

Title: Stage Dependent Management of Sleeve Gastrectomy Leaks – A Systematic Review with Proposed Classification and Management Algorithm

Introduction:

Gastric leak following foregut surgery remains a major challenge. Managing these deep/organ-space surgical site infections frequently involve a range of supportive, radiologic, endoscopic or surgical therapies. However, treatment algorithms vary between institutions depending less on patient factors than clinician/unit experience. Endoscopic and surgical therapies have been promulgated but not compared for efficacy nor their applicability to the differing scenarios encountered when treating these patients. Sleeve gastrectomy leaks are a useful “model” for the study of foregut leaks as the anatomic and physiologic conditions present are less heterogeneous than other forms of foregut surgery and because the high volume of surgery performed.

We assessed the efficacy of different treatments for sleeve gastrectomy leaks across the literature and our centre’s experiences, while attempting to implement an algorithm in managing sleeve leaks according to their severity as classified by a CT based staging system.

Materials and methods:

A comprehensive search of existing literature over the last decade was conducted using pre-defined criteria in accordance to PRISMA guidelines. Sleeve leaks were categorized according to severity, prior to analysing the efficacy of treatment methods.

Results:

Following review of 1030 articles, 22 studies were included, involving a total of 719 sleeve leak patients. The mean age and BMI ranged from 33-46 years of age and 37-48kg/m², respectively. In type 1-2 leaks, surgical or radiological drainage followed by primary endoscopic therapy (stenting, internal drainage, OTSC clips, fibrin glue and/or E-VAC) were effective (leak resolution rates – 50-100% between reporting papers). Endoscopic therapy remains a viable treatment option in treating type 3-4 leaks with success rates ranging from 33-95%, although surgery (fistula-jejunostomy, Roux-en-Y bypass or total gastrectomy) may be required in chronic leaks where all other modalities have failed.

Conclusion:

Management of sleeve leaks can be driven by the underlying leak pathophysiology. Defining variables such as the size of the defect, size of any abscess/collection and presence of a stenosis can allow differing options to be applied. Patients who fail to respond appropriately can be escalated to alternate therapies. Patients who do respond can be de-escalated to therapies that allow resumption of oral nutrition and potentially outpatient management.