A case of simultaneous hernia repair and single-incision laparoscopic colectomy for cecum tumor using surgical globe port settled at a fascia defect of the incisional hernia

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Abstract

We experienced a case of simultaneous operation of SILS (single-incision laparoscopic surgery) colectomy using fascia defect and the primary suture repair for incisional hernia. An 89 year old male patient was visited our hospital for the purpose of surgery for the incisional hernia. Before surgery, he was diagnosed as suspiciously cecum cancer. SILS using the fascia defect was performed for simultaneous hernia repair by the primary suture repair to avoid a mesh infection. For the repair of the hernia, the primary suture was performed using the delayed absorbable monofilament suture. Postoperative course was uneventful, then he discharged on 9th day after surgery. More than 3 years passed after surgery, no symptom of recurrence of cancer and hernia was observed by the clinical and imaging findings. It might be possible and important to obtain a satisfied treatment by selecting the most appropriate surgical procedure for each individual.

Keywords: single-port laparoscopic surgery, incisional hernia repair, surgical globe port

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Introduction

Incisional hernia is common after abdominal operation occurring in less than 10% of cases after open surgery¹⁾. The mainstream of the procedure for the hernia repair is using mesh because of the high recurrence rate after primary suture repair²⁾. However, in the case of gastrointestinal surgery including colorectal surgery co-existing with incisional hernia, the use of mesh for hernia repair is hesitant when considering the risk of infection^{3,4)}.

An elderly patient preferred for the purpose of incisional hernia repair was pointed to a colon tumor. We herein report a case more than 3 years passed without recurrence of incisional hernia after the performance of single-incision laparoscopic colectomy for colon tumor and primary closure for incisional hernia.

Case report

A male octogenarian (89 year old) was visited our hospital with complaint of an increase protrusion of

abdominal viscera. In his past history, he underwent transverse colectomy for the transverse colon cancer over 10 years before. Although one year after that surgery, he noticed the abdominal protrusion at the incisional line, he did not consult us. However, he visited because of recently increasing size of protrusion. Before surgery, surveillance colonoscope was performed. Colonoscopic findings revealed the lateral spreading tumor sized in 40 mm diameter at the cecum (Fig. 1) that is positive for non-lifting sign. Pathological diagnosis of biopsy was tubular adenoma, moderate atypia. Abdominal computed tomography (CT) revealed an about 5 cm fascia defect of abdominal wall and prolapse of the intestine (Fig. 2A). CT angiography showed the existence of right colic artery and ileocolic artery (Fig. 2B). The strategy was decided that simultaneous surgery for colon resection and hernia repair should be performed. A single-incision laparoscopic surgery (SILS) using the fascia defect was planned for simultaneous hernia repair by the primary suture repair to avoid a mesh infection. Mini-laparotomy was performed by a skin incision above the part of the fascia defect. After creation of surgical globe port using double plastic protector, 3 trocars were inserted for the operation. After the laparoscopically mobilization of the cecum and the ascending colon from the retroperitoneum, ligation of the ileocolic vessels, resection

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Fig. 1 Colonoscopic finding shows a lateral spreading tumor sized 40 mm large at the cecum.

Fig. 2 Abdominal CT shows an incisional hernia (A)(white arrow). CT angiography shows that the right colic artery and the ileocolic artery were remain (B) (white arrow head).

of the colon and reconstruction using linear stapler. For the repair of the hernia, hernia sac was resected and the primary suture was performed using the delayed absorbable monofilament suture. The specimen was diagnosed as adenocarcinoma in tubulovillous adenoma, 4 mm sized cancer focus in 30 x 18 mm sized adenoma, Locus C, depth M, ly0, v0, Tis, N0, M0 fStage 0. Postoperative course was uneventful, then he discharged on 9th day after surgery. More than 3 years passed after surgery, no symptom of recurrence of cancer and hernia was observed by the clinical and imaging findings.

Discussion

The incidence of the incisional hernia after abdominal surgery was reported to be less than 10%. Wound infection and high BMI are identified as the risk factors for incisional hernia¹⁾.

A variety of surgical techniques are used for the repair of incisional hernias with or without mesh. The main techniques range from primary approximation of the defect with mesh used as an onlay, underlay, or as a bridging patch, to tissue separation techniques such as the anterior component separation technique and transversus abdominis release⁵⁾. Although a laparoscopic approach for the hernia repair is increasing, the short and long-term outcomes of laparoscopic and open abdominal wall hernia repairs are equivalent. Both techniques are safe and credible and the outcomes are very comparable⁶⁾.

The infection rate of the mesh used for the incisional hernia was about 10%³⁾. Patients undergoing incisional hernia repair with concomitant intra-abdominal procedures have a greater than 6-fold increased hazard of subsequent mesh explantation due to infection. Permanent prosthetic mesh should be used with caution in this setting⁴⁾.

In our case, an incisional hernia repair was originally intended for surgery, however a colon disease that should be needed resection was found. For colon resection, laparoscopic approach should be selected based on less invasiveness under consideration of his extremely high age. Then SILS using the defect of fascia was performed. There is one report of the SILS using the fascia defect for the resection of abdominal wall schwannoma⁷⁾. Although

our main procedure for the incisional hernia repair is a laparoscopic fascial defect closure with intraperitoneal onlay mesh (IPOM-Plus), we chose the primary suture repair to avoid mesh infection because of the simultaneously colon resection. As a result, there has been no symptom of the recurrence of both colon cancer and incisional hernia.

Conclusion

We experienced a case of simultaneous operation of SILS colectomy using fascia defect and the primary suture repair for incisional hernia. It might be possible to obtain a satisfied treatment by selecting the most appropriate surgical procedure for each individual.

Conflict of interest:

All authors declare no conflict of interest related of this publication.

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