ESOPHAGEAL PEPTIC STENOSIS: MANAGEMENT OF A COMPLEX CASE

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Introduction: esophageal stenosis is one of the most serious problems in patients with peptic esophagitis. It may require esophageal resection and replacement, if no other treatment is effective. ***Patients and methods:*** we report a successfully managed case of persistent esophageal stricture. The patient was a 10-year-old boy suffering from gastroesophageal reflux since birth. He has an esophageal peptic stricture which was treated with multiple dilatation at another hospital (about 24 times). The boy joined our Unit for gastroesophageal reflux and severe esophageal stricture confirmed with contrast X-ray. He could only eat liquid foods and had a growth retardation. He underwent endoscopy which shows severe esophagitis with mucosal bleeding. He also had a severe anemia, for which he underwent blood transfusion. We decided to submit the boy to Toupet laparoscopic fundoplication, endoscopic intraluminal dilatation with balloon and diathermic needle and therapy with PPI (protonic pump inhibitors) and corticostheroids. The little patient needed 7 endoscopic dilatations. ***Results:*** one month after the last dilatation he has grown, can eat all kind of foods, his blood count is normal and X-ray and endoscopy both show resolution of the stenosis and esophagitis. ***Conclusions:*** we report this case because we think that it's a complex and interesting case. This patient was a candidate for esophageal replacement. We managed to save his native esophagus, treating gastroesophageal reflux and peptic stenosis with surgery and endoscopic dilatations, and reducing fibrosis and scarring with corticosteroid therapy. We thus think that this therapeutic procedure can be an optimal choice to contemplate before considering native esophagus replacement.
Keywords: esophageal stenosis, gastroesophageal reflux, endoscopic dilatation, children.

INTRODUCTION

Esophageal stenosis is one of the most serious problems in patients with peptic esophagitis. Its prevalence is poorly documented in childhood, and it's estimated to be around 1,5%. [1] Strictures result from injuries to the esophageal wall with subsequent thickening of its layers and eventual development of fibrosis [2]. Current treatments include endoscopic dilation, use of removable self-expanding intraluminal stents and, if no other treatment is effective, esophageal resection and replacement. Conservative therapy has been acknowledged as the treatment of choice in the last ten years, for its good outcome [3].

The present report describes a successfully managed case of persistent esophageal stricture.

CASE REPORT

M.A. is a 10 years old boy who has suffered from gastroesophageal reflux since birth. He only ate his mother's milk for 5 years and had frequent episodes of brown vomiting.

At the arrival in another hospital at the age of 4 years he had a severe esophageal peptic stricture, which was treated with several endoscopic dilatations. He was then submitted to periodic endoscopic dilatations and to blood transfusion every 6-12 months for severe anemia. He underwent surgery for right inguinal hernia and religious circumcision at the age of 8 years.

The boy joined our Unit at the age of 10 years: he was 20,3 kg (<< 3rd percentile), 125,5 cm (3rd percentile), and could only eat liquid foods. He had a diagnosis of "hiatal hernia and peptic esophageal stenosis in the lower third of the esophagus, with marked dilatation of the upper and medium third". Blood tests showed a decrease in hemoglobin and eritrocytes, with low serum iron. The boy was thus transfused with whole blood after determination of blood group.

A contrast X-ray was performed and showed a severe esophageal stricture in the lower region and gastroesophageal reflux. (Fig. 1) A bone age study showed a bone age of 6,6 years, despite the real age of the patient who was 10.

He underwent endoscopy which shows severe esophagitis with mucosal bleeding and a stricture 35 cm from upper dental arch (Fig. 2); a pneumatic dilatation was performed, after which the instrument could pass over the stenosis, 5 cm long.

An antireflux therapy was then set with omeprazole 20 mg a day and ranitidine 150 mg a day. The boy was also submitted to Toupet laparoscopic fundoplication, and to surgery for left inguinal hernia and plantar wart of the left foot.

The little patient needed 5 other endoscopic intraluminal dilatations, the first one month after surgery and then every 15-20 days: they were performed three times with balloon, one time with balloon and topic injection of prednisone, then with diatermic needle and finally with diathermic needle and topic injection of methylprednisolone. He was also subjected to therapy with systemic corticosteroids for about a month.

One month after the last dilatation he has grown (128 cm and 25 kg, both between 3rd ad 15th percentile), can eat all kind of foods, his blood count is normal and X-ray and endoscopy both show resolution of the stenosis and esophagitis. (Fig. 3)

DISCUSSION

Strictures of the esophagus due to gastroesophageal reflux develop over a significant period of time and diagnosis is often delayed. In infants this is partially due to the liquid nature of their diet. [4] In our patient, indeed, the prolonged assumption of maternal milk only hid a significant part of symptoms.

This boy was a candidate for esophageal replacement,

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since the entity of his stricture was severe and it was causing a set of very invalidating symptoms. Anyway, an organ substitution is a complex act of surgery, with a considerable morbidity and mortality.
There are several studies supporting each one of the various techniques available (gastric transposition, gastric tube, colon transposition and small bowel interposition) [5,6]: nonetheless the common opinion is that the patient's own esophagus is best.
A serious antireflux medical treatment and antireflux surgery were the key to our success, permitting healing of esophagitis and consequent reestablishment of mucosal elasticity. This way we could perform safer and more effective dilations: safer, for the damaged mucosa is more fragile and more easily perforated; more effective, because the characteristics of this kind of strictures are such that the dilatation is more difficult than in strictures of other etiologies. [7,8]
The use of corticosteroids for topic injection was also fundamental, for the resulting suppression of flogistic insults and consequent decrease of fibrosis in the site of dilatation. [9] Also systemic therapy with corticosteroids is considered a valid option in reducing scar formation for its immunomodulating role. [10] These two methods of administration are often used together, combining a systemic effect with a local one, which allow a higher dose limiting adverse effects.
In the last few years also Mitomycin C has been studied as antifibrotic agent for use in peptic strictures, but the results are controversial. [11,12]

CONCLUSIONS

With all of these aids altogether we were able to save the native esophagus of our patient, by treating gastroesophageal reflux and peptic stenosis with surgery and endoscopic dilatations, and reducing fibrosis and scarring with corticosteroid therapy.
This therapeutic procedure can be an optimal choice to contemplate before considering native esophagus replacement also in complex cases like this one.

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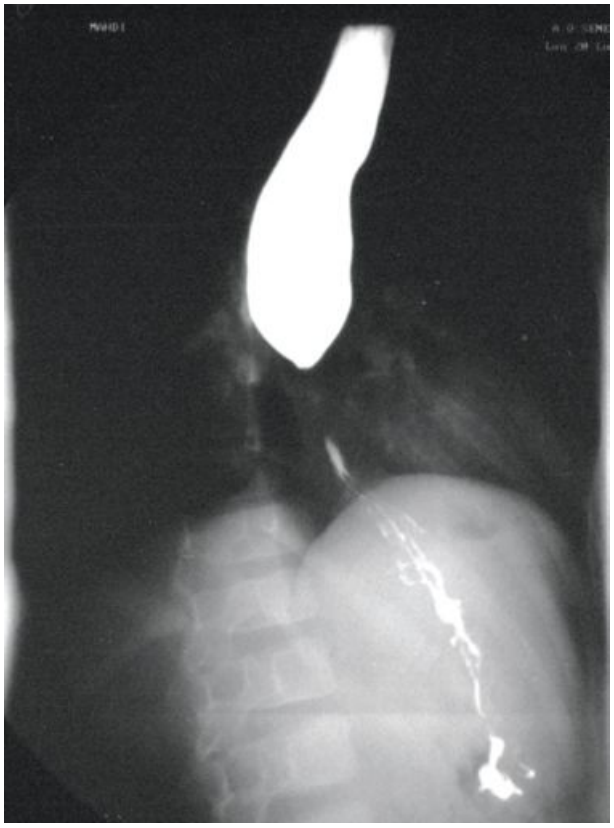

Fig.1: Esophageal contrast X-ray before dilations. Evident stenosis of the lower third of the esophagus, with difficult passage of contrast.

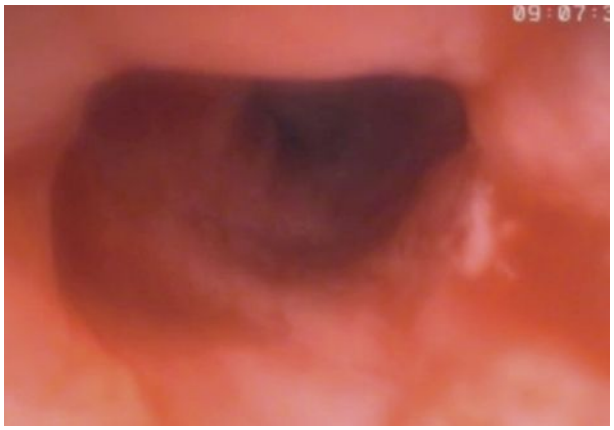

Fig.2 (above): Endoscopic findings: flogistic appearance of mucosa. The stenosis is evident in the center of esophageal lumen.

Fig.3: Last endoscopic examination. The mucosa has improved, there is no more bleeding and the stenosis has a larger diameter.