Single-Incision Laparoscopic Ileo-Cecal Resection for Appendiceal Mucocele

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Abstract Mucocele of the appendix is a rare lesion which denotes a distension of the lumen due to accumulation of mucoid substance, and a possible rupture of the mucocele may result in the clinical condition of pseudomyxoma peritonei. Therefore, the laparoscopic approach for this disease is still controversial because improper handling may cause inadvertent rupture. We present a successfully treated case with the single-incision laparoscopic approach. An 88-year-old man was diagnosed with the mucocele of the appendix, and we decided to perform the single incision laparoscopic ileocecal resection. First, a lap protector was inserted through a 3.0 cm transumbilical incision. Three 5 mm ports were placed in EZ access mounted on the lap protector. On the observation of laparoscopy, a retrocecal appendix was found. We successfully mobilized the right colon and transected the ileum using an endoscopic linear stapler. The right colon with appendix was carefully extracted through the umbilical incision. Resection and anastomosis were achieved following extracorporealization. The appendix was measured 7 cm in length and 3 cm in diameter; a final histopathological diagnosis was mucocele caused by mucinous cystadenoma. This is, to our knowledge, the first case of a single-incision laparoscopic ileocecal resection for mucocele of the appendix described in the indexed literature.

Keywords Single-incision laparoscopic surgery · Ileo-cecal resection · Single-incision laparoscopic surgery · Appendiceal mucinous cystadenoma

Introduction

Mucocele of the appendix is a rare lesion which denotes a distension of the lumen due to accumulation of mucoid substance [1]. Appendiceal cystadenoma or cystadenocarcinoma is the histological form of this condition. In the case of cystadenocarcinoma, a possible rupture of the mucocele, either spontaneous or accidental, may result in the clinical condition of pseudomyxoma peritonei, and laparoscopic surgery for this disease is still controversial because improper handling may cause inadvertent rupture [1, 2].

Our institution has begun performing single-incision laparoscopic surgery (SILS) since August 2010 as a less invasive procedure than conventional methods because it requires only one intraumbilical incision.

We presented a successfully treated case with single-incision laparoscopic ileocecal resection. This is, to our knowledge, the first case of a single-incision laparoscopic ileocecal resection for mucocele of the appendix described in the indexed literature.

Case Report

An 88-year-old man was admitted to our hospital for the treatment of multiple colorectal polyps. Total colonoscopy accidentally revealed an evidence of external compression of the cecum (Fig. 1). Computed tomography scan of the abdomen showed a hypodense, tubular, cystic structure extending

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Fig. 1 Total colonoscopy showing an evidence of external compression of the cecum

below the inferior wall of the cecum (Fig. 2). Under the diagnosis of the mucocoe of the appendix, we decided to perform single-incision laparoscopic ileocecal resection with

Fig. 2 CT scan of the abdomen showing a hypodense, tubular, cystic structure extending below the inferior wall of the cecum

prophylactic lymph node dissection, because we could not exclude the possibility of the cystadenocarcinoma.

Surgical Technique

Under general anesthesia, the patient was placed in the modified lithotomy position. First, a lap protector mini (Hakkou-Shoji, Japan) was inserted through a 3.0 cm transumbilical incision, and then the wound was protected and the operative field was secured. Four 5-mm ports were placed in the EZ access (Fig. 3; Hakkou-Shoji, Japan) mounted with the lap protector mini. On the observation of laparoscopy, a swollen appendix was found (Fig. 4). There were no lymphadenopathy or hepatic metastases. No other tumors were noted in the abdominal or pelvic cavities. We successfully mobilized the right colon using a medial approach. The soft tissue around the ileocolic vessels was removed and lymph node dissection was achieved. Then the ileocolic vessels were divided. Transection of the ileum was performed using an endoscopic linear stapler. The right colon with appendix was carefully extracted through the umbilical incision. Resection was achieved following extracorporealization, and the anastomosis was performed extracorporeally using staplers.

Postoperative Period

The appendix was measured 7 cm in length and 3 cm in diameter (Fig. 5). A final histopathological diagnosis was mucocoe caused by mucinous cystadenoma. There was no evidence of malignancy. Patient's postoperative course was unremarkable and he was discharged on the 13th postoperative day. Postoperative follow-up did not reveal any umbilical wound complications or recurrences.

Fig. 3 5 mm ports placed in the EZ access

Fig. 4 The swollen appendix on the observation of laparoscopy

Discussion

Many surgeons have attempted to reduce the number and size of ports in laparoscopic surgery to decrease parietal trauma and improve cosmetic results, and recently an innovation has been developed: single-incision laparoscopic surgery (SILS) [3–6], which completes laparoscopic procedures by trocars located at one umbilical incision. Our institution has begun performing SILS since August 2010 as a less invasive procedure than conventional methods because it requires only one intraumbilical incision, and subsequently we have developed a technique for ileocecal resection for mucocoele of the appendix.

Appendiceal mucocoele is a rare clinical entity which denotes a distension of the lumen due to accumulation of mucoid substance [1, 2]. Appendiceal cystadenoma or cystadenocarcinoma is the histological form of this condition. This disease is often asymptomatic and preoperative diagnosis is rare; however, it is important both to identify the disease preoperatively and to plan a careful resection to remove the mass. In the case of cystadenocarcinoma, a possible rupture of the mucocoele, either spontaneous or accidental, may result in the clinical condition of pseudomyxoma peritonei; therefore, the laparoscopic approach for this disease is still controversial because improper handling may cause inadvertent rupture. Literature review, however, shows us that appendiceal mucocoele is not a contraindication for laparoscopic surgery [2, 7], but the major concern resides in taking appropriate precautionary measures to avoid rupture in the peritoneal cavity.

This is, to our knowledge, the first case of a single-incision laparoscopic ileocecal resection for mucocoele of the appendix described in the indexed literature. Our presented case demonstrates that single-incision laparoscopic ileocecal resection is a feasible and promising alternative method for appendiceal mucocoele which could not rule out the possibility of the mucinous cystadenocarcinoma, and we

Fig. 5 The appendix—7 cm in length and 3 cm in diameter

believe this approach may bring the safety and less invasiveness for these cases.

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