

**Original Article**

**Frequency of Barrett Esophagus in Patients with Symptoms of Gastroesophageal Reflux Disease**

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**ABSTRACT**

**Objective:** To determine frequency of Barrett's esophagus in patients with symptoms of gastroesophageal reflux disease (GERD).

**Patients and Methods:** The Prospective, observational study was conducted at Department of Gastroenterology, Military hospital Rawalpindi Pakistan, from January 2005 to May 2005. One hundred fifty subjects with symptoms of GERD were included in the study. Upper gastrointestinal endoscopy was performed with Pentax EG 2940 to determine the underlying etiology. Three biopsy samples were taken to confirm the diagnosis.

**Results:** Out of 150 subjects, 21(14%) were found to have Barrett's esophagus. The remaining 129(86%) showed inflammatory changes. Out of 21(14%) cases of Barrett's esophagus, 19(90.5%) were males and 2(9.5%) were females.

**Conclusion:** Early upper gastrointestinal endoscopy and biopsy is recommended in patients with symptoms of GERD, as Barrett's esophagus is relatively common in our set up. (Rawal Med J 2008;33:205-207).

**Key words:** Barrett's esophagus, gastroesophageal reflux, GERD, endoscopy

## **INTRODUCTION**

Gastroesophageal reflux disease (GERD) is a common condition with its severity varying from often ignored retrosternal burning to a severe chest pain which keeps the patient up all night.<sup>1</sup> Physiologic reflux episodes are typically postprandial, short-lived and rarely occur during sleep while pathologic are more frequent and may occur during sleep. Reflux esophagitis describes a subset of patients with symptoms of GERD who have endoscopic or histopathologic evidence of esophageal inflammation.<sup>2</sup> Untreated, reflux esophagitis may lead to chronic complications such as Barrett's esophagus.

Barrett's esophagus is an acquired premalignant condition characterized by progressive columnar metaplasia of the distal esophagus caused by longstanding gastroesophageal reflux and reflux esophagitis. Endoscopy and biopsy are required to make a diagnosis.<sup>3</sup> It is usually discovered during endoscopic examinations of middle-aged and older adults whose mean age at the time of diagnosis is approximately 55 years and rarely occurs before the age of five.<sup>4</sup> The sensitivity of endoscopy to detect Barrett's is related to the length of involved mucosa, with detection being more likely in patients who have long segment Barrett's.<sup>5</sup> The esophageal columnar metaplasia predisposes to the development of adenocarcinoma,<sup>6</sup> and thus such patients are advised to have regular endoscopic surveillance to detect early curable disease.<sup>7</sup> Barrett's esophagus was reportedly uncommon in blacks and Asians.<sup>8</sup> The aim of this study was to determine the current status of this entity in patients with GERD in our set up.

## **PATIENTS AND METHODS**

This prospective observational study was conducted from January 2005 to May 2005 at Department of Gastroenterology, Military Hospital Rawalpindi. All subjects with age more than 18 years and symptoms of GERD (heart burn, retrosternal burning, water brash, globus sensation, chest pain, and regurgitation of more than three months duration) were enrolled in this study. Non-probability sampling technique was used and an informed consent was taken. Subjects with history of peptic ulcer disease, helicobacter pylori eradication therapy, positive HBsAg and anti-HCV antibodies, long term NSAID therapy, hiatus hernia and esophageal stricture were excluded.

Upper gastrointestinal endoscopy was performed on all patients with Pentax EG 2940. Lignocaine 4% spray and iv diazepam 5mg were used for premedication. Three biopsies were taken from 4 cms proximal to gastroesophageal junction. Findings were recorded in a previously designed proforma. The data were analyzed using SPSS 11.0 statistical software.

## RESULTS

One hundred fifty subjects were enrolled in the study. Out of these, 112 (74.7%) were males and 38(25.3%) were females. Age ranged from 18 to 86 years with mean of  $42 \pm 13.67$  (Table 1). Twenty-one (14%) patients were found to have Barrett's esophagus on endoscopy. This was confirmed on histopathology. Remaining patients showed inflammatory changes. Out of 21(14%) cases of Barrett's esophagus, 19(90.5%) were males and 2(9.5%) were females. Majority of the male subjects 15(78.9%) were in the range of 18 to 38 years of age.

**Table 1. Endoscopic findings with age and gender.**

| Gender | Age (years) | Endoscopic findings |          |
|--------|-------------|---------------------|----------|
|        |             | Negative            | Positive |
| Male   | 18 - 38     | 48                  | 15       |
|        |             | 51.6%               | 78.9%    |
|        | 39 - 59     | 30                  | 1        |
|        |             | 32.3%               | 5.3%     |
|        | 60 - 80     | 14                  | 3        |
|        |             | 15.1%               | 15.8%    |
|        | > 80        | 1                   | -        |
|        |             | 1.1%                | -        |
| Female | 18 - 38     | 17                  | 1        |
|        |             | 47.2%               | 50.0%    |
|        | 39 - 59     | 15                  | 1        |
|        |             | 41.7%               | 50.0%    |
|        | 60 - 80     | 4                   | -        |
|        |             | 11.1%               | -        |

In patients other than Barrett's esophagus, various abnormalities like pangastritis (22%), antral gastritis (19.3%), mild antral gastritis (14%) and esophagitis (5%) were noted. Endoscopy was normal in 1.3%.

Nine (42.9%) patients out of 21 cases of Barrett's esophagus had symptoms of gastroesophageal reflux in the range of 1-5 years duration and similar number was observed in the range of 6-10 years. 14.3% had symptoms for more than 10 years (Table 2).

**Table 2. Duration of symptoms of GERD.**

| Duration (years) | Endoscopic findings |          |
|------------------|---------------------|----------|
|                  | Negative            | Positive |
| Less than 1      | 80                  | -        |
|                  | 62.0%               | -        |
| 1 – 5"           | 49                  | 9        |
|                  | 38.0%               | 42.9%    |
| 6 - 10           | -                   | 9        |
|                  | -                   | 42.9%    |
| More than 10     | -                   | 3        |
|                  | -                   | 14.3%    |
| Total            | 129                 | 21       |

Positive=Barrett's esophagus, Negative=other findings

## DISCUSSION

An earlier study from Pakistan reported frequency rate of Barrett's esophagus to be 32% with mean age of patients 41.3 years and predominance of males.<sup>9</sup> Frequency of Barrett's esophagus in our study was 14 %, slightly higher than other studies.<sup>6</sup> The reason could be intake of spicy meals in our population resulting in gastroesophageal reflux. Mean age of patients was 42 years which is in accordance with the existing local data.<sup>9</sup> Male to female ratio was higher in our study. Nine (42.9%) out of 21 cases of Barrett's esophagus had

symptoms of GERD in the range of 1-5 years with similar number in the range of 6-10 years. Fourteen percent had symptoms for more than 10 years, which is near 37% reported in earlier study from Pakistan.<sup>9</sup>

The lower frequency of Barrett's in Western developed countries may be the frequent use of diagnostic upper GI endoscopy in patients with symptoms of reflux. In our study, frequency of Barrett's esophagus was comparable to western countries but its complications like esophageal ulceration, stricture and hemorrhage are uncommon. In our country, diagnostic upper GI endoscopy is only performed when the symptoms are of severe intensity and are refractory to treatment. Thus, when patients undergo endoscopy, Barrett esophagus has already developed. In the present study, adenocarcinoma was not seen in any case with Barrett's esophagus. The frequency of adenocarcinoma in Barrett's esophagus has been reported in range from 0-37.5%.<sup>11</sup>

The reliability of endoscopy for detection of Barrett's esophagus is approximately 80 percent.<sup>12</sup> GERD associated with Barrett's esophagus frequently is complicated by esophageal ulceration, stricture, and hemorrhage. Some studies have suggested that patients with a peptic stricture have a higher prevalence of Barrett's esophagus than those without strictures but this association has been challenged.<sup>12</sup> In conclusion, routine endoscopy and biopsy is recommended for patients with symptoms of GERD due to higher frequency of Barrett's esophagus in such individuals. Periodic endoscopic examination and biopsy should be done in patients with Barrett's esophagus for early detection of complications. Etiological factors and malignant transformation of Barrett's esophagus requires further studies.

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