Iatrogenic enterocutaneous fistula following a misguided surgical procedure in Torit, South Sudan

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Abstract

Groin hernia is common among active people in sub Saharan Africa. It contributes significantly to morbidity and mortality because of its unusual sac content. Various organs can be unexpectedly found in the sac when performing hernia repair surgery. Presence of the caecum in the sac is very uncommon. Enterocutaneous Fistula [ECF] is the worst complication that could occur following groin hernia surgery.

We report a rare case of iatrogenic ECF following an incarcerated right inguinal hernia repair done by a traditional healer which caused a cecostomy and subsequent ECF. A 50-year-old lady presented with ECF two weeks after undergoing right inguinal hernia repair. Clinically, and with an aid of abdominal sonogram, a diagnosis of ECF was made. She was successfully treated by caecectomy and primary repair, appendectomy, local debridement of the fistula site and Bassini's repair of the right inguinal hernia.

In cases like this every effort should be made to preserve the organ found in the hernia sac to ensure an uneventful postoperative period. ECF treatment depends on the type, site, and nature of the fistula.

Key words: groin hernia, inguinal hernia, enterocutaneous fistula, caecum injury.

Introduction

Open inguinal surgery is the most widely performed surgery worldwide. There are several surgical techniques, each with its own indications and contraindications.[1] Hernia surgery outcome is influenced by several factors including anatomy of the hernia, type of hernia, and patient-related factors. One possible complication is Enterocutaneous Fistula [ECF]. ECFs are abnormal communications between the gastrointestinal tract and skin. As a result, intestinal contents leak through to the skin.

Most of the cases of ECF are postoperative. Other causes include, infection, perforated peptic ulcer and inflammatory bowel disease.[2] They are associated with high morbidity and mortality. Even in the most experienced hands and specialized centres, mortality remains high at 5-15%.[3]

We report a case of iatrogenic ECF, and its diagnosis and management options in a resource limited setting.

Case Report

A 50-year old female presented with a right groin fistula of two weeks duration. She had noted a right groin swelling which was opened by traditional healers. The wound failed to heal and leaked pus. She noticed that a little faeculent material came from the wound site when she walked for some distance and decided to seek help from Torit State Hospital.

On examination her general health appeared good; temperature 37.2°C. There was a right femoral triangle sinus of 0.5 cm discharging pus overlying a firm mass of about 2cm in diameter. Abdominal examination was otherwise normal. An

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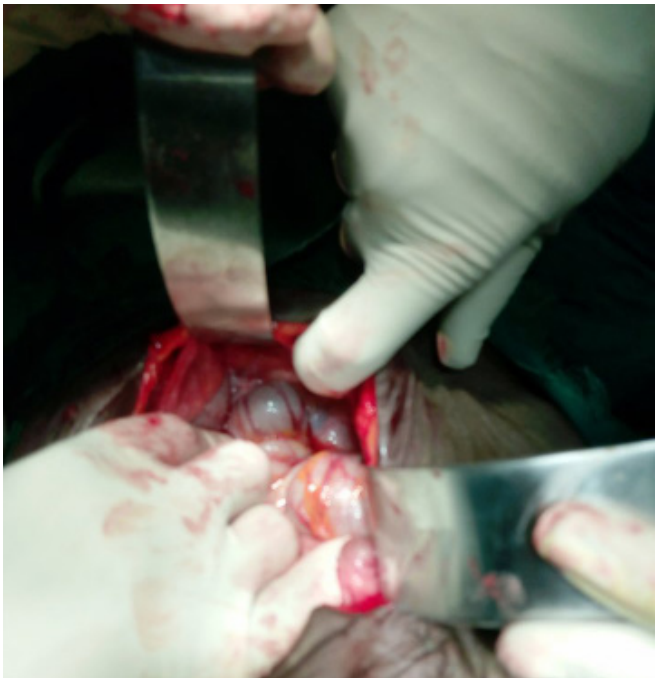

Figure 1. Caecum adhered to the external inguinal canal

Figure 2. Released caecum with the site of fistula

initial diagnosis of inguinal lymphadenitis was made. An abdominal X-ray and abdominal ultrasound were normal. Facilities for a fistulogram were not available.

On the assumption that an abscess had formed an incision was made into the mass. This revealed only pus which was irrigated with saline and packed. Oral antibiotics (Caps Ampiclox 500mg and metronidazole 500mg thrice daily for 3 days) and analgesic (Tabs ibuprofen 400mg twice daily for 3 days) were prescribed. The patient was then lost to follow up but resurfaced after three weeks with the same complaint of pus and stool discharging from the sinus.

This time there were two small sinuses present in the right groin with otherwise normal abdominal examination. A small amount of faeculent material came from the sinuses after walking indicating an enterocutaneous fistula. The patient was admitted. Abdominal ultrasonography revealed a right femoral enterocutaneous fistula. A femoral hernia strangulation seemed likely although we did include ulcerative colitis and Crohn's disease in the differential diagnoses.

An exploratory laparotomy was undertaken through a lower mid-line incision. A transverse inguinal incision was made when mobilizing the caecum became difficult. A small portion of the wall of the caecum was seen passing through the external inguinal ring (Figure 1). The caecum could not be released without freeing it from the adhesions created from previous surgery. Figure 2 shows the caecum with the ECF after release. Caecectomy with appendectomy were performed. The inguinal hernia site was repaired by the Bassini's method, and the abdomen was closed (Figure 3). Postoperative recovery was uneventful; the patient stayed in hospital for thirteen days.

Discussion

We report a case of iatrogenic ECF following a misguided surgical procedure. Most (85%) ECF's are iatrogenic in origin and 15% are spontaneous.[2,4] Most of the iatrogenic ECFs are secondary to trauma especially during operations for malignancy and extensive adhesiolysis in inflammatory bowel disease. ECF with caecum involved following inguinal hernia repair is rare.[1,4] They are usually seen in the small intestine as a result of an anastomotic leaked or following inadvertent injury to the gut.[1, 9]

The occurrence of groin hernia disease in Africa is great according to a study by Lofgren et al.[3] and outstrips the facilities available to cope. Some groin hernias are so complex that they require expert hands and experience.[2,4] ECF following groin hernia surgery is rare but can occur when the hernia is of sliding type or where a mesh plug was used and came in contact with the organ. Sliding inguinal hernias are unexpected findings during surgery and therefore technically difficult to manage especially in inexperienced hands.[4] Njeze found that majority of postoperative fistulae were operated on by non-trained surgeons, and most carried out in their private clinics.[5]

The exact pathophysiology of the disease in our case is unknown, but we have some theories. The original intervention was done by a traditional surgeon who probably injured the caecum and caused a caecostomy

Figure 3. Site of groin abscess and fistula at right femoral triangle.

Table 1. Favourable and unfavourable factors predictive of nonoperative fistula closure

Favourable	Unfavourable
Surgical aetiology	Ileal, jejunal, nonsurgical aetiology
Appendicitis, diverticulitis	IBD, cancer, radiation
Transferrin > 200 mg/dL	Transferrin < 200 mg/dL
No obstruction, bowel in continuity, no in-fection, no inflamed intestine	Distal obstruction, bowel discontinuity, adjacent in-fection, adjacent active inflammation
Length > 2 cm, end fistula	Length < 2 cm, lateral fistula, multiple fistulas
Output < 200 mL/24 h	Output > 500 mL/24 h
No sepsis, balanced electrolytes	Sepsis, electrolyte disturbances
Initial referral to tertiary care centre and sub-speciality care	Delay getting to tertiary care centre and sub-specialty care

which leaked. A Richter's hernia involving the caecum is possible but very unlikely. The sequelae of the ECF is either spontaneous closure or persistent leakage as seen in our patient.[5]

The clinical presentation of our patient is quite insidious with little faeculent material after walking for some period. This is typical of low type ECF according to Suk-Hwan who put low output ECF to be less than 200 mls and high output ECF more than 500 mls of gut secretions.[2, 6]

The principles of management of ECF are multi-disciplinary.[7] It involves medical, radiological and surgical procedures. Magnetic Resonance Imaging (MRI) could diagnose correctly the organ of origin and rule out other factors like foreign bodies and tumours. In our case, MRI services were not available. Most postoperative ECFs are managed by surgery after careful nutritional and electrolyte support.[8] In1964, Chapman et al, developed a management strategy for ECF which still stands up today. [9]

Chapman's priorities of care included:

- Phase 1: Management of dehydration, sepsis, and fistula effluent
- Phase 2: Initiation of electrolyte replacement and intravenous nutrition
- Phase 3: Placement of enteral feeding access and continued vigilance in the search for uncontrolled sepsis
- Phase 4: Major surgical intervention.

Pertinent radiological and clinical findings determine the path of treatment, spontaneous closure is usually affected by the presence of favourable or unfavourable factors - see Table 1. When favourable factors outweigh the unfavourable ones, conservative treatment can be tried for a period of six weeks by use of enteral feeds which have tropic effect on the bowel and prevents mucosal atrophy, and octreotide a synthetic analogue of somatostatin which inhibits gastrointestinal and pancreatic secretions.[5,9] The goal of surgery is to re-establish bowel continuity and avoid creating another enterostomy.[7,10] Bowel resection and anastomosis should always be considered as the best method for re-establishing bowel continuity and can reverse the leakage in 95% of cases.[4,10,11]

Conclusion

Groin hernias are very common in Sub-Saharan Africa, and they represent a high proportion of surgical procedures done, although the human resources are not enough to properly care for them. Hernia surgery when done by non-specialists leads to increased morbidity and mortality. ECF is one of the most difficult complications to be managed by the general surgeon in a resource limited setting. Thorough history taking and clinical examination of all patients with groin swellings and sinuses is recommended.

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