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CASE REPORT / OLGU SUNUMU

Single-port laparoscopic left colectomy for colo-colonic intussusception caused by giant lipoma

Dev lipomun neden olduğu kolo-kolonik invajinasyon için tek port laparoskopik sol kolektomi

Fahrettin Acar, Mustafa Şahin, Hüsnü Alptekin, Hüseyin Yılmaz, M. Ertuğrul Kafalı

ABSTRACT

Laparoscopic surgery for colorectal disease has been shown to improve postoperative healing compared with open surgery. Specifically, studies suggest that laparoscopic techniques can reduce postoperative pain and recovery time, reduce the need for postoperative analgesia, and allow a more rapid return to normal activities compared with open surgery. A series of cases have been reported in the literature concerning the success rate of single-incision laparoscopic colectomy used in the treatment of benign or malign colorectal disease. A 38-year-old female patient having chronic cramping abdominal pain, who's descending colon included a giant lipoma causing intussusceptions. Lipoma was detected by colonoscopy, the histological examination revealed lipoma and then was operated with single port laparoscopic left colectomy in elective conditions. No intraoperative and postoperative complications occurred. The operation time was 105 minutes. The wound size was 2.5 cm. The patient was discharged uneventfully on postoperative day four.

Key words: Lipoma, colo-colonic intussusceptions, single incision

ÖZET

Kolorektal hastalık için laparoskopik cerrahi açık cerrahi ile karşılaştırıldığında postoperatif iyileşmeyi artırdığı gösterilmiştir. Özellikle, çalışmalar laparoskopik tekniklerin postoperatif ağrı ve iyileşme süresini azalttığı, postoperatif analjezi ihtiyacını azalttığı ve açık cerrahi ile karşılaştırıldığında normal aktivitelerine daha hızlı bir geri dönüş sağlayabildiğini öne sürmektedir. Kronik kramp tarzında karın ağrısı olan 38 yaşındaki kadın hastanın inen kolonda intusepsiyona neden olan dev lipomu vardı. Lipom kolonoskopi ile tespit edildi ve histolojik incelemede lipom tanısı konuldu, takiben elektif koşullarda tek port laparoskopik sol kolektomi ile ameliyat edildi. İntraoperatif ve postoperatif komplikasyon gelişmedi. Hasta postoperatif dördüncü günde sorunsuz olarak taburcu edildi.

Anahtar kelimeler: Lipom, kolo-kolonik intussepsiyon, tek kesi

INTRODUCTION

Since the first reports in the early 1990s [1], laparoscopic colectomy has resulted in reduction of postoperative pain, earlier return to oral intake, and shorter length of stay [2]. These advantages have driven a demand for progressively less invasive techniques. Traditionally, laparoscopic colorectal surgery required multiple surgical access sites with the associated risk of incisional complications, such as hernia and infection, and postoperative pain due to abdominal wall trauma. Furthermore, some patients find the cosmetic outcomes of multiport surgery unsatisfactory. Recently, minimally invasive, single-port laparoscopic techniques have been developed aimed to improve clinical and cosmetic outcomes. After first being described in 2008 [3], single-incision laparoscopic colectomy has emerged as a viable method of minimally invasive surgical treatment of benign and malignant colorectal diseases. The colonic lipoma is a common benign tumor of colon next to the hyperplasic and adenomatous polyps [4]. Most of the colonic lipomas

Department of Surgery, Faculty of Medicine, Selçuk University, Konya, Turkey

Yazışma Adresi /Correspondence: *Fahrettin Acar,*
Department of General Surgery, Selçuk University, Faculty of Medicine, Selçuklu, Konya, Turkey Email: drfacar@hotmail.com
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are asymptomatic in small size, but about 30% of them reaches 2 cm or larger size and may produce symptoms such as anemia, abdominal pain, constipation, diarrhea, bleeding, or intussusceptions [5]. Lipomas of the colon smaller than 2 cm by endoscopy, while those larger than 2 cm by laparotomy or laparoscopic approach can be preferred. We report a case of chronic abdominal pain due to descending colonic intussusceptions caused by giant descending colonic lipoma, which was managed successfully by single port laparoscopic the left colectomy.

CASE

A 38-year-old female patient visited our hospital because of intermittent abdominal pain and dyspepsia, which started a month before. Her medical history was nonspecific. The blood pressure was 110/70 mm Hg, pulse 84/min, respiration rate 18/min, and body temperature 36.5°C. There were no specific findings in physical examination. Complete blood count results showed white blood cell 10,400/mm^3, hemoglobin 12.6 g/dL, and platelet 260,000/mm^3. The blood chemistry was analyzed as total protein 7.4 g/dL, albumin 4.2 g/dL, total bilirubin 0.45 mg/dL, AST 20 IU/L, ALT 14 IU/L, ALP 55 IU/L, BUN 16.5 mg/dL, serum creatinine 0.9 mg/dL, total cholesterol 170 mg/dL, and fasting blood glucose 90 mg/dL. The carcinoembryonic antigen level was 2.1 ng/mL. In the colonoscopy, a large hyperemic round mass occupying more than three-quarters of the lumen was observed at the proximal descending colon. The mass was covered with large superficial ulcer with small exposed blood vessels, and was firmly originated at the counter-mesenteric border side of 10 cm distal part of splenic flexura, suggesting gastrointestinal stromal tumor (Figure 1). In the abdominal computed tomography (CT) on the next day, a concentric multi-layered mass was shown at the proximal descending colon, which extended to sigmoid colon along the shortened descending colon, about 6×5 cm low density mass on the proximal descending colon was observed (Figure 2). Although the colonoscopic findings were not typical for lipoma, she was diagnosed with descending colo-colonic intussusception caused by unusual giant lipoma originated at the proximal descending colon. She was deemed to require a surgery, which led to the left colonic resection. In the excised colonic specimen, around 6.5×5.5×4.5 cm of polyploidy mass of clear boundary was observed (Figure 3). On microscopic examination, the mass consisted of matured fatty cells, and there was no evidence of malignancy, thus it was diagnosed to be a lipoma (Figure 4). She was discharged without special complications after the surgical operation.

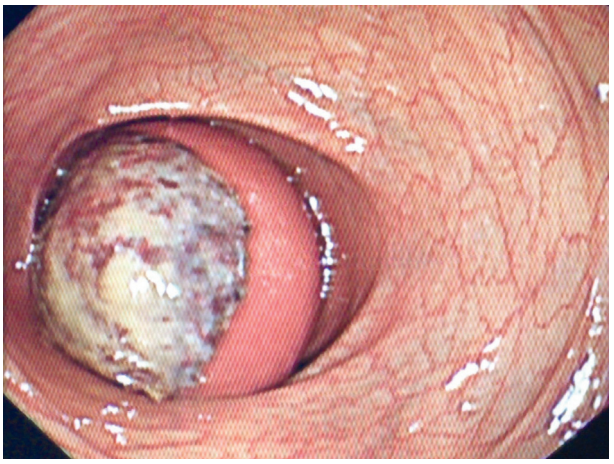

Figure 1. Colonoscopy: Huge, round, hyperemic mass covered with superficial ulcer is observed at descending colon. On the center of ulcer, the exposed vessels are seen. The lesion almost obstructed the whole lumen.

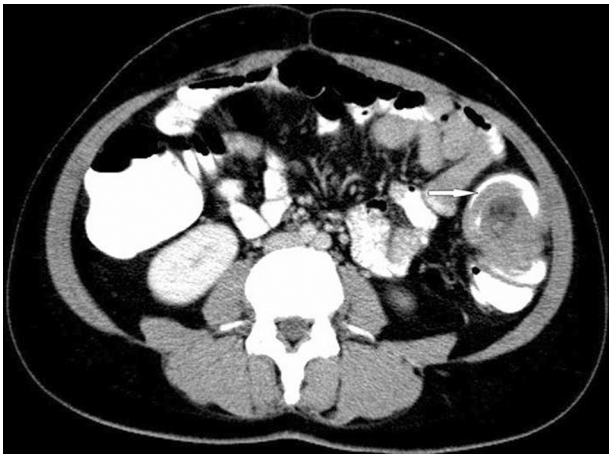

Figure 2. Computed tomographic scan demonstrating the target sign in a colo-colonic intussusception

Surgical technique

The patient was placed in the lithotomic position. The surgeon and the first assistant stood on the patient's right side. A SILS TM Port (12 mm, Covidien AG, Norwalk, Connecticut, USA) (Figure 5) and a Multiport Channel Single Port (Quad Port, Advanced Surgical Concepts, Dublin, Ireland) were used in the case. The Multiport Channel single Port was used to insert additional 15 mm trocar beside the

camera port for inserting the linear stapler. Colorectal junction and left-colon suspension and exposition were achieved by placing transparietal stitches on the mesentery with a 5-mm grasper (CEV 9625-1B, MicroFrance, Saint Aubin le Monial, France). Mesocolic dissection and inferior mesenteric pedicle isolation were achieved with a 5-mm laparoscopic monopolar hook dissector (Richard Wolf), scissors (Microline PENTAX, Beverly, MA), LigaSure vessel sealing system (Valleylab, Boulder, CO), and right-angle dissector (Elmed, Addison, IL). Inferior mesenteric vascular pedicle control was achieved with the LigaSure vessel sealing system. Complete retroperitoneal and parietal peritoneal resection and omental and left-angle ligament dissection were performed with the hook dissector, scissors, and LigaSure system. Distal bowel section through the upper rectum was performed with an endoscopic linear stapler (Endopath, Ethicon Endo-Surgery). The specimen and proximal left colon were exposed through the umbilical port. Extracorporeal preparation of the proximal colon was completed with stapler anvil placement for side-to-end colorectal anastomosis according to the technique described by Bucher et al.[5] After pneumoperitoneum reestablishment, a conventional side-to-end colorectal anastomosis was achieved by transanal insertion of a circular stapler (Proximate ILS circular stapler, Ethicon Endo-Surgery). Intra-operative anastomosis testing through an air test was satisfactory. The total operative time was 105 minutes. The final diagnosis revealed a giant lipoma. No intraoperative or postoperative complications were recorded. A normal low-residue diet was started on day 1. The patient is well five months after surgery.

Figure 3. Gross findings: The polypoid submucosal mass is identified in the descending colon.

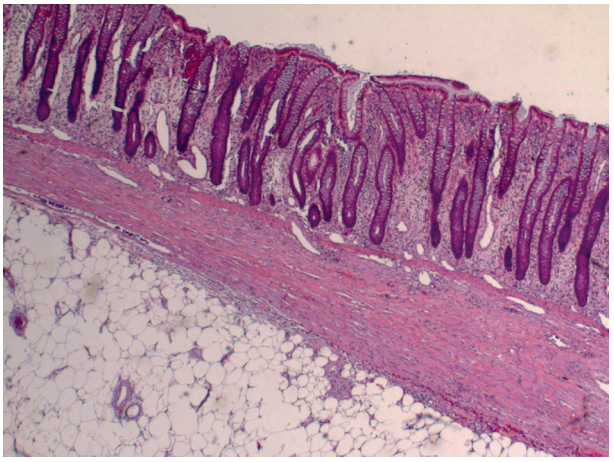

Figure 4. Histopathology showed that the lesion was located in the submucosa, of adipose origin, and was complicated with necrotic tissue and granulation on its surface (HE,×100).

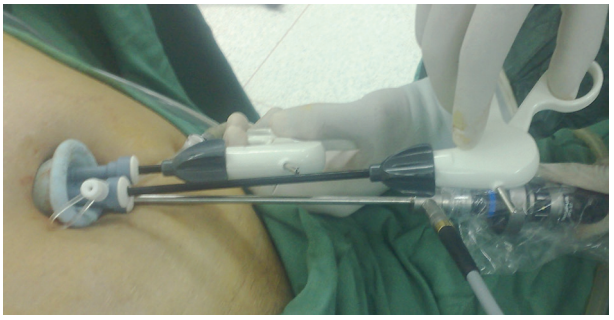

Figure 5. Transumbilical trocar placement

DISCUSSION

Lipoma often occurs as a solitary mass but 10% to 25% of cases carry multiple masses [6]. A larger lipoma may cause obstruction and intussusception, which leads to symptoms in most cases, and when lipoma is accompanied by mucosal changes, it may be mistaken for an adenoma or malignant tumor, and sometimes causes a mucosal ulcer resulting in bleeding [7]. Intussusception is a common cause of ileus in children, but it rarely occurs in adults; about 80% of adult cases are caused by mass lesion such as a large polyp. In particular, it is known that 66% of colonic intussusception results from malignant tumors [8]. The lipoma in this patient's case was found at the descending colon in the colonoscopy without intussusception, while the abdominal CT observed it in the proximal part of descending colon with intussuscepted state on the next day. This suggests spontaneous air reduction during colonoscopic

procedure or repeated spontaneous intussusceptions and reductions by colonic peristalsis causing intermittent recurrent abdominal pain at each event. Although lipoma was considered in the abdominal CT, the colonoscopic findings suggested a malignant GIST rather than a lipoma. The firm hyperemic surface mucosa unlike lipoma might be due to mucosal damage caused by repeated intussusceptions and peristaltic forces, and superficial mucosal ulceration and exposed vessel would be made at some stage.

The available literature on single-incision laparoscopic surgery suggests that it is a promising alternative to conventional laparoscopic surgery. Since the first reports on Single-incision laparoscopic surgery (SILS) in 1997 for cholecystectomy [9] and appendectomy, the applications have been varied, including in urology, adrenalectomy, bariatric procedures, and hernia repairs. Various techniques have been developed for use during laparoscopic colectomy to decrease parietal trauma and improve cosmetic results [10]. Further efforts to avoid the need for skin incisions have led to the development of techniques such as natural orifice transluminal endoscopic surgery (NOTES) and single-port access (SPA) surgery[11]. Transumbilical SPA surgery is a rapidly evolving field that combines in part the cosmetic advantage of natural orifice transluminal endoscopic surgery with the ability to perform the operation with standard laparoscopic instruments. The SILSTM port is a flexible, latex-free laparoscopic port that can accommodate up to three instruments through a single incision, typically in the umbilical area. This port was easily placed and managed to provide a relatively good seal with adequate pneumoperitoneum during both right- and left-sided resections. In addition, the SILSTM port facilitated the easy exchange of 5- and 12-mm ports during the procedure. Postoperative pain and recovery appear to be improved by a single port approach.30 In addition; a single access may reduce the risks associated with port placement and incidence of incisional hernia [12]. Among the potential advantages of SPA left colectomy compared with standard laparoscopic colectomy, cosmetic is an important factor [13]. In the present case, a liquid diet was initiated in the morning of the day after surgery. The patient was discharged on the fourth postoperative day. The mean operative time was 105 minutes and the wound size of 2.5 cm. These findings are compatible with the large series recently published in the literature [14]. In conclusion, single-port access left colectomy is feasible and appears safe when performed by experienced laparoscopic surgeons.

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