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Late-onset dysphagia caused by severe spastic peristalsis of a free jejunal graft in a case of hypopharyngeal cancer

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ABSTRACT

Free jejunal transfer is the main technique used for reconstructing a circumferential defect caused by total pharyngo-laryngo-cervical-esophagectomy in certain cancer cases. We report a rare case of severe late-onset dysphagia caused by autonomous spastic peristalsis, which led to complete obstruction of the free jejunal route. A 70-year-old man underwent treatment for hypopharyngeal cancer involving total pharyngolaryngectomy with free jejunal transfer. After uneventful peri- and postoperative recovery, he developed sudden-onset severe dysphagia 22 months later. Gastrografin fluoroscopy revealed abnormal peristalsis and contraction of the transferred jejunum, leading to complete obstruction. Nutritional treatment, application of depressants of peristalsis, and xylocaine injection into the outer space of the jejunal mucosa all failed to alleviate the dysphagia. Surgical treatment involving a longitudinal incision of the jejunal graft, and interposing a cutaneous flap, as a fixed wall, between the incised jejunal margins to prevent obstruction was performed. After further reconstructive surgery involving using a pectoralis major musculocutaneous flap and a split-thickness skin graft to close a refractory jejunum-skin fistula, the dysphagia was permanently alleviated. To our knowledge, this is the first report of severe dysphagia caused by peristalsis of a free jejunal graft.

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1. Introduction

The free jejunal transfer technique is now widely used for reconstructing the circumferential defect caused by total pharyngo-laryngo-cervical-esophagectomy in cases of hypopharyngeal and cervical esophageal cancers. Postoperative long-term swallowing functions after reconstruction are reported to be favorable, and almost all patients require no additional nutritional supplement to the normal diet [1–3]. A free jejunal graft has autonomous peristalsis, and absence of a

propulsive wave with low amplitude and long duration [4–6], which sometimes troubles patients with dysphagia in the early postoperative period. However, such early-onset dysphagia usually ceases 1–2 months after surgery. Conversely, late-onset dysphagia is mostly due to anastomotic stricture [2,3], and to our knowledge, there have been no reports concerning severe dysphagia caused by peristalsis of a free jejunal graft.

Here, we report a rare case of severe dysphagia caused by autonomous spastic peristalsis, which aggravated to a complete obstruction of the free jejunal route, occurring at 22 months after a free jejunal transfer operation.

2. Case report

A 70-year-old man was referred to our hospital for diagnosis and treatment of hypopharyngeal squamous cell carcinoma

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arising from the right pyriform sinus. The tumor had progressed from the right pyriform sinus to the postcricoid area, and destroyed the arytenoid cartilage leading to fixation of the right vocal cord. Since bilateral neck metastasis was observed, this case was classified as clinical stage T3N2c. He had a history of esophageal cancer, which was resected by transhiatal esophagectomy with gastric pull-up 12 years previously.

He underwent bilateral neck dissection and total laryngopharyngectomy with resection of approximately 20 mm of the upper end of the pulled-up stomach. The circumferential defect was reconstructed using the free jejunal transfer technique with microvascular anastomosis. The operation lasted approximately 7.5 h with blood loss of 140 ml. No complications occurred during the perioperative period. He started oral intake 1 week after the operation with no confirmable leakage at the anastomosis, and dysphagia was absent during the perioperative period. Postoperative videofluorography showed no evidence of dysphagia, and correct tension and no loosening of the free jejunal graft (Fig. 1). Postoperative pathological examination revealed negative surgical margins and extra capsular extension of the right level IIa lymph node metastasis. Consequently, radiotherapy was performed 6 weeks after the operation with a daily dose of 2 Gy, with 44 Gy in total for the whole neck and supraclavicular areas, and a booster dose of 22 Gy for the right level II area. Oral intakes decreased temporarily because of pain due to radiation-induced pharyngeal mucositis, but these symptoms gradually alleviated. Five days after completion of radiotherapy, normal oral diet was restored with no symptoms of dysphagia, and he was discharged from hospital. No dysphagia developed, and his weight increased from 32 kg after surgery to 36 kg, 6 months after discharge.

Twenty-two months after surgery, he suddenly experienced difficulty swallowing daily foods, and even a glass of water, which necessitated hospitalization. Despite our suspicion of anastomotic stricture, the endoscope was advanced through the pharynx and transferred jejunum all the way down to the

pulled-up stomach with no apparent obstruction. Contrast-enhanced computed tomography (CT) showed good enhancement of the free jejunum, reflecting favorable blood flow to the jejunal graft (Fig. 2b). No obstruction or constriction was evident on CT. In contrast, gastrografin fluoroscopy revealed abnormal peristalsis followed by contraction of the transferred jejunum immediately after swallowing of the contrast medium, finally leading to complete obstruction (Fig. 2a).

The patient was conservatively treated with nutrition by nasogastric tube and central venous nutrition, but this failed to relieve the patient's dysphagia. We therefore conducted an aggressive, but still conservative, non-surgical treatment as described below. (1) Although the apparent stenosis site was not observed, experimental endoscopic dilation of the anastomosis site and jejunal graft was performed. The endoscope was inserted into the stomach smoothly without resistance. Although the anastomotic site and the jejunal graft were dilated without any obstruction (Fig. 2c–e), no improvement in dysphagia was achieved. (2) To suppress the spasmodic contraction, butylscopolammonium bromide was administered orally or intramuscularly, and peppermint oil was directly sprayed onto the jejunal graft endoscopically. However, these depressants of peristalsis were ineffective in this case. Similarly, injection of xylocaine into the outer space of the jejunal mucosa under ultrasound examination was also unsuccessful in depressing peristalsis.

Severe dysphagia due to the unusual autonomous spastic peristalsis persisted for 5 weeks after admission with no

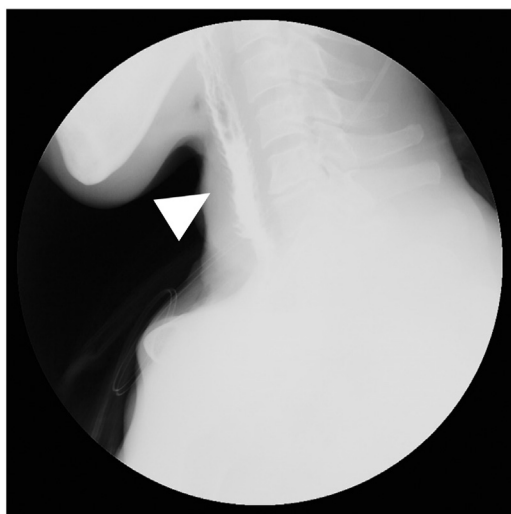


Fig. 1. Videofluorography after total laryngopharyngectomy and free jejunal transfer reconstruction. There is no evidence of dysphagia with correct tensions and no loosening of the free jejunal graft (arrowhead).

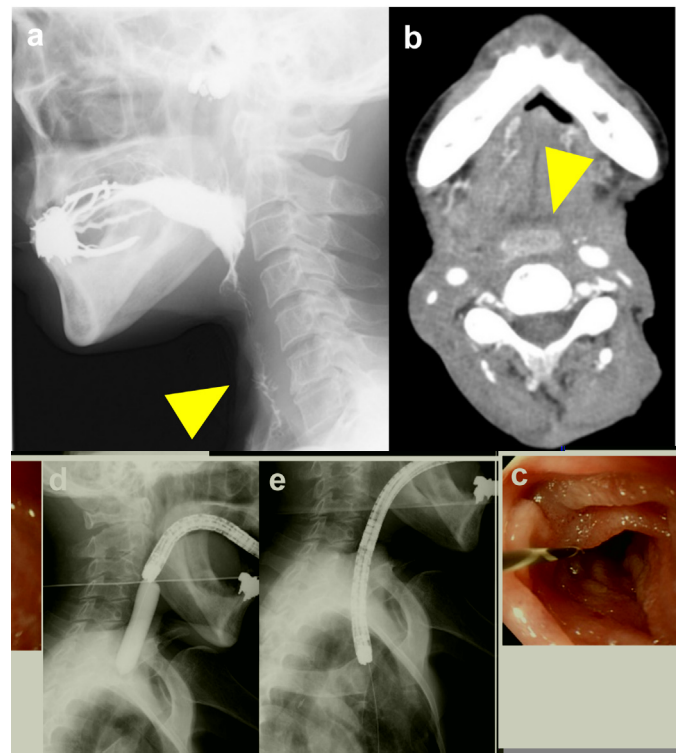


Fig. 2. (a) Gastrografin fluoroscopy showing complete obstruction caused by spasmodic contraction of the free jejunum (arrowhead). (b) Contrast-enhanced computed tomography (CT) showed good enhancement of the free jejunum (arrowhead). (c) The endoscope was inserted into the stomach smoothly without resistance. (d, e) Dilatation of the anastomotic site and jejunal graft was performed without obstruction.

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