A case of tubular adenoma of the vermiform appendix resected by Single Incision Laparoscopic Surgery

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**Key Words** Adenoma, appendix

**Introduction**

In colonoscopy, we sometimes encounter small lesions which are not perfect for endoscopic resection due to the location. Here we report an adenoma at the orifice of the vermiform appendix successfully treated by Single Incision Laparoscopic Surgery (SILS).

**Case report**

A 52-year-old man underwent colonoscopy for positive result of fecal occult blood test. The patient was free from any abdominal symptoms. Blood test showed no abnormality. CEA and CA19–9 were negative. Colonoscopy revealed an Isp polyp (3 mm in size) at the transverse colon and a polypoid lesion at the orifice of the appendix (Color 1, 2). The polyp at the transverse colon was resected by endoscopic mucosal resection (EMR). The lesion at the orifice of the appendix did not seem to be malignant, however, it was impossible to see the lesion in its entirety despite some effort to pull out by forceps or aspiration. Therefore we did not consider that EMR is suitable for the lesion, and the patient was referred for surgery.

SILS was performed for the lesion. Under general anesthesia, 3 cm of skin incision was made at the umbilicus to insert a versatile port (SILS port\(^{\circ}\), Covidien Japan). An endoscope and two of 5 mm ports were used during the procedure (Fig. 1). The vermiform appendix with the base of the cecum colon was resected by endolinear stapler (Fig. 2). Before finishing the operation, complete resection of the lesion was macroscopically confirmed, and the lesion was confirmed not to be malignant at frozen section. The post operative course was uneventful, and the patient discharged on 7th post-operative day.

The lesion was a tubular adenoma of the vermiform appendix with low to high grade dysplasia (12 × 15 mm in size) (Fig. 3).

**Discussion**

Classical tumors of the vermiform appendix are carcinoids, mucinous cyst adenomas, and adenocarcinomas. Appendiceal tumors are found in 0.5% of resected appendix\(^{\circ}\). There is an interesting report that 4% of the patients with colon cancer had synchronous appendiceal neoplastic lesions\(^{\circ}\). On the other hand, appendiceal adenoma has not been recognized so well before common use of colonoscopy. It is impossible to see the entire lumen of the vermiform appendix except for some special situation such as inverted appendix. However, it is important for colonoscopists to see the orifice of the appendix carefully for early detection of lesions in the appendix. Other modalities such as CT would also be helpful. Adenomas of the appendix are classified as tubular adenoma, tubulovillous adenoma, villous adenoma, or serrated adenoma\(^{\circ}\). Most of the appendiceal carcinomas were associated with appendiceal adenomas, but genetic alterations in appendiceal carcinomas might differ from colorectal carcinomas\(^{\circ}\). Serrated adenoma is notable in the serrated neoplasia pathway of colorectal carcinoma\(^{\circ}\).

The present case is the 36th case report of adenoma of the vermiform appendix in Japan (Table 1). Those included 26 males and 10 females, and the median age at the diagnosis was 55. Histology includes 17 tubular adenomas, 10 villous adenomas, 4 tubulovillous adenomas, and 3 serrated adenomas. The median size was 3 mm. One third of those were coincidentally found in resected appendix. All the cases except for one with polypectomy were surgically resected. Reasons for operation included appendicitis, bleeding, intussusceptions, and being
unresectable by endoscopic procedure. Among them, most of the recent surgery was laparoscopic procedure. SILS is one of laparoscopic procedures, which was developed for more versatile laparoscopic surgery and introduced in late 1990s. SILS uses one small port, which will contribute to reduced pain and smaller wound after operation, and contributes patients’ quality of life. Currently SILS is mostly applied for appendectomy and cholecystectomy. Full colectomy is also tried by SILS. However, large randomized controlled trials are needed to assess safety and efficacy of SILS comparing with conventional laparoscopic surgery.

References