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CASE REPORT

Acid suppressive therapy improved symptoms due to circumferential cervical inlet patch with proton pumps (H^+/K^+-ATPase)

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Author contributions: Yamada T wrote the paper; Tsuji A treated the patient and performed endoscopy; Onoue S, Kaneko M, Osawa S and Saida Y contributed to the paper design and coordination; Tanioka F contributed to the pathological examination.

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Abstract

Cervical inlet patch (CIP), also referred to as esophageal heterotopic gastric mucosa, is regarded as the residue of columnar epithelium of the embryonic esophagus. Narrow band imaging increases the detection rate of CIP. Herein, we present a 55-year-old man with symptomatic circumferential inlet patch. He exhibited globus and dysphagia, and esophagogastroduodenoscopy found cir-cumferential CIP, where im-munohistochemistry revealed the existence of pro-ton pumps (H^+, K^+-ATPase). His throat symptoms were relieved by acid suppressive therapy with pump inhibitors. This case indicated that CIP should be considered as a differential diagnosis for the cause of globus symptoms in rare cases.

Key words: Cervical inlet patch; Proton pump inhibitor

Core tip: Cervical inlet patch (CIP) is the esophageal heterotopic gastric mucosa in the cervical esophagus. We present a 55-year-old man exhibiting circumferential CIP with globus and dysphagia. Proton pump inhibitors relived these throat symptoms. Immunohistochemistry revealed existence of proton pumps in the CIP lesion. The throat symptoms were suggested to be related with CIP and acid secretion.

Yamada T, Tsuji A, Onoue S, Kaneko M, Tanioka F, Osawa S, Saida Y. Acid suppressive therapy improved symptoms due to circumferential cervical inlet patch with proton pumps (H^+/K^+-ATPase). *World J Clin Cases* 2017; 5(11): 403-406 Available from: URL: http://www.wjgnet.com/2307-8960/full/v5/i11/403.htm DOI: http://dx.doi.org/10.12998/wjcc.v5.i11.403

INTRODUCTION

Esophageal heterotopic gastric mucosa (HGM), also referred to as cervical inlet patch (CIP), is considered to be the residue of columnar epithelium of the embryonic esophagus[1,2]. The diagnosis rate of CIP is increasing because of the recent development and spread of image-enhanced endoscopy, including narrow band imaging (NBI)[3,4]. Patients with CIP rarely require treatment as most cases of CIP are asymptomatic. However, some reports indicated complications associated with acid secretion from CIP[5-7]. Herein, we present a patient with circumferential CIP in whom proton pump in-hibitors (PPI) were effective and proton pump existence was confirmed by immunohistochemistry.

CASE REPORT

A 55-year-old man visited the department of otolaryngology exhibiting globus and dysphagia without heartburn or epigastric pain. His past medical history only included an operation for appendicitis. Physical examination and laboratory findings were unremarkable. Laryngoscopy did not reveal the cause of the throat symptoms. He was then introduced to the department of gastroenterology and esophagogastroduodenoscopy (EGD) was performed to determine the cause. EGD revealed circular HGM in the cervical esophagus, the HGM was 19 to 21 cm from the incisor. The lesion appeared reddish by white light imaging (Figure 1A), whereas by NBI, it appeared as a dark brown lesion clearly distinguished from light green squamous epithelium (Figure 1B). There was only mild reflux esophagitis (Los Angeles grade A), but no esophageal hiatus hernia at the esophagogastric junction. His throat symptoms improved quickly by acid suppression therapy with PPI.

Endoscopic biopsy from the circumferential CIP lesion demonstrated foveolar epithelium and fundic glands (Figure 2A). Furthermore, to confirm the relationship between the throat symptoms and acid secretion from the CIP, we performed immunohistochemistry and found proton pump, H^+, K^+-ATPase alpha subunits. Immunohistochemical staining was concentrated in the glands of CIP (Figure 2B).

DISCUSSION

CIP, also referred to as cervical esophageal HGM, is generally regarded as a congenital condition that results from an incomplete replacement by squamous epithelium, and the differentiation of persistent columnar-lined mucosa into cervical HGM[1,2]. The incidence of CIP was reported as 0.1% to 13.8%[3,8]. Using NBI endoscopy, there was increase in the detection of CIP[4].

Some reports demonstrated acid secretion from CIP using pH monitoring[5-7]. Here, we demonstrated the existence of proton pumps (H^+, K^+-ATPase) in CIP in a symptomatic patient by immunohistochemistry. The efficacy of PPI also supports the theory that acid secretion from proton pumps in CIP is the cause of throat symptoms. In the present case, the patient had mild esophagitis. Although there is a possibility that gastroesophageal reflux disease was one of the causes of the globus symptoms, we considered cervical CIP to be the main cause of his globus symptoms because of the existence of proton pumps in the large CIP and the previous reports of the relationship between throat symptoms and acid secretion from CIP. However, this case report did not directly show the relationship between existence of proton pumps and their acid secretion function in CIP. Further studies are needed to demonstrate the usefulness of immunohistochemistry for proton pump to predict PPI efficacy in patients with symptomatic CIP.

Recently, argon plasma coagulation and radio-frequency ablation were reported to be effective for symptomatic CIP[9-11]. However, these endoscopic ablation techniques are not available in all countries, including Japan. PPI treatment is more widely available than endoscopic ablation. PPI should be selected first in such situations. Furthermore, the detection of proton pumps by immunohistochemistry may predict the efficacy of PPI for throat symptoms in patients with CIP.

In summary, we reported a 55-year-old man with circumferential CIP where immunohistochemistry revealed proton pump existence. His throat symptoms were relieved by acid suppressive therapy with PPI. This case indicated that CIP should be considered as a differential diagnosis for the cause of globus symptoms in rare cases.

COMMENTS

Case characteristics

A 55-year-old man visited to complaint globus and dysphagia without heartburn

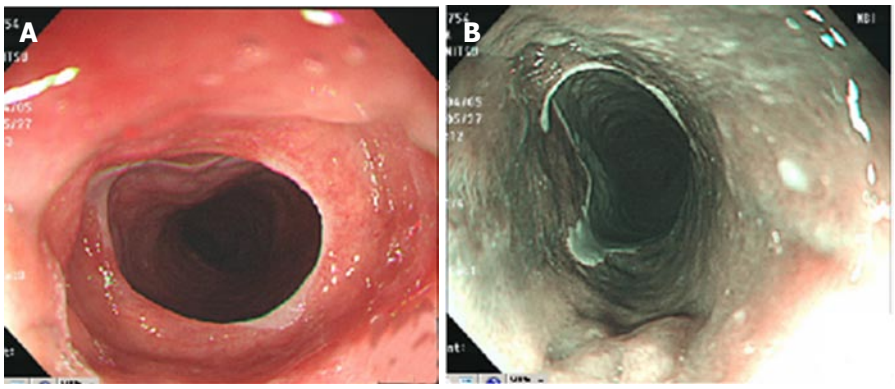

Figure 1 Endoscopic image of circumferential cervical inlet patch. A: White light image showing circular reddish cervical inlet patch (CIP) mucosa; B: On narrow band imaging, CIP is the circular dark brown area and squamous mucosa is light green. This sharp contrast of color helps to detect CIP.

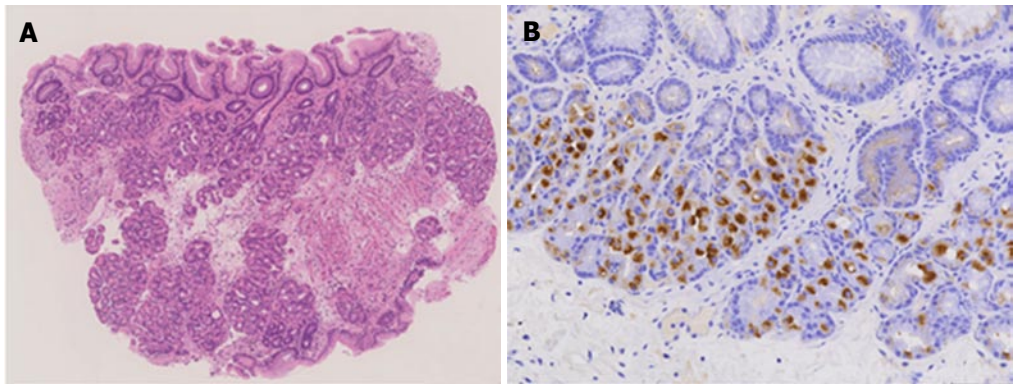

Figure 2 Histopathological findings of biopsy specimen. A: Endoscopic biopsy of cervical inlet patch (CIP) showing foveolar epithelium and fundic gland (Hematoxylin and eosin staining); B: Immunohistochemistry for proton pump alpha subunit demonstrated concentration of staining in glands of CIP (X 400).

or epigastric pain.

Clinical diagnosis
Endoscopy revealed circumferential cervical inlet patch (CIP).

Differential diagnosis
Gastroesophageal reflux and globus hystericus.

Imaging diagnosis
Esophagogastroduodenoscopy revealed circumferential CIP, where appeared reddish by white light imaging and appeared as a dark brown clearly distinguished from light green squamous epithelium by narrow band imaging.

Pathological diagnosis
Immunohistochemistry for proton pump alpha subunit demonstrated concentration of staining in glands of CIP.

Treatment
Acid suppressive therapy with proton pump inhibitors (PPI) improved globus and dysphagia in a patient with CIP.

Related reports
Although some reports demonstrated acid secretion from CIP using pH monitoring, this is the first report that demonstrated the existence of proton pumps (H^+, K^+-ATPase) in CIP in a symptomatic patient by immunohistochemistry. The relationship should be elucidated between the existence of proton pump and acid secreting function in CIP.

Term explanation
CIP is esophageal heterotopic gastric mucosa, which is considered to be the residue of columnar epithelium of the embryonic esophagus.

Experiences and lessons
CIP should be considered as a differential diagnosis for the cause of globus symptoms in rare cases.

Peer-review
This case report clearly presented a case of CIP which expressed the proton pump and was successfully treated by PPI.

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