

Presternal Esophageal Bypass: Late Sequelae of an Old-Fashioned Operation

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CASE REPORT

A 68-year-old man was referred to our institution for dysphagia, cough, nocturnal regurgitation, weight loss, and recurrent episodes of aspiration pneumonia complicated by respiratory insufficiency. In 1949, at 8 years of age, he accidentally ingested alkaline caustic agents (household lye), resulting in complete esophageal stricture. A presternal esophageal bypass using a long jejunal loop anastomosed to the cervical esophagus and to the anterior gastric wall was performed. Subsequent medical history included left colectomy for carcinoma and hypertension under pharmacological control. Current drug therapy included salbutamol and low-dose aspirin. On physical examination, the subcutaneous bulge corresponding to the esophageal substitute was visible, and the patient admitted to help the passage of the bolus by manual massage over the sternum (Figure 1).

Videofluorography showed a normal transit through the esophagojejunal anastomosis and no aspiration. Computed tomography demonstrated pulmonary fibrosis with volume loss, linear opacities bilaterally, and honeycomb lungs. An upper gastrointestinal endoscopy with a pediatric endoscope showed a widely patent esophagojejunal anastomosis; the transposed antethoracic jejunum had a tortuous course, and the jejunogastric anastomosis was stenotic (Figure 2). The cardia appeared closed at retroflexed view, and the remaining stomach was normal. After anesthesiology consultation, surgical palliation to redo the jejunogastric anastomosis was planned to facilitate emptying of the subcutaneous jejunal loop and reduce its redundancy. The patient refused the proposed treatment and gave full informed consent only for a percutaneous endoscopic gastrostomy.

The use of antethoracic jejunum as an esophageal substitute was proposed about a century ago by Wullstein.¹ In 1907, the first 2-stage bypass of the esophagus with an isolated segment of jejunum was performed by Roux on an 11-year-old boy with caustic stricture; by 1952, 12 children had survived antethoracic jejunal reconstruction at Boston Children's Hospital.² The presternal isoperistaltic colon or jejunal bypass was favored for esophageal substitution in the prethoracotomy era through

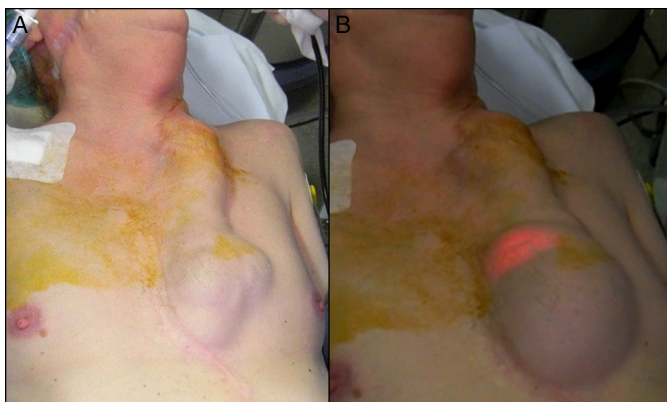


Figure 1. External images showing (A) the presternal jejunal bypass and (B) endoscopic transillumination.

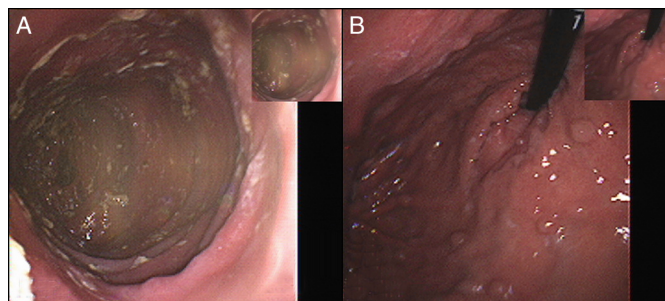


Figure 2. Endoscopy showing (A) the redundant presternal jejunal loop and (B) the stenotic jejunogastric anastomosis.

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the 1940s.³ Bypass surgery was later superseded by retrosternal or intrathoracic reconstruction.^{4,5} Aspiration, not cosmesis, is the major problem in the rare adult patients who are long-term survivors after a presternal jejunal bypass. Stricture at the site of gastric anastomosis and redundancy of the transposed antethoracic jejunal loop may progressively cause an inability to eat and pulmonary fibrosis.

DISCLOSURES

Author contributions: A. Sironi and E. Asti researched and wrote the manuscript. L. Bonavina supervised the writing and is the article guarantor.

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Informed consent was obtained for this case report.

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REFERENCES

1. Wullstein L. Ueber antethorakale oesophago-jejunostomie und operationen nach gleichem prinzip [in German]. *Deutch Med Wschr.* 1904;30(20):734-6.
2. Gross R. *The surgery of infancy and childhood.* Philadelphia: Saunders; 1953.
3. Ochsner A, Owens N. Anterotheracic oesophagoplasty for impermeable stricture of the oesophagus. *Ann Surg.* 1934;100(6):1055-91.
4. Belsey RH. Reconstruction of the esophagus with left colon. *J Thorac Cardiovasc Surg.* 1965;49:33-55.
5. Raffensperger JG, Luck SR, Reynolds M, Schwartz D. Intestinal bypass of the esophagus. *J Pediatr Surg.* 1996; 31(1):38-47.