Research Article

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Inlet Patch: Consecutive 100 Cases

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1. Abstract

1.1. Background/Aims:
Inlet patch is an island of heterotopic gastric mucosa located at the proximal esophagus. It is not rare but often overlooked by endoscopists because its location. In this study we evluated the demografic findings, endoscopic views, symptoms, presence H.pylori and the necessity of treatment in inlet patch cases.

1.2. Methods:
Hundred consecutive cases diagnosed with inlet patch were evaluated retrospectively.

1.3. Results :
Inlet patch size ranged from 3 to 40 mm. Most cases had more than one islet. In most of our cases, IP was detected accidentally during the examination. A symptom-finding relationship was established between patients who had globus and dysphagia. These were totally six patients, five of them had globus and one had dysphagia who had an ulcer which was related to H.pylori.

1.4. Conclusions:
Inlet patch rarely causes symptoms and it is usually diagnosed incidentally. In our case series, the main symptoms that may be associated with IP are globus and dysphagia.

2. Key words :
Inlet patch, globus, dysphagia, Helicobacter pylor

3. Introduction

Inlet patch (IP) is an island of heterotopic gastric mucosa located at the proximal esophagus just at the distal of upper esophageal sphincter and it is believed to be an embryologic remnant. It is not rare but often overlooked by endoscopists because of its location. But recent studies suggest endoscopic diagnosis of IP increases with endoscopist awareness up to three fold when using enhanced imaging techniques such as narrow band imaging1. In adults undergoing diagnostic conventional esophagogastroduodenoscopy, incidence ranges between 0.1% and 10% 2. Most IPs are usually asymptomatic, reported symptoms include cough, globus sensation, sore throat, hoarseness, excessive throat clearing, heartburn, dysphagia, and regurgitation1-3. Symptoms are likely due to acid and mucus production. H. pylori can colonise in IP.Presence of H.pylori in IP is closely correlated with H. pylori density in the stomach4. The aim of this study was to evluate the demografic findings, endoscopic views, symptoms, presence H.pylori and the necessity of treatment in cosecutive 100 IP case, retrospectively.

4. Material and Method

Between 2017 and 2023, 100 consecutive IP cases in a single center were evaluated, retrospectively.Due to our interest in the inlet patch, the esophagus is routinely examined with narrow band imaging (NBI) during endoscopic examination at the exit. Rapid urease tests for Helicobacter pylori were routinely taken from the antrum and inlet patch areas (Asan Helicobacter Test, Asan Pharma Co Ltd) and also biopsies for histopathology when it's necessary. Patients demographic finding, endoscopic views, symptoms and the presence of H.pyloriand also IP related treatments were also evaluated. This study is an archive evaluation of a freelance author and consent was obtained from all patients before procedure.

5. Results

Male/female ratio was equal (50/50) and the mean age was 49.3 years (18-80).The main endoscopy indications were dyspepsia, reflux disease, globus and dysphagia. Inlet patch size ranged from 3 to 40 mm. Most cases had more than one islet (Table 1). It was single in 38 cases, two in 47 cases, three in 9 cases, four in 4 cases, seven in 1 case, and 340 degrees in one case.

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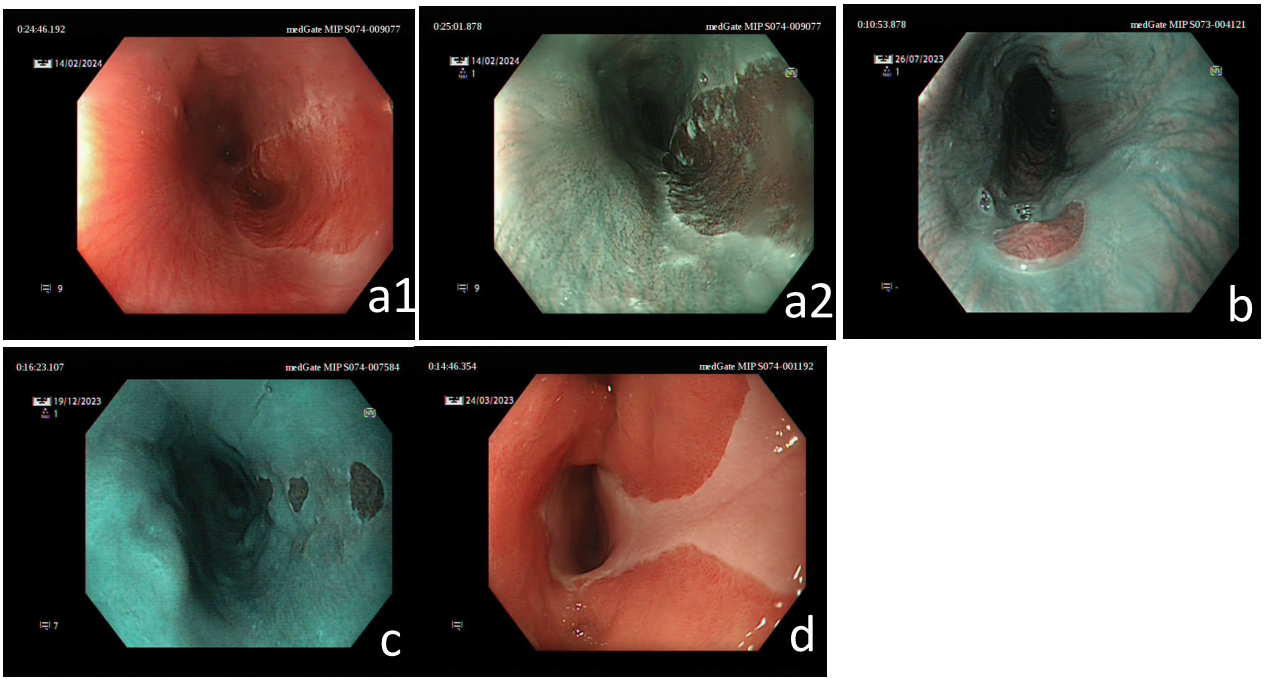

Figure 1: Image examples for inlet patch: a1.IP with WLI, a2.with NBI, b.Single island (NBI), c.Three islands (NBI), d. 340 degree IP. (IP: Inlet patch, WLI: White light imaging, NBI: Narrow band imaging)

H.pylori presency in the stomach was 23%, and in the IP it was 8%. In seven cases in which H.pyloriwas positive in the IP,H.pylori was also detected in the stomach. One of the cases in which H.pylori was positive in the IP had gastrectomy due to gastric cancer. In all H.pylori positive cases the size of IP was >10 mm. A symptom-finding relationship was established between patients who identified only globus and a patient who was found to have an ulcer. These were totally six patients, five of them had globus and one had dysphagia who had an ulcer related to H.pylori. Four pateints who had globus treated with argon plasma coagulation (APC) and the patient who had ulcer related to H.pylori treated with anti-H.pylori treatment. Barrett's esophagus was present in 4 cases, all of which were short segment.

Table 1: Numbers of IP islets and the cases

Shape and number of IP	Number of cases
1 islet	38
2 islets	47
3 islets	9
4 islets	4
7 islets	1
340 degree	1

6. Discussion

Most IPs are usually asymptomatic, reported symptoms include cough, globus sensation, sore throat, hoarseness, excessive throat clearing, heartburn, dysphagia, and regurgitation. Rarely on the presence of H.pylori, it can be the cause of ulcers and cancer1-3. The coexistence and common pathogenesis of IP and Barrett's esophagus have been discussed in the literature5-7. In our series, Barrett's esophagus and IP coexistency was rare. It was detected in only 4 cases, all of which were short segment Barrett's esophagus. This may be related to the rarity of Barrett's esophagus in our country 8. This is not a prevalence study, but in two studies from our country it has been found as %1.679 and %3.610 in the population undergoing endoscopy. In this study we mostly focused on demographic finding, endoscopic views, symptoms, presence of H.pylori and also treatment requirements in IP cases. In most of our cases, IP was detected accidentally during the examination. A symptom-finding relationship was established between patients who identified only globus and a patient who was found to have an ulcer. These were totally six patients, five of them had globus and one had dysphagia who had an ulcer related to H. pylori. IP's importance as a cause of throat symptoms has been recognised, and led to a change in the Rome IV criteria for globus management, with emphasis on ruling out the condition 11. Studies have shown ablative techniques such as APC to be effective in their management 12 and most recently radiofrequency ablation13. Ablation treatment have been found effective in long term14. Of the 5 patients with globus symptoms, ablation with APC was performed in four of them who accepted the treatment. All patients with globus symptom had more than one IP islands and all were bigger than 10 mm.

All patients who underwent ablation with APC did not re-apply due to symptoms in a mean fourt-year follow-up. H.pylori lives where the gastric mucosa is. Therefore H.pylori is expected to be present in the IP.

Presence of H.pylori in IP is closely correlated with H. pylori density in the stomach4. In our case series, H.pylori presency in the stomach was 23%. This is consistent with our previous endoscopic study15, and in the IP H.pylori presency was 8% in our case series. In seven cases in which H.pylori was positive in the inlet patch, H.pylori was also detected in the stomach. One of the cases in which H.pylori was positive in the inlet patch had gastrectomy due to gastric cancer. In all H.pylori positive cases the size of IP was >10 mm H. pylori colonization of the inlet patch may potentially predispose to similar disorders associated with gastric colonization, such as peptic ulcer disease. In our case series, an ulcer was detected in one patient who had dysphagia symptom and the patient's symptom had completely recovered after Helicobacter treatment. This case was previously published as a case report 2. Therefore, careful examination of the cervical esophagus is crucial during the evaluation of a patient with dysphagia. Since recent studies revealed that narrow-band imaging facilitates the detection of inlet patches, we suggest using narrow-band imaging when examining the esophagus at the exit. As a result, IP rarely causes symptoms and it is usually diagnosed incidentally. The main symptoms it may be associated with are globus and dysphagia.

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