Controversies in the Care of the Enterocutaneous Fistula

Kurt G. Davis, MD[a], Eric K. Johnson, MD[b,*]

KEYWORDS

• Enterocutaneous fistula • Enteroatmospheric fistula • Abdominal wall reconstruction
• Complications

KEY POINTS

- The entities of enterocutaneous fistula (ECF) and enteroatmospheric fistula (EAF) remain a formidable challenge to surgeons facing affected patients.
- Awareness of its causes, contributing factors, potential preventive measures, and various management strategies are crucial to achieving optimal outcomes in the care of these patients.
- Due to a lack of high-quality evidence supporting any particular regimen of care, the surgeon is required to exercise skillful judgment in treating these individuals.

BACKGROUND AND OVERVIEW

The appearance of enteric contents from an abdominal incision is a devastating complication and can be emotionally distressing for both the patient and the operative surgeon. ECFs range from easily controlled low-output colocutaneous fistulas to high-output EAFs requiring prolonged nutritional support, specialized wound care, and complex reoperative surgery. These patients frequently face complications, and a well-organized multidisciplinary approach must be implemented in their

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[a] Section of Colon and Rectal Surgery, Department of Surgery, 5005 North Piedras Street, William Beaumont Army Medical Center, Fort Bliss, TX 79920, USA; [b] Section of Colon and Rectal Surgery, Department of Surgery, 9040A Fitzsimmons Drive, Madigan Army Medical Center, Joint Base Lewis-McChord, Tacoma, WA 98431, USA
* Corresponding author. Section of General Surgery, Department of Surgery, JBLM, Tacoma, WA 98431.
E-mail address: doktrj@gmail.com

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management to improve outcomes. Furthermore, in a hospital setting with limited resources, consideration should be given to having these patients evaluated in a center with specialized experience in dealing with ECFs. A great deal of controversy surrounds nearly every aspect of the care of these patients. A dearth of homogenous patient populations and the preponderance of case reports and case series make this situation unlikely to change soon.

It is important to highlight up front that the presence of an ECF is accompanied by a significant risk of mortality, reported between 5% and 20%,[1,2] with the variability owing to the heterogeneity of this cohort of patients. In addition to the significant mortality rates, the morbidity associated with ECFs is excessive. A prolonged hospital course, as well as extensive postoperative rehabilitation, often with nutritional supplementation, is common. The cost to the health care system and the psychological impact on the patient are difficult to quantify. However, ample data show increased intensive care unit length of stay, hospital length of stay, and hospital cost.[3]

A postoperative ECF (**Fig. 1**) seldom poses a diagnostic dilemma. It is defined as an abnormal communication between a bowel lumen and the skin and is frequently defined based on anatomic origin or cause.[4] It most commonly results from prior abdominal operations but can occur from trauma, Crohn disease, diverticulitis, malignancy, hernia mesh erosions, and, less commonly, intra-abdominal infections such as tuberculosis, typhoid, and actinomycoses.[3–5] Postoperative ECFs most commonly result from operations for malignancy, inflammatory bowel disease, or adhesiolysis, as well as emergency abdominal procedures.[6]

ECFs are arbitrarily classified as low or high output based on the amount of drainage in a 24-hour period. Less than 200 mL/d is considered low output, greater than 500 mL/d is classified as high output, and the intermediate group is defined as such. Adequate quantification of volume output is critical not only in defining the fistula but also in predicting the likelihood of closure and in planning for any subsequent surgical intervention.[7,8]

A significant subset of ECFs close with nonoperative treatment, including control of any infectious source, nutritional support, and appropriate wound care. It has been demonstrated that patients with high-output fistulas have a higher mortality, and there is some evidence, albeit less clear, that these fistulas demonstrate a lower likelihood of spontaneous closure.[9,10] Medical students are taught the familiar but still useful acronym “FRIENDS” to delineate those fistulas less likely to close spontaneously.

Fig. 1. Patient with a postoperative enterocutaneous fistula being managed with negative pressure wound therapy.