The best endoscopic method to close refractory esophageal fistula: vacuum? clips? stenting? sheet? glue? ablation?

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Bibliography
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The current issue of Endoscopy International Open includes a pilot study regarding the use of polyglycolic acid sheets to treat esophageal leaks. We would like to congratulate the team for the paper, as an optimal treatment for anastomotic esophageal leak still needs to be developed and further research on treatment choices is necessary. However, attention must be brought to the fact that the studies must present reproducibility in other to add valuable and trustable information to the literature.

Esophageal anastomotic fistula presents a challenging condition in postoperative patients and may lead to prolonged hospital admissions, along with high morbidity and mortality [1]. A conservative approach is sometimes insufficient and surgery may be hindered due to tissue fibrosis and local inflammation. Use of endoscopy in this scenario is being explored, as an alternative to lessen hospital stay, medical expenditure, days of limited oral intake and postoperative complications, particularly in patients with fistulas larger than 5 mm [2]. Many endoscopic approaches are emerging, but there is still a lack of consistency in the literature about which is the best, meaning that none has achieved clearly superior results regarding leak resolution and complications.

For refractory postoperative esophageal leaks, the treatment rationale must include rigorous evaluation of local features such as tissue viability (presence of infection, ischemia, necrosis and fibrosis); recognition of leakage maintaining factors (stenosis, presence of suture threads and drain tubes), and esophageal axis disturbances.

Evaluation of clinical presentation and hemodynamic stability is fundamental to define treatment options. In unstable patients with abscesses, the priority should be draining collections either through endoscopic therapy employing negative vacuum pressure systems or plastic pig tail stent placement, or by interventional radiology-guided percutaneous drainage or surgery.

In patients who present with stable clinical conditions, an endoscopic approach to refractory esophageal leaks should be preferable. Evaluation of the anastomosis site is fundamental as the presence of tissue necrosis, complete anastomosis dehiscence, and fistula diameter larger than 10 mm may harm endoscopic treatment results.

We consider it of great importance to maintain a pervious lumen to allow adequate outflow of fluids to the digestive tract. Achievement of an appropriate caliber in stenosis along with esophageal axis correction through early Savary Gilliard dilation has a major role in leakage resolution [3]. Since 1990, our endoscopy unit has used this approach and obtained excellent results.

Hemodynamically stable patients who present with no abscess and have viable anastomotic tissue can benefit from fully-covered self-expanding metal stents (FSEMS) as the preferred treatment choice. In endoscopic evaluation, attention also should be paid to the distance from the anastomosis to the cricopharyngeal. Especially in post-esophagectomy reconstructions, it may be short, leading to the need to employ modified esophageal metal stents to minimize discomfort due to foreign body sensation and prevent stent migration [4].

Placement of FSEMS is described as an approach to esophageal anastomotic leakage, presenting favorable results in leak resolution (with evidence of clinical success rates of 75 % to 85 %) and overall is well tolerated by patients. However, this procedure is not absent complications, and stent migration, tissue integration, and occurrence of esophago-tracheal and aorto-esophageal fistula are described as related to esophageal metal stent placement [5].

More recently, endoscopic vacuum therapy has entered the spotlight for management of gastrointestinal leaks, presenting some promising results by applying continuous negative pressure, therefore reducing local contamination and promoting granulation tissue growth [6]. Vacuum system placement is described either in an abscess cavity or within the esophageal lumen. The vacuum approach has the downside of requiring multiple endoscopies as well as the need to keep the patient in hospital for the length of the treatment. A technical variation of vacuum therapy is possible though two to three vacuum placements followed by plastic pig tail drainage, aiming to allow early oral intake and to reduce hospital stay. The leak resolution rate employing this modality of treatment is 90 % to 95 %.

Standard endoscopic clips, although mainly used for acute perforations, are also reported as treatment to esophageal leaks [7]. Moreover, placement of full-thickness over-the-scope clips has also been described in management of gastrointestinal leaks [8], although they may be difficult to use due to lack of adequate room for deployment.

Use of tissue adhesives in anastomotic leakage is also discussed in the literature [9–11], sometimes associated with other treatment methods such as APC and fibrin glue and could be a promising therapeutic option in these patients.

In the pilot study using polyglycolic described in this issue, acid sheets were used no complications were reported as the primary evaluated endpoint. We must emphasize that use of this material is indicated in the absence of infection and protein lysis, upstream stenosis or high-grade esophageal axis deviation as elevated intraluminal pressure acts as fistula maintenance factor.

Other approaches are also described, such as use of endoscopic insertion of Vicryl plug along with fibrin glue [12], solo injection of cyanoacrylate [13], overstitch closure of esophagus leaks combined with vacuum therapy [14], bronchoscopic closure of tracheoesophageal fistulas [15] and placement of cardiac septal occluder (CSDO) in esophagotracheal fistula closure [16].

In our experience, the technical success rate with CSDO placement was 97 % and the original delivery system, with 80-cm length, was a limiting factor, requiring deployment of alternative techniques. In acute esophageal leaks, the clinical success rate was 50 % [17, 18].

To this date there is still no technique of choice in endoscopic management of refractory esophageal leaks, and many different alternatives currently are being employed. This may reflect the lack of consistent results in the literature for one technique over the others, as well as complications attributed to each of the treatment methods. To date, much of the decision-making regarding the treatment approach relies on individual case evaluation as well as the team's expertise.

Competing interests

The authors declare that they have no conflict of interest.

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