



# Management of Enterocutaneous Fistulas

# 49

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## Algorithmic Approach

- A. Patients with EC fistulas typically present with drainage of enteric contents through the abdominal wall or with occult findings of abdominal pain, ileus, fevers, malaise, and a CT consistent with an intraabdominal abscess. Past medical and surgical history should be obtained, including any history of abdominal operations, trauma, malignancy, radiation, or inflammatory bowel disease. EC fistulas are categorized based on etiology (iatrogenic, mesh related, because of inflammatory bowel disease, diverticulitis, radiation effects, trauma, neoplastic process), location (proximal or distal small bowel), and daily output (low < 200 ml/day, intermediate 200–500 ml/day, high > 500 ml).
- B. EC fistulas carry high morbidity and mortality and therefore require a multidisciplinary approach. Principal management involves fluid resuscitation with electrolyte correction and replacement of fluid losses, characterization and control of sepsis, nutritional support, and local wound care [1]. Patients should be

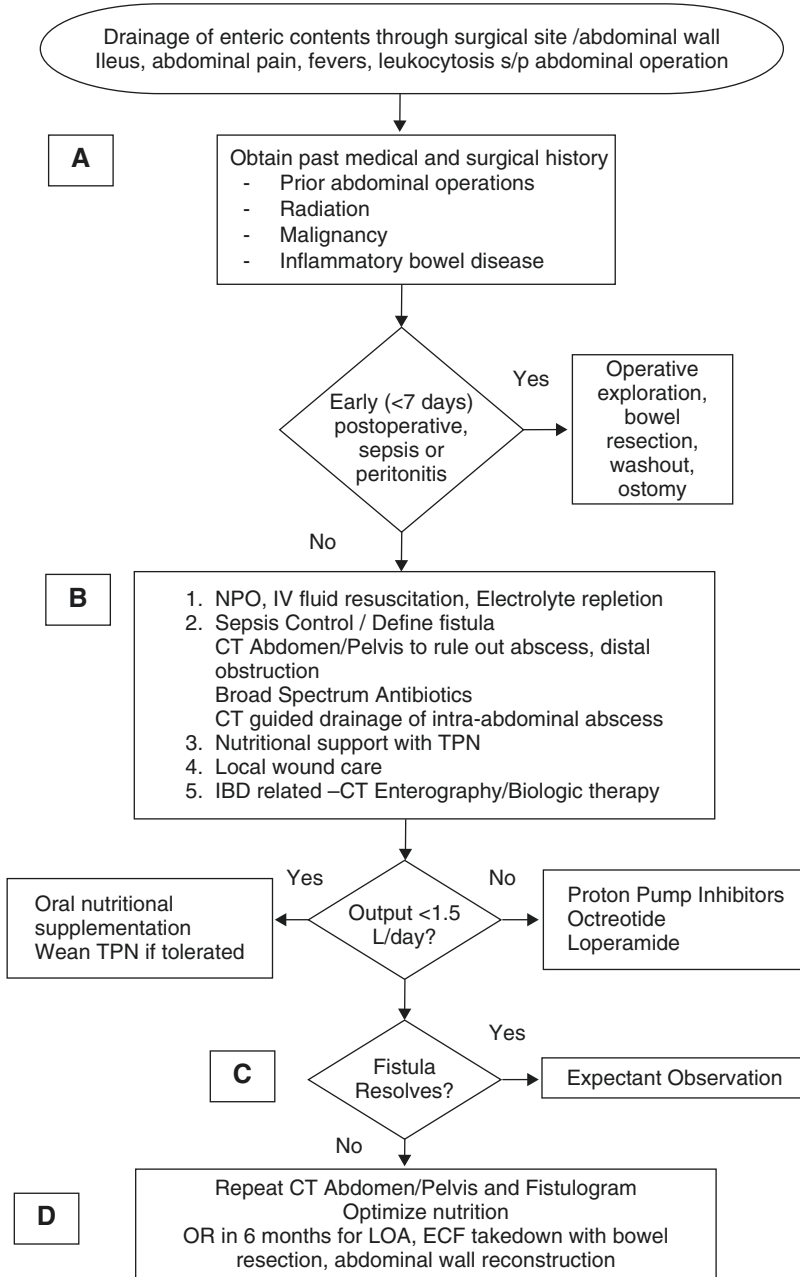
initially made *nil per os* (NPO), undergo fluid resuscitation, and have any electrolyte derangements intravenously corrected. Sepsis accounts for the majority of morbidity related to EC fistulas, and therefore any sign of sepsis should mandate early administration of broad spectrum antibiotics. In addition, cross-sectional imaging with CT of the abdomen and pelvis may identify any intraabdominal fluid collections that require image-guided drainage, as well as sites of distal obstruction. Patients with peritonitis or persistent septic shock should be taken to the operating room for wide drainage and enteric diversion. Many patients are nutritionally depleted upon presentation and suffer from severe protein losses from the EC fistula and therefore require supplemental nutrition, mainly in the form of total parenteral nutrition (TPN). Nutritional goals should include an average caloric and protein intake of 30 kcal/kg/day and 1.5–2.5 g/kg/day, respectively. High-output fistulas may be controlled with TPN, proton pump inhibitors (PPI), antidiarrheals, and octreotide injections [2]. The goal of enteric output should be <1.5 L/day. In patients with no evidence of ileus or no increase in the daily fistula output after introduction of oral intake, enteral feeds are preferred over TPN or should be used supplementarily to TPN. Local wound care should involve a wound care specialist and/or

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enterostomal therapist and aim at controlling the effluent and protect the adjacent skin site, with either local wound barriers or negative pressure vacuum dressings [3]. Special situations include patients with spontaneous fistulas secondary to inflammatory bowel disease (IBD). Percutaneous drainage, along with the use of a biologic agent, can aid in the spontaneous closure of the fistula [4].

- C. About one third of fistulas will spontaneously close by 4–6 weeks. Fistulas that remain open after 12 weeks will require surgical management. Factors associated with failure of spontaneous closure include retained foreign body (most commonly permanent suture or mesh), high-output (often proximal) fistulas such as jejunal or ileal fistulas, presence of distal obstruction, spontaneous fistulas secondary to radiation, IBD or malignancy, as well as short (<2 cm) fistulas and those with epithelialized tracts.
- D. Surgical management should be offered no sooner than 12 weeks (ideally 6 months) from the onset of the EC fistula in patients whose nutrition has been optimized, sepsis has resolved, and comorbidities managed [5, 6]. Preoperatively, cross-sectional imaging should be obtained to rule out occult fluid collections, as well as a fistulogram to rule out distal obstruction. Surgical principles include safe entry to the abdomen away from the EC fistula, lysis of adhesions, inspection of potential distal obstruction, avoidance of enterotomies, removal of retained foreign body, and takedown of EC fistula with resection of involved segment(s) and primary anastomosis. Often, full thickness resection of the EC fistula and the abdominal wall is required, which may necessitate complex abdominal wall reconstruction [7].



Algorithm 49.1

## References

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