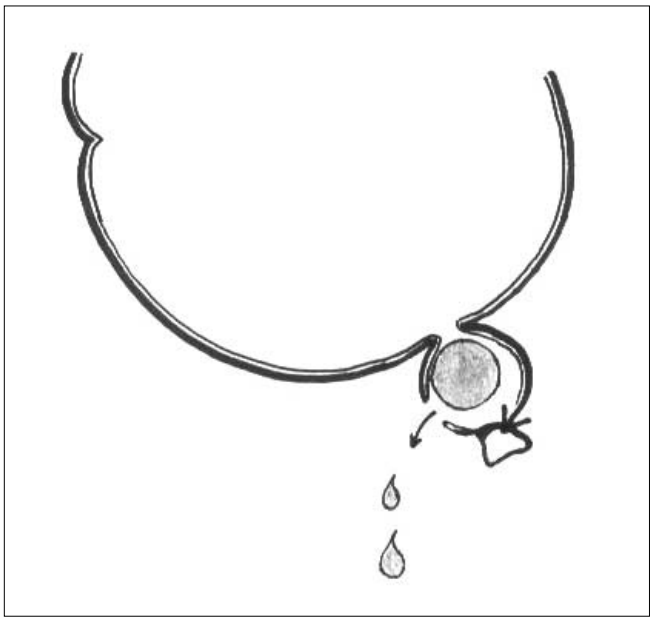


Fig. 2 Appendiceal stump perforation by the fecalith

The postoperative course was uneventful. On the third day after the operation sips of water were permitted and the diet was gradually increased. On the sixth postoperative day the drains were withdrawn. The patient was discharged 10 days following her second operation for appendicitis. She is in good general health after one year.

Discussion

Stump appendicitis is a rare and serious clinical entity. Patients who had undergone appendectomy operation are not considered to have a disease based on appendiceal stump. Delayed operation causes peritonitis and increases morbidity and mortality.

The morbidity and mortality in children between 1 and 5 years of age and in patients over 60 years of age are appreciably increased. High rate of childhood perforation is caused by the presence of a short, incompletely formed omentum. Early perforation may be due to an anatomically thinned, atrophic and therefore vulnerable appendix in the elderly [7].

There is no consensus regarding how to avoid stump appendicitis. A long stump may be occluded by a fecalith, become ischemic and eventually perforate. Inversion of the long stump into the cecal wall also does not prevent later events [1, 2]. In our case there was no occlusion, but there was perforation by the direct impact of the fecalith causing generalized peritonitis.

In the literature, causes of stump appendicitis are insufficient inversion of stump, remnant of excessive length and insufficient laparoscopic appendectomy [1, 2, 4]. Long remnant is a potential risk for appendicitis for a patient who had undergone appendectomy. The appendix should be divided approximately 5 mm from the cecal wall and ligated to prevent bleeding and leakage from the lumen [1]. Ligated stump can be inverted or not. Stump inversion is performed to prevent contamination of the peritoneal cavity. If the separation of the ligature occurs, bowel material contaminates the peritoneal cavity and the patient develops either generalized peritonitis or periappendiculer abscess. However, stump inversion can cause small cecal intramural abscesses.

Since the common use of laparoscopy in surgical arena, stump burial technique has become disputed. Recent prospective trials have shown no advantages gained by inverting the appendiceal stump [8]. Angled scopes may provide a good visualization of the appendix and a sufficient amputation. However, appendectomy can sometimes be done insufficiently [9] without complete dissection in retrocecal subserous appendicitis. As a result, stump appendicitis may occur after either open or laparoscopic appendectomy, according to the experience of the surgeon. A stump longer than 5 mm may cause such complications and also serves as a reservoir for the fecalith that may result with a stump perforation.

In conclusion, stump appendicitis should be considered in the differential diagnosis of right lower quadrant abdominal pain despite a patient's history of appendectomy. Laparoscopic approach should also be performed by experienced surgeons.

References

1. Berne TV, Ortega A (1997) Appendicitis and appendiceal abscess. In: Nyhus LM, Baker RJ, Fischer JE (eds) Mastery of surgery. Little Brown, Boston, pp 1407–1411
2. Mangi AA, Berger DL (2000) Stump appendicitis. Am Surg 66:739–741
3. Oncu M, Calik A, Alhan E (1991) A comparison of the simple ligation and ligation inversion of the appendiceal stump after appendectomy. Chir Ital 43:206–210
4. Devereaux DA, McDermott JP, Caushaj PF (1994) Reccurent appendicitis following laparoscopic appendectomy. Report of a case. Dis Colon Rectum 37(7):719–720
5. Erzurum VZ, Kasirajan K, Hashmi M (1997) Stump appendicitis: a case report. J Laparoendosc Adv Surg Tech A 7:389–391
6. Marcoen S, Onghena T, Van Loon C, Vereecken L (1999) Residual appendicitis following incomplete laparoscopic appendectomy. Acta Chir Belg 99:39–40
7. Sinanan MN (1993) Acute abdomen and appendix. In: Greenfield LJ, Mulholland MW, Oldham KT, Zelenock GB (eds) Surgery. JB Lippincott, Philadelphia, pp 1120–1142
8. Fitzgibbons RJ, Ulualp KM (1997) Laparoscopic appendectomy. In: Nyhus LM, Baker RJ, Fischer JE (eds) Mastery of surgery. Little Brown, Boston, pp 1412–1419
9. Greenberg JJ, Esposito TJ (1996) Appendicitis after laparoscopic appendectomy: a warning. J Laparoendosc Surg 6:185–187