

Case report

Case report of a conservative management of cervical esophageal perforation with acrylic glue injection

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ABSTRACT

Background: perforation of the upper aerodigestive tract is a potentially life-threatening condition. The appropriate treatment of cervical esophageal perforation is still controversial.

Case presentation: we report a case of cervical esophageal perforation that was effectively treated by a conservative management with acrylic glue injection.

Discussion: the management of cervical esophageal perforations has been controversial and little studied. Various treatment options, including surgical and nonsurgical management have been advocated, and no gold standard surgical treatment has yet been established. Some authors have recommended immediate surgical intervention, especially in penetrating trauma, conversely, several studies support conservative management.

Conclusions: we consider that the application of acrylic glue can be considered a promising, minimally invasive therapeutic option in the management of cervical esophageal perforation. However, the sufficient accumulation of similarly treated cases is necessary in order to confirm the efficacy and safety of this treatment modality.

1. Introduction

Perforation of the upper aerodigestive tract is a potentially life-threatening condition. While the etiology and management of thoracic esophageal perforations have been well described [1], those of the cervical esophagus and hypopharynx are far less common and the appropriate treatment more controversial [2].

We present the case of a young woman with an iatrogenic cervical esophageal perforation. A conservative management with acrylic glue injection, despite the late diagnosis, guaranteed a fast recovery. This case report has been reported in line with the SCARE criteria [3].

2. Case presentation

An 18-year old woman underwent laterocervical lymph node removal of the left cervical segment Va because of a suspected lymphoma. On the 7th day post-surgery, she complained sore throat and pain after eating. Two weeks later, surgical wound infection was observed, producing purulent material and saliva (confirmed by salivary amylases, 213 UI/L). Food material (pasta) has also been identified. Thus she underwent an esophagogram, that revealed esophageal perforation and 2 cm fistula tract (Fig. 1). After this exam, she started a conservative

treatment with wound drainage, antibiotics and parenteral nutrition. After 10 days no changes in output volume of the fistula was observed (200 ml in 24 h), thus it was decided to treat it with cyanoacrylic glue injection. The patient was placed on the operating table with head rotated on the right. Wound was infiltrated with 5 ml of local anesthetic. After catheterization of the fistulous tract through the external fistula opening, 2 ml of glue (Glubran 2[®]; GEM Srl, Viareggio, Italy) were injected (Fig. 2).

Fistulous drainage ceased the day after procedure, and radiological exam showed the absence of leakage. The patient was discharged 1 week later and remained asymptomatic. She began oral feeding with liquids in the 3rd postoperative day, incorporating a normal diet over the following 1 month. After 90 days, the patient complained no symptoms with normal feeding.

3. Discussion

The management of cervical esophageal perforations has been controversial and little studied. Various treatment options, including surgical and nonsurgical management have been advocated, and no gold standard surgical treatment has been established yet. Some authors have recommended immediate surgical intervention, especially in

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Fig. 1. Fistula tract at the esophagogram. White arrow marks the fistula tract.

penetrating trauma, conversely, several studies support conservative management [2].

The treatment of choice depends on many different factors, such as fistula's output or complication. In fact, relating to the output, fistula can be classified in low output fistula (< 200 ml/24 h) or high volume fistula (> 500 ml/24 h).

When the volume of fistula output is low and no septic complications are present, often the best decision is a conservative treatment.

We report a case of cervical esophageal perforation that was effectively treated by a conservative management with cyanoacrylic glue injection, Glubran 2°.

Glubran 2° is a cyanoacrylic glue with high adhesive and haemostatic properties. When the glue reaches living tissue, it polymerizes and generates a film with high tensile resistance in about 60–90 seconds and offers a fast adhesive strength, able to close the fistulous tract. Therefore, it has an antibacterial property, that allows to use it on infected sites; it differs from fibrin glue, which is a formulation used to create a fibrin clot, made up of fibrinogen and thrombin that are applied to the tissue sites to glue them together.

The use of glue is widespread in many surgical fields, as bariatric, colorectal and vascular surgery [4–7].

Although the beneficial effect of acrylic glue has been described for the management of cervical anastomotic fistula [8], only one case of acrylic glue injection to treat iatrogenic cervical esophageal perforation, in our best knowledge, has been previously reported [9].

Of interest, at difference with Lautermann et al. [9], this is the first case report of a successful conservative treatment in a patient who had eaten between the time of perforation and the diagnosis.

Most suggest that patients who have eaten between the time of perforation and diagnosis and/or have 24 hours between injury and diagnosis are at higher risk of failing conservative management [2].

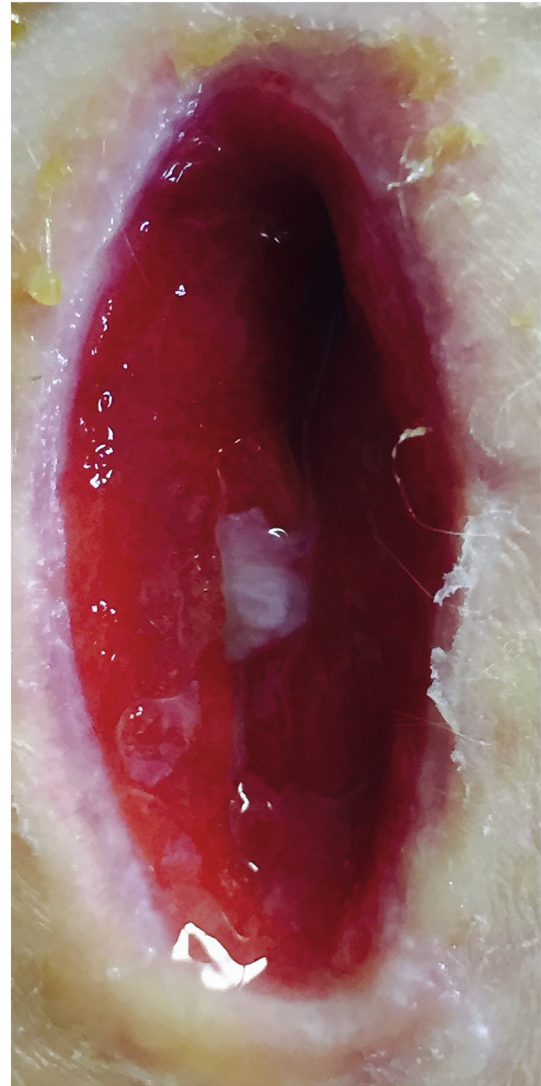


Fig. 2. Glue application into the fistula tract.

Furthermore, although endoscopic application of acrylic glue has been widely reported, this is the first case, in our best knowledge, reporting the injection of glue into the external fistula opening.

Of interest, a very fast recovery has been obtained with only one glue's application.

The major limitation of this study lays in its study design. Being a case report further studies on a representative study population are needed to give definitive conclusion.

4. Conclusion

We can state that the application of acrylic glue can be considered a promising, minimally invasive therapeutic option in the management of cervical esophageal perforation and it could be a therapeutic conservative option in case of failure of standard conservative management.

However, the sufficient accumulation of similarly treated cases is necessary in order to confirm the efficacy and safety of this treatment modality.

Ethical approval

Not applicable.

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Author contribution

AP and MM: conception, design, acquisition of the data and drafting of the article; **AP, MaM, MF:** acquisition of the data and writing of the manuscript; **DPGD, MM:** interpretation of the data and critical revisions; **DPGD, MM:** critical revisions and final approval.

Conflicts of interest

None.

Research registration number

Not applicable.

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