

Surgical management of anastomotic leak following colorectal surgery

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ABSTRACT

Management of anastomotic leak following colorectal reconstructive procedures is perhaps the most challenging issue facing both the patient and surgeon. These complications are frequently encountered in deconditioned and septic patients where clinical judgment and experience play a paramount role in the care of these patients. Several algorithms have been presented for evaluation and management of anastomotic leak based on location, chronicity, symptoms, locations, and diversion status. Timely management of anastomotic leak is paramount to minimizing short- and long-term morbidity and mortality in patients. With a varied armamentarium, and frequent need for multiple interventions, restoration of intestinal continuity and acceptable functional outcomes are achievable in a majority of instances.

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Introduction

Management of anastomotic leak following colorectal reconstructive procedures is perhaps the most challenging issue facing both the patient and surgeon. These complications are often the most complicated and enduring faced by a colorectal surgeon. They are frequently encountered in deconditioned and septic patients where clinical judgment and experience play a paramount role in the care of these patients.

Leak rates range from 1% to 21% in the literature with associated mortality of 3–22%.¹ Rates will vary by location with distal colorectal, coloanal, and ileoanal leak rates ranging between 1% and 19%, colocolonic leak rates from 0% to 2%, and enteroenteric and ileocolonic leak rates from 0.02% to 4%.² Although some attribute leak rates to volumes, in one study, Hyman et al. demonstrated that even in a group of high-volume surgeons, leak rates ranged from 1.6% to 9.9%, with complications ranging from 30.5% to 44%. Given these findings, they concluded that even with highly skilled surgeons with high volumes of colorectal surgery, there may be a wide variance in leak and morbidity, and in some cases, these may be possibly preventable.³ Given the gravity of this dreaded surgical complication, numerous authors have attempted to come to a consensus on the management of anastomotic leaks.^{4–11} The most deliberate attempts at clarifying the management of anastomotic leaks were proposed by the International Anastomotic Leak Study Group—based in intraperitoneal vs. extraperitoneal location,² later by the International Study Group of Rectal Cancer—based on chronicity, symptoms, and location,¹⁰

and most recently by Blumetti et al.¹ also by diversion status and intra- vs. extraperitoneal location. This article will present a modified compendium of the above algorithms to aid the surgeon in approaching management of the patient with an anastomotic leak (Fig). As with any attempt at standardization of medical approaches, clinical symptoms, surgeon experience, and clinical judgment may help in identifying the ideal modality and deviation from the above algorithms to assure the best care for the patient.

Management of anastomotic dehiscence is facilitated by a thorough understanding of not only the risk factors associated with anastomotic leak but also the theoretical pathophysiology of its development. It is clinically evident that timely management of anastomotic leak is paramount to minimizing short- and long-term morbidity and mortality in patients. To that end, a high index of suspicion followed by an appropriate workup is critical in choosing a management plan that optimizes patient outcome.

When an anastomotic leak is identified, the patient and family must be prepared for a prolonged hospitalization.¹² With this comes prolonged ICU and overall increased hospital length of stay followed by increased cost^{13,14} and additional staged operative and non-operative interventions. Increased patient morbidity and mortality^{15–19} must be realized and prepared for appropriately by the caring surgeon. In some instances, maintenance of intestinal continuity may not be initially feasible, often times requiring an interval of 3–12 months prior to attempted restoration. Furthermore, several studies have now demonstrated a correlation between anastomotic leak and poor oncologic outcomes with increased locoregional recurrences and decreased survival.^{19–22} This is most likely attributed to shedding of micrometastatic disease and inflammatory-mediated cytokine release.^{23,24} Similarly, health-related outcomes as measured with physical,

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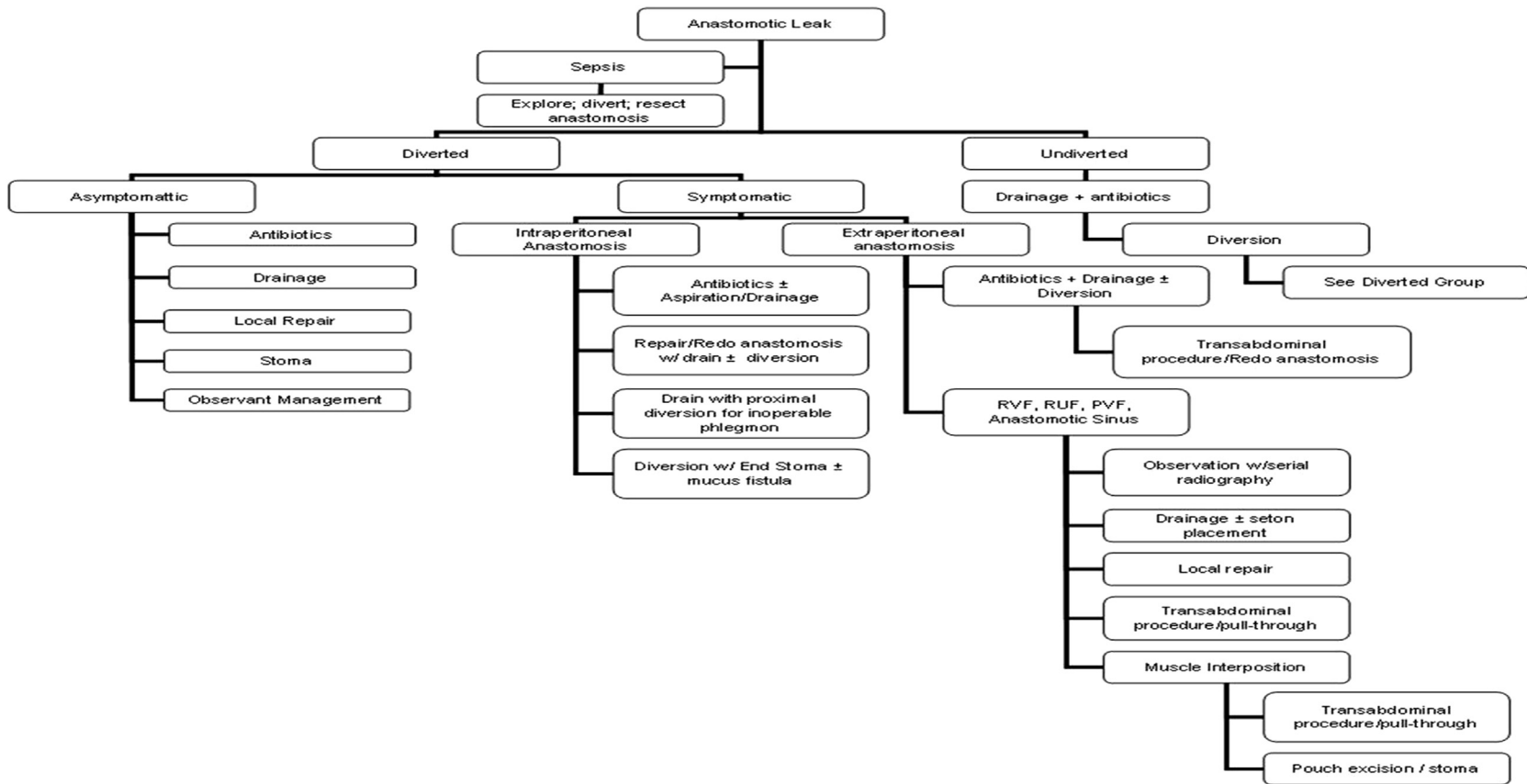


Fig. Algorithm for surgical management of anastomotic leak. Presented is an algorithmic approach to management of complex anastomotic leaks that may present in the setting of colorectal anastomoses. Surgical judgement and discretion will allow for repetition, bypassing, and jumping to various branching pathways. All steps are not exclusive, and often times numerous interventions may be performed simultaneously. RUF—rectourethral fistula; RVF—rectovaginal fistula; PVF—pouch—vaginal fistula.

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