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CASE REPORT

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Colocutaneous fistula due to polypropylene mesh

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Abstract Fistulae due to polypropylene mesh are known to occur if the prosthetic mesh is placed close to a hollow viscus. Some cases of enterocutaneous fistula have been reported but there are few cases of fistula affecting the large bowel. It is important to recognize these cases because they are severe complications of the prosthesis and difficult to manage. We present a case of colocutaneous fistula caused by fragmentation of polypropylene mesh and erosion into the sigmoid colon after recurrent incisional hernia repair.

Keywords Colocutaneous fistula · Polypropilene mesh · Morbidity · Incisional hernia repair

Case report

The patient is a 69-year-old obese woman with a few medical antecedents (arterial hypertension, syndrome of "toxic oil"), and several prior surgical procedures (hepatic hydatid cyst resection, cholecystectomy, two primary closures of umbilical hernia with ileocaecal resection in the second one because of ischemia, and incisional hernia repair using a polyproplylene mesh (Marlex) 9 years later). The incisional hernia was supra- and infraumbilical and the mesh was fixed with nonabsorbable sutures in preperitoneal position.

The patient came to our emergency department complaining of a draining fecal tract in the lower abdomen adjacent to the incisional hernia, (Fig. 1a) and fever. An abscess was incised and a drain left in place. Parenteral antibiotherapy was started. Fistulography with Gastrografin injection was performed and revealed a fistula communicating with the skin and the large bowel (Fig. 2). Abdominal computed tomography (CT) scan revealed supra- and infraumbilical recurrence of incisional hernia with the presence of small bowel close to the skin (Fig. 3).

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The patient underwent surgery. A dermolipectomy was performed through lower transverse incision. The polypropylene mesh was found to be broken in several independent pieces along the abdominal wall and one of these fragments was found into the sigmoid colon causing the fecal fistula (Fig. 4). A sigmoid resection was performed with laterolateral mechanical anastomosis. The omentum was placed close to the peritoneum and the hernia sac in order to protect the abdominal wall repair from the hollow viscus. The incisional hernia was repaired with two Surgilene meshes (35×25 cm) (Welti-Eudel technique). The subcutaneous tissue was bathed with 2 ml of Tissucol.

In the postoperative period the patient presented with a right sided pneumonia and infection with necrosis of a 10×10-cm area in the left part of the incision. She was treated with antibiotics and was discharged 1 month later. She is asymptomatic after 1 year of follow-up (Fig. 1b).

Discussion

This is the third reported case of colocutaneous fistula due to polypropylene mesh [2, 3] following reconstructive surgery of the abdominal wall after incisional hernia. Enterocutaneous fistula is not as rare [1, 5]. The incidence of enterocutaneous fistula due to prosthetic mesh is reported to be higher in the subfascial (5.2%) than onlay (2.6%) position [5], and higher yet with large ventral hernias and obesity [2]. In the fecal fistula reported by Kaufman et al. the mesh was placed in the intraperitoneal position [3]. Mersilene mesh has been shown to cause a high incidence of enterocutaneous fistula (15.6%) and this fact has discouraged its use [5]. Marlex mesh has an incidence of fistula of 1.7% and Gore-Tex and Polypropylene have a zero incidence in published series [1].

The mean time for the development of fistulae was 3.3 years for Leber et al. [5] but they do not report if fistulae were from the small or large bowel.

In our patient the development of fistula probably followed the fragmentation of the mesh due to high tensile strength, obesity, and recurrent hernia. One fragment had a prolonged contact with the sigmoid colon and eroded it, resulting in abscess formation and subsequent fistula.

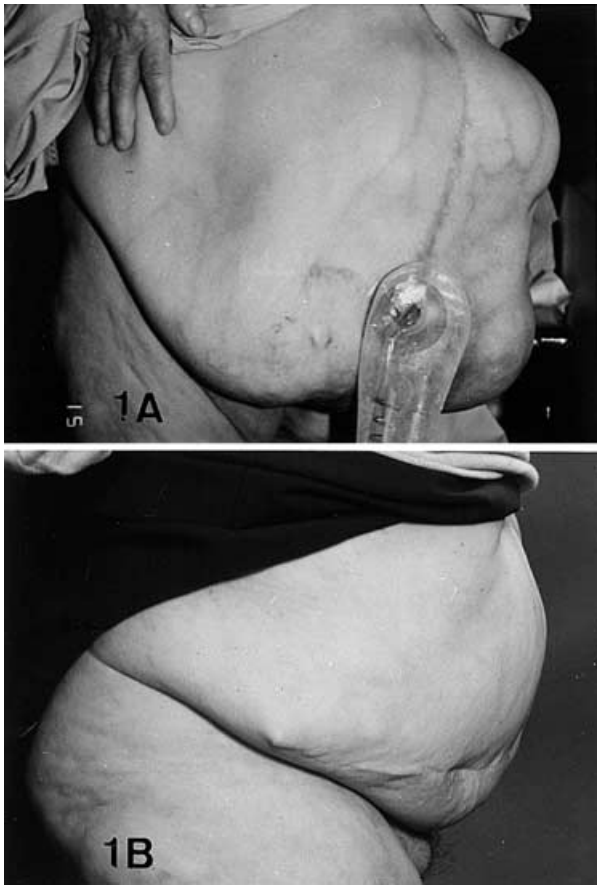

Fig. 1 This obese woman was our patient prior to reparative abdominal surgery (**A**), and after reparative abdominal surgery (**B**)

Fig. 2 Fistulography with Gastrografin injection where a fistula communicating with the skin and the large bowel is present

The diagnosis was made by colonoscopy in one case [2] and by fistulography in the other one [3], as it was in our case. In the fistulae involving small intestine the sinus tract has been found to be very hard to demonstrate. The diagnosis of fecal fistula can also be performed by ingestion of colorants (methylene blue, Charcoal,...), but this method is useless for localization of the fistula.

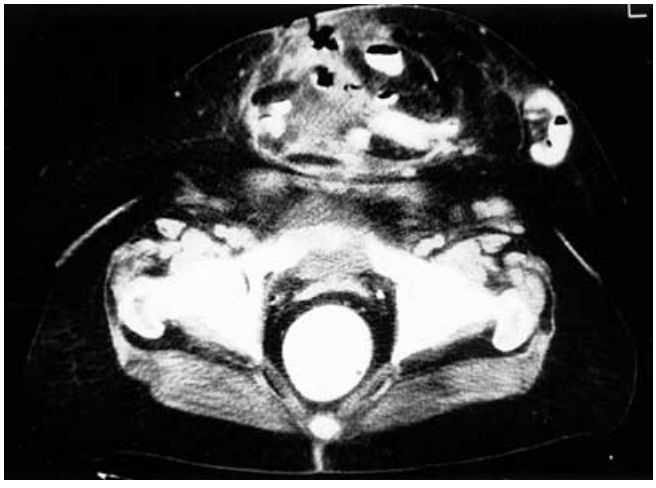

Fig. 3 CT scan with supra- and infraumbilical recurrence of incisional hernia

Fig. 4 A piece of the polypropylene mesh was found in the sigmoid colon causing the fecal fistula (*arrow*)

The treatment of this complication is surgical and depends of the inflammatory process in the area and the size of incisional hernia [4]. In some cases the fistula has recurred, mainly in small bowel fistulas (43%), and the management of these patients represents a challenge.

We think that the most important point is to prevent this complication by using a good technique with omental interposition, no excision of the hernia sac, and no fascial gap [5]. If possible, an extraperitoneal method of incisional hernia repair should be preferred.

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