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BRIEF REPORT

# Persistent chest pain in young male patient: Jackhammer esophagus treated with peroral endoscopic myotomy

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chest pain, jackhammer esophagus, peroral endoscopic myotomy, preserve the lower esophageal sphincter.

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A 23-year-old young male patient was referred to our institution for persistent severe chest pain and dysphagia lasting for 7 months. The symptoms were refractory for proton pump inhibitors and prokinetic drugs. Electrocardiogram and chest radiography findings were normal. Although barium esophagography did not show significant findings, gastroendoscopy demonstrated abnormal segmental contractions above the esophageal gastric junction (Fig. 1a). High-resolution manometry (HRM) indicated that the pressure of the median lower esophageal sphincter (LES) and median integrated relaxation pressure (IRP) was within

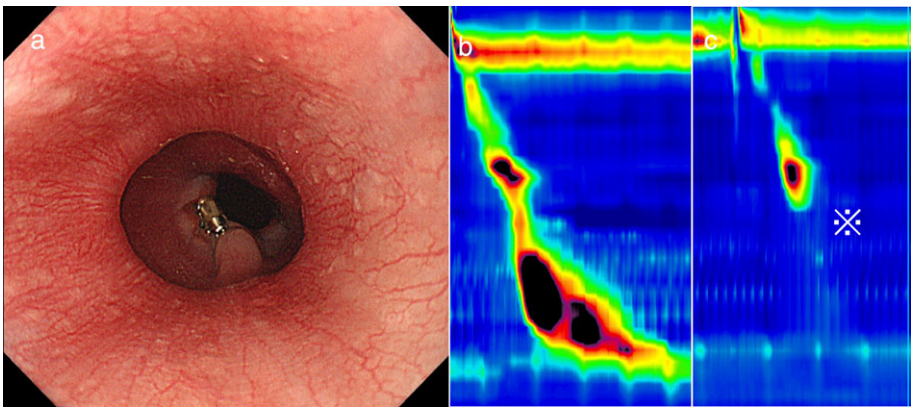


**Figure 1** Initial esophagogastroduodenoscopy (EGD) shows segmental contractions right above the gastro-esophageal junction (GEJ), which may be related to the symptoms. A clip was applied during a previously performed manometry. There was no evidence of stricture (a). High-resolution manometry (HRM) before peroral endoscopic myotomy (POEM) shows a hypercontractile esophagus expressed as distal contractile integral (DCI) > 8000 mmHg cm s 2 times out of 10 (b). (c) HRM findings 2 weeks after POEM. ※ shows disappearance of hypercontraction in the lower esophagus after POEM, and maximum DCI also decreased to <2000 mmHg cm s. Abnormal contraction of the lower segment was resolved, which resulted in significant decrease of DCI.

normal range (12.4 mmHg and 12.7 mmHg, respectively), and hypercontractile swallow (distal contractile integral [DCI] > 8000 mmHg cm s) was more than 2 swallows out of 10 (Fig. 1b).

According to HRM, the young male patient was diagnosed with jackhammer esophagus.

Peroral endoscopic myotomy (POEM) was performed in the lower esophagus. Based on HRM findings, we chose to partially preserve LES and perform contraction only in the lower segment.

The patient's chest pain recovered promptly after the procedure, and other symptoms such as dysphagia slowly resolved in 2 months. HRM performed 2 weeks after POEM showed complete improvement of contraction of the lower segment: maximum and mean DCI was less than 2000 mmHg cm s (Fig. 1c).

Jackhammer esophagus is a rare esophageal motility disorder that is characterized by severe dysphagia and chest pain. Jackhammer esophagus is found in lower esophageal contraction on endoscopy imaging; moreover, the hypercontractile swallows in HRM is more than 2 swallows out of 10. LES pressure and IRP in HRM are within normal range, which is in contrast to achalasia that shows high IRP values. The treatment strategy for patients with jackhammer esophagus has not been well established.[1] POEM was developed for the treatment of achalasia by H. Inoue.[2] It is also considered to be a tolerable treatment for patients with spastic disorders, including esophageal achalasia and jackhammer esophagus.[3] There is an ongoing debate on whether there should be an incision of the LES during myotomy[4] in patients with jackhammer esophagus. In this case, we only made a lower esophagus muscle incision, with the partial left LES intact to preserve the function of the esophageal gastric junction. Our case showed that jackhammer esophagus should be considered a differential diagnosis in relatively young patients with chest pain. POEM could dissolve the jackhammer esophagus if it was refractory with pharmacology therapy.

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