PSUMJ
PSU MEDICAL JOURNAL

Short Report

A Case Report of the Herniation of the Appendix Through the Abdominal Wall Defect Presenting with Appendico-Cutaneous Fistula

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ABSTRACT

Objective: To report a case of the herniation of appendix through the abdominal wall defect presented with appendico-cutaneous fistula.

Material and Methods: This study was designed as a retrospective chart review using patient's clinical data, imaging, endoscopic report, and treatment review.

Results: A 70-year-old male patient with a surgical history of small bowel resection due to small bowel intussusception 60 years ago presented with purulent discharge oozing from his surgical scar for two months. The diagnosis of appendico-cutaneous fistula was made by abdominal computer tomography scan and colonoscopy. The laparoscopic assisted open approach for appendectomy and abdominal wall repair was performed successfully.

Conclusion: The herniation of the appendix through the abdominal wall defect is uncommon. Very few cases have been reported. We presented a successful treatment of a patient who presented with appendico-cutaneous fistula from appendiceal herniation via incisional hernia.

Keywords: appendico-cutaneous fistula; appendix; incisional hernia

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E-mail: pwying@hotmail.com
doi: 10.31584/psumj.2022252606
https://he01.tci-thaijo.org/index.php/PSUMJ/

PSU Med J 2022;2(2):51-54
Received 27 January 2022
Revised 5 February 2022
Accepted 5 February 2022
Published online 19 May 2022

INTRODUCTION

The formation of appendico-cutaneous fistula and the herniation of appendix through the incisional hernia are both uncommon medical situations. The literature review showed only 1% of all hernias having appendix as a content.[1] The diagnosis of an appendix herniated through the incisional hernia is challenging due to the indistinct clinical presentation if there is no inflammation. We are presenting a case report of appendico-cutaneous fistula as a consequence of appendix herniation through incisional hernia of the McBurney incision.

CASE REPORT

A 70-year-old man presented with yellowish discharge oozing from his surgical scar for two months. It flew out about 20 ml/day. The patient was afebrile. He experienced neither anorexia nor abdominal pain.

The patient had a history of surgery for intussusception 60 years ago. At the beginning, he was diagnosed with appendicitis. The surgeon made McBurney's incision then the diagnosis of small bowel intussusception was made. The surgeon performed a paramedian incision to perform a small bowel resection. The operation went well, and no postoperative complications.

On the examination of his abdomen, there was turbid purulent discharge from the surgical scar at the right lower quadrant without any abdominal tenderness. (Figure 1A, B)

Computed tomography scan with contrast of the whole abdomen revealed a defect at the RLQ anterior abdominal wall with the appendix approaching the surface. (Figure 1C) A diagnosis of appendico-cutaneous fistula was made. There was neither abscess formation nor inflammatory change of the adjacent bowel loops. The colonoscopy was done and demonstrated the normal appendiceal orifice in which small amount of gas could pass through the orifice to the skin.

The laparoscopic assisted open approach for appendectomy and abdominal wall repair was planned. Pneumoperitoneum was created by Veress needle at the Palmer's point. Trocars were introduced as Figure 2A. First, adhesiolysis was done until the base of appendix was found. (Figure 2B) We clipped the appendix with the 12 mm clip and did appendectomy. Then we excised the fistula tract from the skin via an open approach. The abdominal wall defect size about 1.5 cm was repaired with No.1 monofilament non-absorbable suture interrupted fashion. Finally, we closed the 12 mm trocar defect with 2-0 monofilament non-absorbable suture via suture passer.

The operative time was 1 hour with minimal blood loss. The patient was discharged on postoperative day 2 with a VAS pain score of 1. Upon the follow up examination 2 weeks after the operation the wound was completely healed. At 2-month, 6-month, and 1-year follow-up patient had no complaint of any symptoms.

The histopathological examination revealed appendico-cutaneous fistula, and no histologic malignancy or inflammatory bowel feature was seen.

DISCUSSION

This is the first case report of the herniation of the appendix through the abdominal wall defect presenting as appendico-cutaneous fistula. This is a rare presentation of a rare situation. Typically, the clinical presentation of abdominal wall defects will be presented within the first 5 years.[2] The patient was asymptomatic for more than 60 years because the content of the hernia was an appendix. This patient's symptoms has just presented two months before seeing the doctor due to the appendiceal fistula formation to the skin. In general, the treatments of enterocutaneous fistula are conservative, endoscopic, and surgical management. We managed to perform appendectomy with resection of the fistula tract. We performed a laparoscopic approach for defect exploration,

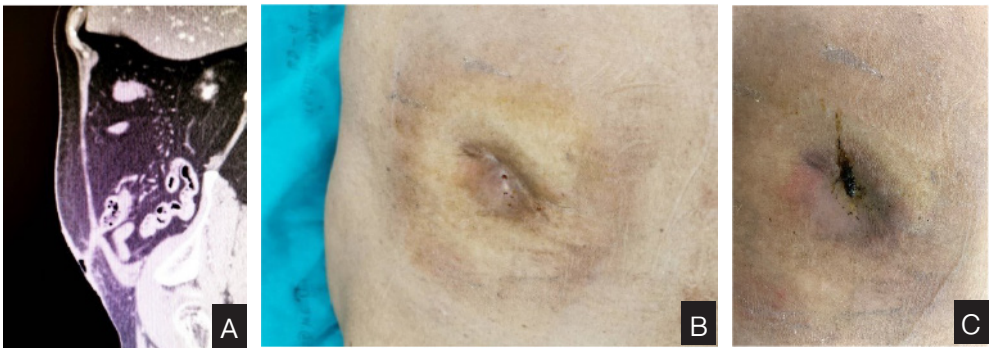

Figure 1 (A) Small skin defect at surgical scar (B) Feculent discharge from this defect (C) Computed tomography scan show appendix through the defect causing the appendico-cutaneous fistula

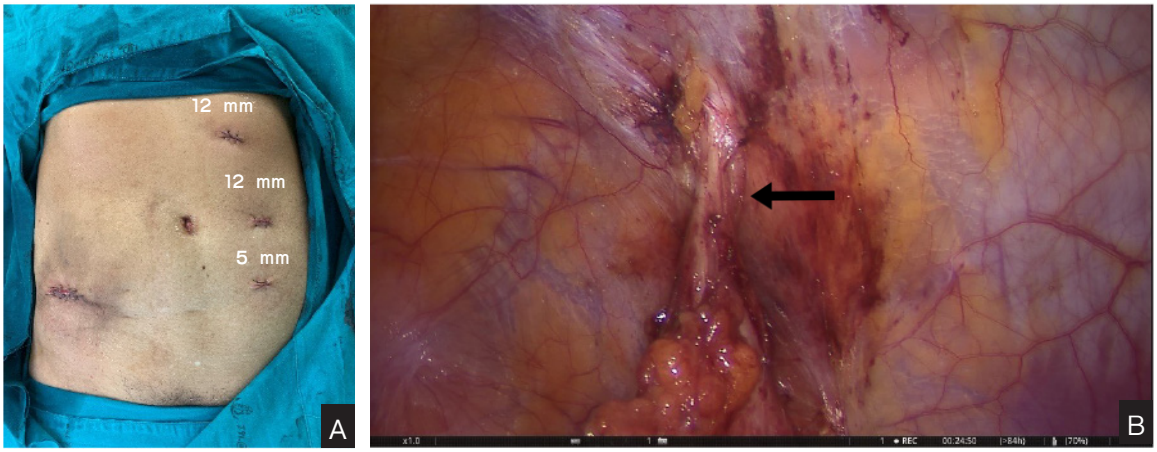

Figure 2 (A) All incisions for the laparoscopic assisted appendectomy with fistula tract excision (B) The appendix herniated through the small abdominal wall defect (arrow)

appendectomy, lysis adhesion and proximal fistula tract resection. The benefit of laparoscopic view are easier lysis adhesion and smaller incision for distal fistula tract excision. We decided to repair the minor abdominal wall defect with non-absorbable sutures instead of mesh repair in order to avoid surgical site infection.

The evidence of incisional hernia following an appendectomy showed the incidence of 0.12-0.7%.[3-5] The most commonly found content in the hernia sac is colon.[3] There are two types of incisional hernia following an appendectomy. First, the common type, the hernial content pass through the defect of the abdominal wall. The later type, the interstitial type, which the external oblique aponeurosis is intact, but the content herniates through the weakness of the internal oblique and transversus abdominis muscle. Our patient had the common type, as shown in the imaging.

The incidence of the herniation of appendix to inguinal hernia (Amyard's hernia) was 1% (0.19-1.7%) of all inguinal hernia.[6,7] Of this patient group, the incidence of appendicitis in the hernia sac was about 0.07-0.13%.[8] Only 0.1% of incarcerated appendix in the inguinal hernia

presented with perforated appendicitis.[9] There have been few case reports about the appendix in the incisional hernia.[10] All of the patients in those report were presented with appendicitis. There was a report of rupture appendicitis which pathological result showed Crohn's disease.[11]

Appendico-cutaneous fistula is also a very rare condition.[12,13] This condition is mostly presented after appendicitis perforation or after drainage of the appendiceal abscess.[14] There was also a report of appendico-cutaneous fistula after inguinal hernia repair with a mesh graft.[15] The pathological report of our case showed no evidence of inflammation of the appendix. Treatment of appendico-cutaneous fistula is more straightforward compared to other enterocutaneous fistula. Total excision of the fistula tract and appendectomy is the mainstay of operative procedure.

CONCLUSION

The herniation of the appendix through the abdominal wall defect is uncommon. Very few cases have been reported. We presented a successful treatment of a patient who presented with appendico-cutaneous fistula from appendiceal herniation via incisional hernia.

AVAILABILITY OF DATA AND MATERIALS

All data generated or analyzed during this study are included in this published article.

CONFLICT OF INTEREST

The authors declare no conflict of interests for this article.

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