CASE REPORT

Appendico-cutaneous fistula 20 years after groin hernia repair with a polypropylene plug

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SUMMARY

The formation of an appendico-cutaneous fistula is rare. Few case reports have been published; most describe the formation of a fistula after appendicitis. Here we describe the case of a 79-year-old woman presenting with an appendico-cutaneous fistula after groin hernia repair. She was referred to our outpatient department with a painful mass in the right groin. An ultrasound showed a fluid containing mass. Incision and drainage was performed. After 9 weeks she was referred again with a persisting open wound. Fistulogram and CT scan showed a fistulous tract involving the appendix. Wound culture showed *Escherichia coli*. Diagnostic laparoscopy showed an appendix stuck to the ventral wall of the abdomen without any sign of previous infection. After an appendectomy, pathological investigation revealed an appendix sana. After operation, the fistula persisted due to a polypropylene plug from the previous groin hernia correction. The (infected) plug was removed and the fistula healed.

examination was performed which showed a partly solid, partly fluid containing mass. A diagnostic puncture showed pus. With the differential diagnosis of hidradenitis, incision and drainage of the abscess was performed, with the wound left open for secondary healing. At first, this seemed to be healing well and she was dismissed from further follow-up. After 9 weeks she was sent in again by her GP with a persistent producing open wound.

INVESTIGATIONS

A fistulogram was performed and reported a sub-cutaneous sinus (figure 1). CT scan showed a fistulous tract connection involving the appendix (figure 2A,B). The wound culture showed an *Escherichia coli*, which confirmed the connection with the intestinal tract.

TREATMENT

A diagnostic laparoscopy showed an appendix stuck to the ventral wall of the abdomen, most likely in a previous/former hernial sac. Interestingly, there was no sign of previous infection. An appendectomy was performed, and the fistula opening was left open for secondary healing. Pathological investigation revealed an appendix sana, with the top of the appendix missing and with no signs of previous inflammation. There were no old sutures found, proving that the appendix was not accidentally sutured into the hernial sac during the operation 20 years previously.

BACKGROUND

Most enterocutaneous fistulas are complications of surgery for peritonitis or due to perforated appendicitis, perforated duodenal ulcer or penetrating injuries of the abdomen.^{1 2} Seldom, enterocutaneous fistulas are the result of fistulisation of the appendix without any sign of inflammatory disease.³ Appendico-cutaneous fistulisation after groin hernia repair with synthetic material is a very rare diagnosis. Therefore, we want to present such a case and give a short update of the current literature.

CASE PRESENTATION

A 79-year-old woman was referred by her general practitioner (GP) to our outpatient clinic with a painful mass in the right groin. The initial consideration of the GP was lymphadenitis, for which antibiotics were started. Neither the pain nor the swelling disappeared. She was eventually referred to our hospital with the differential diagnosis of a groin hernia. The swelling had been present for 14 days and did not increase by the Valsalva manoeuvre. She was generally not ill and reported no fever. Her medical history reported a myocardial infarction, hypertension, hypercholesterolaemia, a hysterectomy and a previous right-sided groin hernia for which she was operated on 20 years previously.

The physical examination revealed a solid unreducible mass in the right groin, painful on examination, with a diameter of 2 cm. An ultrasound

Figure 1 Fistulogram.

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Figure 2 (A) Axial slice and (B) coronal slice of CT scan showing the appendix caught in the fistula.

OUTCOME AND FOLLOW-UP

During the postoperative period the fistula did not heal. Surgical exploration showed a polypropylene plug from the previous groin hernia correction as the source of the fistula. As the plug was in narrow relation to the pubic bone under the inguinal ligament and the vena femoralis, a femoral hernia correction rather than an inguinal hernia correction in the past must be presumed. The (infected) plug was carefully removed. After this operation the patient developed an intra-abdominal abscess in the right hypochondral area which was drained percutaneously. Two weeks later she returned to the clinic without any pain or fever. The fistula was dried out and the wound was properly healed without any signs of ongoing infection. She was dismissed from any further follow-up.

DISCUSSION

An intestinal fistula is an abnormal tract that communicates between the intestinal mucosa and another epithelial surface. Most enterocutaneous fistulas are complications from surgery for peritonitis or due to perforated appendicitis, perforated duodenal ulcer or penetrating injuries of the abdomen.^{1 2 4}

Seldom, enterocutaneous fistulas are the result of fistulisation of the appendix without any sign of inflammatory disease.^{3 5} Usually, when the appendix is involved in an enterocutaneous fistula, it is caused by the spontaneous rupture of an inflamed appendix.⁴ The fistula in this case report presented itself in the right lower quadrant of the anterior abdominal wall. There are however also cases reported where the fistula was perforated to the right flank or right buttock.^{6 7} This indicates that the location of the cutaneous opening gives no clue about the origin of the fistulous tract. To determine the source of the fistula track, the fistulogram is the golden standard. Unfortunately, due to pus in mucinous discharge in combination with a small fistula tract, the fistular connection is missed in a lot of cases.⁵ However, when viewing our fistulogram in retrospect, a connection between the fistula and the appendix seems clear. Next to this, a wound culture is helpful to diagnose the source of the fistula. An *E coli* suggests a connection with the lower intestine.

Learning points

- ▶ Appendico-cutaneous fistula formation after groin hernia repair with synthetic material is a rare but possible diagnosis.
- ▶ A fistulogram or CT may confirm the diagnosis but negative findings do not rule it out.
- ▶ Appendectomy, excision of the fistula tract and removal of the prosthetic material is the choice of treatment.

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Competing interests None.

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