Journal of Pediatric Surgery (2013) **48**, 661–664

ELSEVIER

Journal of Pediatric Surgery

www.elsevier.com/locate/jpedsurg

Surgical reconstruction of the double lumen esophagus

Sunny Z. Hussain [a,1], Abbas E. Abbas [b,*,1], Mark F. Brown [c], Senthilkumar Sankararaman [d], Gregg Wellman [e], R. Adam Noel [f], Paul Hyman [f]

[a] *WK Pediatric Gastroenterology & Research, Willis-Knighton Hospital, Shreveport, LA, USA*
[b] *Section of Thoracic Surgery, Temple University School of Medicine, Philadelphia, PA, USA*
[c] *Christus Schumpert Sutton Children's Hospital, Shreveport, LA, USA*
[d] *Department of Pediatrics, Louisiana State University Health Sciences Center, Shreveport, LA, USA*
[e] *Delta Pathology, Shreveport, LA, USA*
[f] *Louisiana State University and Children's Hospital, New Orleans, LA, USA*

Received 26 June 2012; revised 10 December 2012; accepted 11 December 2012

Key words:
Double lumen esophagus;
Double cardia;
Esophageal reconstruction;
Esophagogastric fistula

Abstract We describe an unusual case of iatrogenic double lumen esophagus in a young female who underwent a Nissen fundoplication surgery for gastroesophageal reflux disease (GERD) in infancy. The patient suffered from refractory symptoms, including dysphagia and failure to thrive before she was evaluated and noted to have a double-lumen in the distal esophagus leading to the stomach with both lumina being extremely narrow. This condition has only rarely been described in the literature. Her symptoms were reversed after surgical reconstruction of the distal esophagus using a novel stapling technique through a gastrotomy. This is the first report of successful surgical reconstruction of a double lumen esophagus.
© 2013 Elsevier Inc. All rights reserved.

1. Case report

A 17 year old Caucasian female presented with long-standing symptoms of chronic gastroesophageal reflux and dysphagia, despite receiving medical and surgical treatments over a prolonged period. She was born premature at 29 weeks, and developed severe reflux, for which she underwent a laparoscopic Nissen fundoplication at 2 years of age. Her symptoms did not resolve and she subsequently required an open revision of the fundic wrap 3 years later with placement of a gastrostomy tube. In between she was also noted to have an esophageal stricture for which she underwent multiple endoscopic dilations. She was then relatively asymptomatic for about 10 years, but at 16 years of age her symptoms recurred significantly with dysphagia to solids, regurgitation and retrosternal chest pain. Her symptoms also included anorexia, food aversion, and nausea. Her weight was below the 5th percentile for her age. She was placed on multiple different medications including proton pump inhibitor (PPI), gabapentin, periactin, amitriptyline and baclofen without success.

Esophagogastroscopy (EGD) described 2 openings at the distal esophagus with an isthmus of tissue in-between (Fig. 1). The larger of these openings represented the true lumen which was severely narrowed while the other connected the distal esophagus to the fundus of the stomach (esophagogastric fistula). There was also a 7 cm segment of pink mucosa which microscopically showed intestinal metaplasia with no dysplasia.

* Corresponding author. Tel.: +1 215 707 4726; fax: +1 215 707 9131.
E-mail address: abbas.abbas@temple.edu (A.E. Abbas).
[1] These authors contributed equally to the work.

0022-3468/$ – see front matter © 2013 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.jpedsurg.2012.12.033

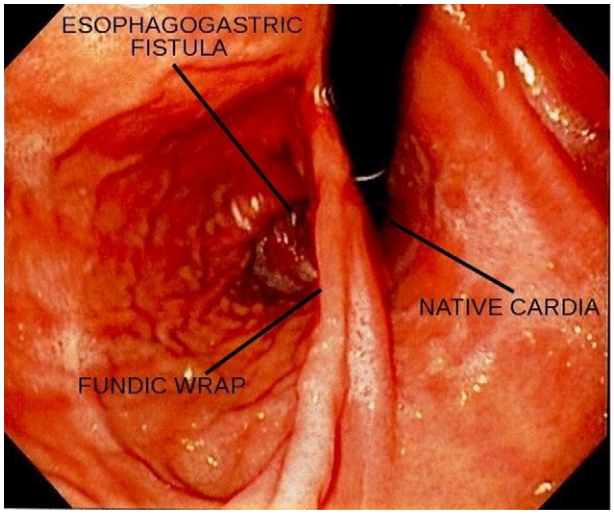

Fig. 1 Transgastric view of the double-lumen anatomy.

Esophageal manometry revealed normal peristalsis with absence of a physiologic lower sphincter. Computerized tomography (CT) with sagittal and coronal reconstruction esophagogastrography confirmed a small esophagogastric secondary lumen and also showed a paraesophageal herniation (Fig. 2).

2. Surgical approach

A preoperative EGD confirmed the same findings and the scope was left inside the esophagus during the procedure (Fig. 3). A left thoracotomy at the ninth intercostal space was made. The diaphragm was retracted inferiorly and a paraesophageal herniation of part of the gastric fundus was identified. Due to previous surgery, the stomach was extremely adherent to the diaphragm and in order to mobilize it completely, the diaphragm was opened along its margin to allow dissection of the abdominal adhesions. Once the stomach was completely free, a gastrotomy was made on the anterior wall of the stomach (Fig. 3). A biopsy forceps was inserted through the endoscope into each of the 2 channels from the esophagus to the stomach. A red rubber tube was passed through the gastrotomy and pulled back using the biopsy forceps through each of the 2 openings separately. These 2 rubber catheters were then used to guide the blades of an endo GIA stapler (4.8 mm) which was then fired across the bridging isthmus between the 2 openings. This created a single wide lumen leading from the esophagus to the stomach and abolished the double lumen anatomy.

It was also evident that the esophagus was foreshortened and would require a lengthening procedure. After taking down the previous fundic wrap, a 6 cm Collis gastroplasty was performed (Fig. 3). The fistulized fundus was unwrapped but was noted to be of insufficient size to perform a wrap. Wedge gastrectomy of the fundus was therefore performed. This process recreated a new esophagogastric junction at the level of the diaphragm. The diaphragmatic crura were then primarily reapproximated posterior to the neoesophagus with pledgeted Prolene sutures. A postoperative esophagogram (Fig. 4) showed free flow of contrast from the esophagus to the stomach. The Collis pouch and distal stomach filled normally and there was no evidence of gastroesophageal reflux on the study. The patient was discharged on the 3rd postoperative day.

3. Clinical progress

After discharge, the patient was followed 1, 6 and 12 and 18 months after surgery. She was completely asymptomatic until her 18 month clinic visit, when she noted new onset morning nausea and was found to be pregnant thus explaining her new symptoms. Despite this, she denied any residual dysphagia, reflux or regurgitation. Her appetite improved and her weight increased by 20% since her surgery. Due to the presence of Barrett's metaplasia and her young age, she was advised to continue PPI therapy (esomeprazole 40 mg twice a day) indefinitely and to have regular surveillance endoscopy every 2 years, the first of which will be soon after she delivers.

4. Discussion

A "double-lumen esophagus" or "double cardia" is a rare entity, seldom reported in the literature [1–6]. It has been

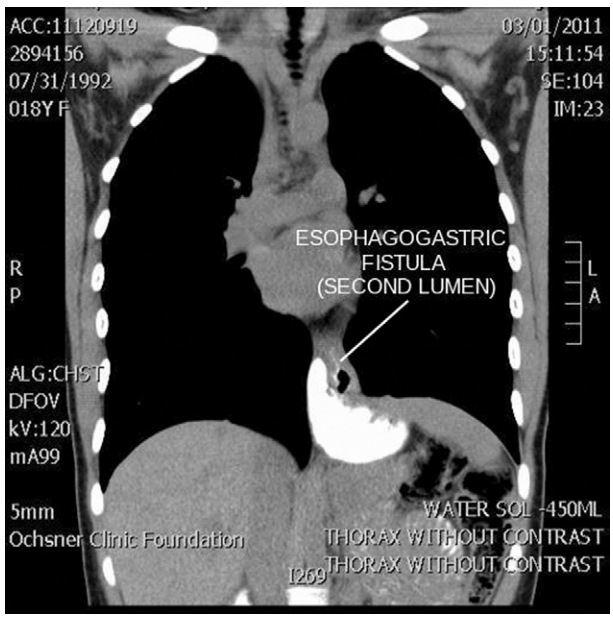

Fig. 2 Preoperative CT esophagogram with Coronal reconstruction showing paraesophageal herniation and a small secondary esophagogastric lumen.

Download English Version:

https://daneshyari.com/en/article/6217568

Download Persian Version:

https://daneshyari.com/article/6217568

Daneshyari.com