

Spontaneous Colocutaneous Fistula

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Citation

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Abstract

Enterocutaneous fistula or fecal fistula is a most distressing situation to the patient, his or her relatives and to the surgeon. The common causes of enterocutaneous fistulas include inadequate surgical technique, diverticulitis, biliary tract obstruction and malignancy, with 82% of the enterocutaneous fistulas occurring in the post-operative period. Surgery is usually not the first line of management except to deal with the complications. Resection of bowel containing the fistulous tract with end-to-end anastomosis is the procedure of choice when surgical intervention is required.

INTRODUCTION

Enterocutaneous fistula or fecal fistula is a most distressing situation to the patient, his or her relatives and to the surgeon. This has to be distinguished from the internal fistulas, which develop either spontaneously or as a result of some intraabdominal pathology.

CASE REPORT

A 55-year-old diabetic male noticed a spontaneous discharge of fecal matter from an opening in the left lumbar region. There was no history of any trauma to the abdomen or fever. His bladder and bowel habits were normal. He had presented this complaint to a local physician who had tried conservative management in the form of local dressing and antibiotics. However, this discharge persisted in spite of the treatment and he was referred to our institute after 3 months of conservative trial.

On examination, his vitals were within normal limits. Examination of abdomen revealed a fistulous opening in the left lumbar region discharging fecal matter. The amount of discharge was less than 100ml/day. There was no mass palpated in the abdomen. Per rectal examination was within normal limits. Examination of the chest revealed no abnormality.

Routine investigation showed: hemoglobin 10.5gm/dl, total leukocyte count 10560/cumm and differential leukocyte count: neutrophils 63%, lymphocytes 31%, eosinophils 5%, basophils 1%. Random blood sugar was 374mg/dl. Renal function test and liver function test were within normal limits. Plain radiology of the abdomen and chest were

inconclusive. Colonoscopy revealed a normal study.

Contrast enhanced computed tomography of the abdomen was planned. Axial sections showed leakage of the oral contrast medium from the splenic flexure of the colon through the retroperitoneum and the abdominal wall to the exterior, suggestive of colocutaneous fistula. Incidental congenital absence of the left kidney was also detected in the scan. (FIG-1)(FIG-2)

Figure 1

Figure 1: Axial Section Of Abdominal Cect Showing Leakage Of The Oral Contrast Medium From The Splenic Flexure Of The Colon Into The Retroperitoneum

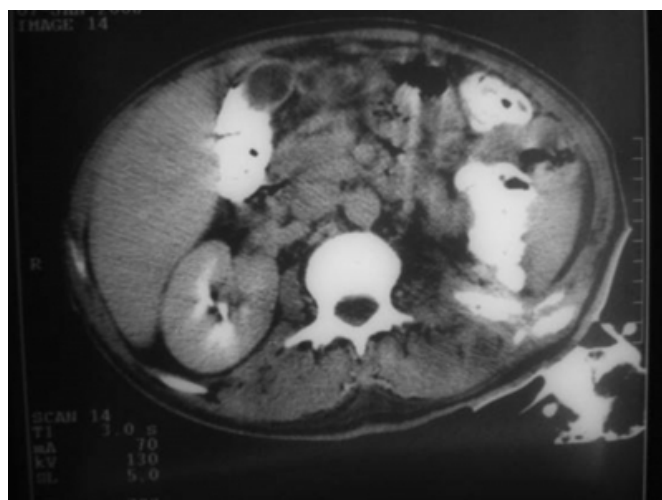


Figure 2

Figure 2: Axial Section Of Abdominal Cect Showing Leakage Of The Oral Contrast Medium From The Colon Into The Retroperitoneum With Extension To The Exterior Through The Anterior Abdominal Wall



Exploratory laparotomy revealed a fistulous tract of around 8-10cm extending from the skin in the region of left lumbar region to the descending colon just distal to the splenic flexure. The rest of the colon was normal. Resection of the involved colon containing the fistulous tract was done. Bowel continuity was maintained with primary end-to-end colo-colic anastomosis. The patient had an uneventful post-operative recovery.

Histopathology of the specimen was suggestive of chronic inflammation.

DISCUSSION

Enterocutaneous fistulas were previously classified as either high-output or low-output type depending upon the amount of collection per 24 hours. However, this classification had little relevance to the prognosis of the disease and to the modality of management. Siteges-Sera et al. proposed a classification based upon the location of the fistula in the gastrointestinal tract. Subsequently Schein modified this classification as follows: type 1 refers to abdominal esophagus and gastroduodenal fistulas; type 2 refers to small bowel fistula; type 3 refers to a large bowel fistula; type 4 refers to a fistula at any site but associated with a large abdominal wall defect.^{1,2,3}

The common causes of enterocutaneous fistulas include inadequate surgical technique, diverticulitis, biliary tract obstruction and malignancy. Eighty-two percent of the enterocutaneous fistulas occur in the post-operative period. Postoperative fistulas are due to anastomotic leakage,

iatrogenic enterotomy, local sepsis, distal obstruction, presence of foreign bodies and complex wound problems. The incidence of enterocutaneous fistulas is higher after surgical closure of typhoid intestinal perforation, tuberculosis of gastrointestinal tract, adhesiolysis, periduodenal operations, Crohn's disease, illegal abortions and gynecological operations. An inguinal hernia mistakenly incised as a groin abscess, obstructed paraumbilical and Richter's hernia and inadvertent bite into a loop of bowel while closing the abdomen are some of the conditions described in the etiology of postoperative enterocutaneous fistulas.^{4,5,6,7,8,16,17}

Spontaneous enterocutaneous fistulas have been reported in patients undergoing radiotherapy due to irreversible damage to the bowel with resultant fibrosis, necrosis and ultimately fistula formation. Spontaneous enterocutaneous fistula has also been described in patients with enteric fever, HIV infection, malakoplakia, tuberculosis, Crohn's disease and acute appendicitis. Rarely, spontaneous enterocutaneous have also been encountered in inguinal hernia.

^{16,17,20,21,22,23,24,25}

The mortality rate of type 1 fistula is reported to be 17%, of type 2 about 33%, of type 3 about 20 % and of type 4 around 60%. Serum levels of short turnover proteins are described to be the predictors of morbidity and mortality of enterocutaneous fistula closure. The serum transferrin level correlates well with spontaneous closure of the fistula. Serum transferrin, retinol-binding proteins and thyroxine binding prealbumin are the predictors of mortality. The increase in the hepatic synthesis of these acute phase proteins (transferrin, retinol-binding protein and thyroxine binding prealbumin) in response to stress reflects the prognosis of this entity.^{4,5}

Radiological imaging can serve a dual purpose in this condition. A suspected associated intra-abdominal source of sepsis can be identified using sonography or computed tomography and further guided drainage may be employed to treat these conditions. After stabilization of the patient, water-soluble contrast studies can be done to visualize the fistula, exclude any additional intestinal disease and distal obstruction, and to establish the anatomy of the unaffected bowel. Hydrogen peroxide enhanced ultrasonography fistulography is sometimes helpful in making the diagnosis.

^{19,26}

The management of this condition has been historically grouped into three eras. The era of antibiotics (1945-1970)

with a mortality of about 45%; the era of intensive nursing care (1960-1970) with an emphasis on respiratory support, antibiotics and nutrition and mortality rate dropping to 15%; and the era of intravenous hyperalimentation (1970-1975). Though the mortality rate of the intravenous hyperalimentation era did not improve significantly as compared to the era of intensive nursing care, the rate of spontaneous closure, however, rose from 10% to 25%. The majority of deaths are due to uncontrolled infection and associated malnutrition. ^{1,5}

Nutrition, control of sepsis and local skin protection are the important aspects of conservative management of enterocutaneous fistulas. Nutrition may be in the form of enteral feeding, hyperalimentation or total parenteral (TPN) nutrition. Fistula output, mortality and spontaneous closure are all improved with adequate nutritional support. The enteral feeding may be administered through a tube placed beyond the fistula, a feeding enterostomy or by oral intake of high amounts of protein, calories and multivitamins. Enteral feeding has a trophic effect on the bowel, prevents mucosal atrophy, and plays an important role in immune system preservation and prevention of bacterial translocation, thus preventing sepsis. Enteral feeding does not prevent the closure of the fistula, especially if the fistula is located in the lower gastrointestinal tract. The aim of enteral diet is to achieve weight gain and a positive nitrogen balance. The duration of closure with enteral diet is reported to be between 7 to 150 days. The advantage of total parenteral nutrition is that it allows the gastrointestinal tract to rest, while providing nutrition. The duration of closure with TPN is reported as 50-65 days. Somatostatin and its synthetic analogue octreotide have been reported to be useful in the management of this entity. ^{4,5,6,9,10,11,12}

Failure of spontaneous closure with conservative management has been attributed to irradiation, foreign body in the fistulous tract, undrained intraabdominal abscess, distal obstruction and abdominal defect. Rarely, prolapsed mucosa in the fistulous tract; tuberculosis of the fistula and malignancy in and around the fistula have also been reported as reasons for non-closure of the tract. ^{6,15}

Surgical intervention is recommended if the fistula persists for more than one to one and a half months. Immediate intervention is indicated in distal obstruction, bleeding, foreign body in the tract and intra-abdominal abscess formation. The preferred surgical procedure is complete resection of the bowel segment containing the fistula and an

end-to-end anastomosis. Bypass of the fistula is indicated if resection is hazardous such as in lateral duodenal fistulas and bowel deep in the pelvis. Proximal diverting enterotomy, use of a serosal patch and direct suture closure of the fistula usually is not recommended in this entity. Local treatment in the form of irrigation of the fistulous tract and aspiration of the fistula contents may help. Application of a colostomy bag, frequent changing of dressing over the fistula and application of paste to prevent skin erosion may help in reducing the distress of the patient. ^{6,9,13,14,18}

CONCLUSION

Uncomplicated enterocutaneous fistulas usually close spontaneously with conservative management. Surgery is usually not the first line of management except to deal with the complications. Resection of bowel containing the fistulous tract with end-to-end anastomosis is the procedure of choice when surgical intervention is required.

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