

Enterocutaneous fistula in incisional hernia: unusual complication

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Abstract

Enterocutaneous fistula is defined as an abnormal communication between the intestinal lumen and the skin usually associated with abdominal surgeries, trauma, Crohn's disease, hernia mesh erosions and diverticulitis. We report a case of 46-year-old male, obese, referred to general surgery for enterocutaneous fistula in hernia sac. He had undergone exploratory laparotomy for gunshot wound to the abdomen 6 years ago where he underwent subtotal colectomy, splenectomy and terminal ileostomy with amputation of the rectal stump. In the current case report, obesity and surgical technique at laparotomy closure (a history of major exploratory laparotomy for gunshot wound) were the risk factors associated with the appearance of the fistula. Moreover, there was presence of midline incisional hernia with small bowel loops inside the hernia sac, which according to the European Commission Hernia Society should be avoided because it facilitates the formation of fistulas.

Keywords: Hernia ventral; Cutaneous fistula; Herniorrhaphy.

Introduction

Enterocutaneous fistula is defined as an abnormal communication between the intestinal lumen and the

skin usually associated with abdominal surgeries, trauma, Crohn's disease, hernia mesh erosions and diverticulitis. Its diagnosis and treatment are important because enterocutaneous

fistulae are accompanied by a mortality risk of 5% to 20% as they complicate approximately 10% of laparotomies [1].

This is a late manifestation of fascial closure failure in which the prosthesis used in hernia repair surgery comes into direct contact with the bowel and results in the fistula. Obesity, diabetes mellitus, liver cirrhosis, nutritional problems, advanced age in addition to surgical technique in laparotomy closure and suture abscesses are the main associated risk factors. Fluid collections, prosthesis-related infection, and fistulae are the most common postoperative complications, being 3%, 4%, and 3.5% respectively, as are pain, bowel obstruction, incarceration, and strangulation [2]. Its incidence is 2% to 20% after major abdominal surgery. However only 5.2% of its diagnosis is made in the first 12 months and 10.2% in the first 24 months [3].

As for hernia repair with prostheses, the European Commission Hernia Society suggests that midline incisions be avoided and the "protein absorption theory" becomes an explanation of the pathophysiology by inferring that the inside of the small bowel lumen incorporates the prosthesis [1].

Even with an almost 30% complication rate, monofilament polypropylene mesh is still the most commonly used in repairs. The body reacts to the installation of the synthetic mesh and creates a local inflammatory reaction or also called granulation or microerosions. Chronic inflammation of the abdominal wall develops a

circulatory disturbance and sustained ischemia that can complicate by an abscess and spread through the tissues succeeding in fistulas [4-6].

In the present case, we report the successful surgical treatment of an enterocutaneous fistula in an incisional hernia, demystifying the use of polypropylene mesh in the correction of complex defects with contamination.

Case report

A 46-year-old male, obese (BMI: 32,1Kg/m²), referred to general surgery for enterocutaneous fistula in hernia sac. He had undergone exploratory laparotomy for gunshot wound to the abdomen 6 years ago where he underwent subtotal colectomy, splenectomy and terminal ileostomy with amputation of the rectal stump.

Upon examination, the patient presented an enterocutaneous fistula inside the hernia sac for over 2 years (Figure 1) with enteric secretion at the site, and unsuccessful clinical treatment of the fistula. A computed tomography (CT) scan of the abdomen and pelvis revealed the presence of a midline incisional hernia with a wide neck (approximately 10 x 6cm in diameter) with the presence of loops of the small intestine inside the hernia sac and an external fistula.

The patient underwent incisional hernioplasty with resection of the fistula in bloc (Figure 2) with enterectomy of approximately 25cm of the small intestine with primary termino-terminal entero-entero anastomosis and ileo-rectoanastomosis for reconstruction of

the transect and preservation of the hernia sac with its reduction into the abdominal cavity.

We chose to perform separation of abdominal wall components (Figure 3) and placement of a 30 x 30cm

macroporous, heavy weight polypropylene mesh over the aponeurosis of the rectus abdominis (only) after dissection of the subcutaneous tissue (Figure 4).



Figure 1: Enterocutaneous fistula inside the hernia sac.

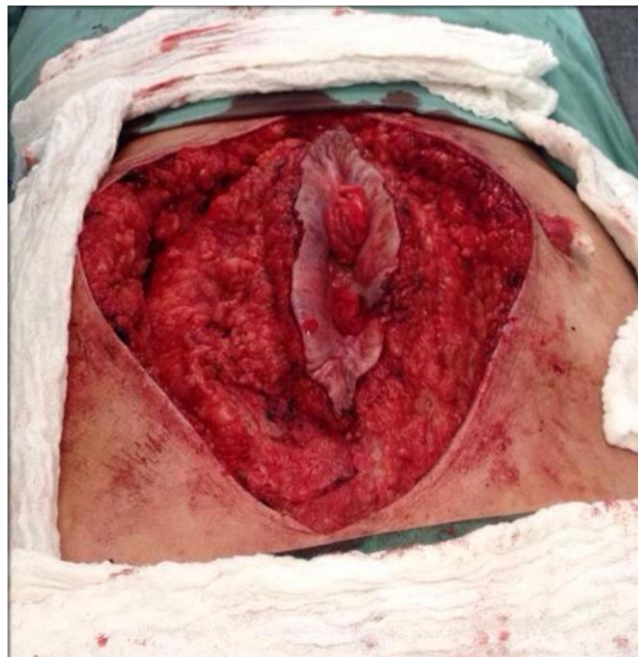


Figure 2: Incisional hernioplasty with en bloc resection of the enterocutaneous fistula.

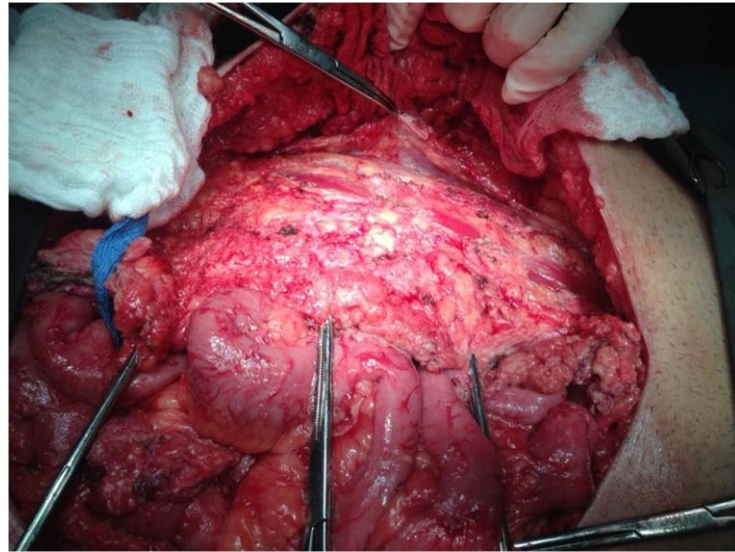


Figure 3: Hernioplasty with anterior separation of abdominal wall components.

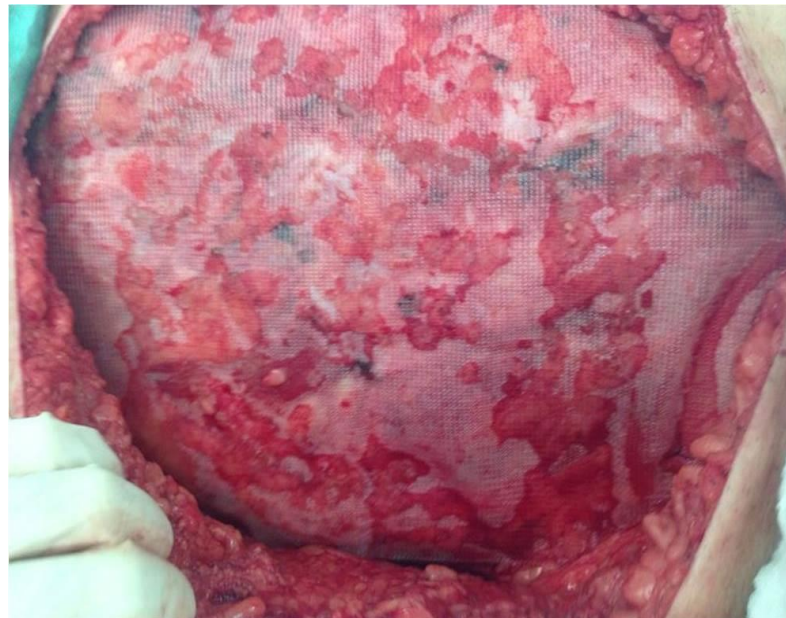


Figure 4: Placement of the polypropylene mesh over the anterior aponeurosis of the rectus abdominis (onlay position).

The patient was referred to the intensive care unit, where he remained under clinical observation for 48 hours, maintaining clinical stability. It was decided to maintain intravenous antibiotic therapy with cephalosporin of 3rd generation (ceftriaxone) and nitroimidazole (metronidazole) in

standard dose due to the risk of contamination and infection of the surgical dressing and surgical site.

The patient evolved satisfactorily without clinical or surgical complications. She walked on the second day and started respiratory and motor physiotherapy. She was

discharged on the seventh postoperative day with outpatient follow-up.

Discussion and Conclusion

Ventral incisional hernias are a common complication of laparotomy and presents as a risk factor the surgical technique in the insertion and closure of the surgery. In the case described, the patient has a history of an exploratory laparotomy in an emergency for firearm injury, and because it is an emergency the surgical technique may be compromised, increasing the risk of developing incisional hernia [2].

Enterocutaneous fistulas are defined as an abnormal communication between the intestinal lumen and the skin and is defined based on the anatomical origin or cause. They can be classified as low or high production based on the amount of drainage in a 24-hour period, this quantification is fundamental for defining the fistula and predicting the probability of closure, so that if necessary, a surgical intervention can be planned [1].

Fistulas are a known late complication in cases of repair with polypropylene mesh, especially when contact between the prosthesis and the intestine is inevitable, because when the intra-abdominal synthetic mesh comes into contact with the intestine, this may lead to adhesions, erosion and fistula formation. In the case described, this relationship does not occur because the patient has no previous surgeries with mesh placement [2, 5].

Bowel imaging (ultrasonography) helps not only in the diagnosis of the

fistula, but also in the discovery of obstructions. CT, on the other hand, is gaining increasing visibility because it is less invasive and can diagnose more causes / complications of enterocutaneous fistulas, besides facilitating the surgical anatomical decision by reducing the patient's exposure time in a surgery [6].

Complications of incisional hernias include pain, bowel obstruction, incarceration and strangulation, and the risk of requiring repeat surgery. Approximately 5.2% of incisional hernias were diagnosed in the first 12 months, while 10.2% of hernias were diagnosed in the first 24 months [3].

Enterocutaneous fistula is a late manifestation of fascial closure failure resulting from abnormal communication between the intestinal lumen and the skin associated mostly with abdominal surgeries.

In the current case report, obesity, surgical technique at laparotomy closure, and a previous history of major exploratory laparotomy for gunshot wound) were the risk factors associated with the appearance of the fistula. Moreover, there was presence of midline incisional hernia with small bowel loops inside the hernia sac, which according to the European Commission Hernia Society should be avoided because it facilitates the formation of fistulas.

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