# **Case Report**

# Complete Disappearance of Barrett's Epithelial Metaplasia Following Long Term

# **Proton Pump Inhibitor Therapy**

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The previous paradigm that Barrett's epithelial metaplasia is an irreversible premalignant condition has recently been challenged by evolution of reports and studies that documents partial or complete regression of Barrett's metaplasia by long term medical therapy with endoscopic and histological follow up. This case documents complete regression of intestinal metaplasia in esophagus after long term proton pump inhibitor therapy with endoscopic and histological follow up.

Keywords: Barrett's esophagus, Proton pump inhibitor, Endoscopy, chronic gastro-esophageal reflux disease.

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## Introduction

Barrett's esophagus is thought to be a premalignant condition secondary to chronic gastro-esophageal reflux disease<sup>[1]</sup>.It is an abnormal change (metaplasia) in the cells of the lower portion of the esophagus, characterized by the replacement of the normal stratified squamous epithelium lining of the esophagus by specialized intestinal epithelium with goblet cells. The medical significance of Barrett's esophagus is its strong association (about 0.5% per patient-year) with esophageal adenocarcinoma, a very often deadly cancer,<sup>[2][3]</sup>because of that it is considered to be a premalignant condition. We describe a case of Barrett's epithelial metaplasia that completely eliminated after several years of treatment with proton pump inhibitor.

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# **Case Report**

A 67 years old Caucasian gentleman underwent Esophagogastroduodenoscopy (EGD) for evaluation of longstanding heartburn for which he had used over the counter medicines only with partial relief. EGD showed evidence of early Barrett's esophagus (Fig.1a). Biopsy also confirmed presence of specialized intestinal metaplasia (Fig. 1b). Patient was put on pantoprazole 40 mg daily AM. Pantoprazole is a proton pump inhibitor for the treatment of erosive esophagitis and other conditions involving high Four years later he has another level of stomach acid. EGD which showed mild gastroesophageal reflux disease (GERD) but no salmon colored mucosal islands (Fig.2a).Biopsies taken showed no Barrett's metaplasia (Fig.2b). One year later EGD was done and despite it showed mild GERD with pink colored mucosa (Fig.3a), but the biopsies again showed no evidence of Barrett's metaplasia (Fig.3b). Patient took pantoprazole up to the last EGD but after that was switched to famotidine 20 mg at bedtime, he has remained symptom free.

#### Discussion

Figure 1. Early Barrett's esophagus. Endoscopic view (a) shows early Barrett's esophagus with salmon colored mucosal islands. Microscopic view (b) shows specialized intestinal metaplasia.

Barrett's esophagus is a condition in which squamous epithelium of the esophagus has been replaced by

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specialized intestinal epithelium with goblet cells.Barret's esophagus is a premalignant condition; with 10 fold increased risk for esophageal cancer compared to the risk in general population<sup>[4]</sup>.Currently the treatment of Barrett's esophagus is aimed at several targets which include symptom relief, healing of esophagitis and prevention of peptic stenosis; these objectives are nowadays well achieved by medical acid suppression therapy using either H2 blocker or preferentially proton pump inhibitor and by antireflux surgery, all these modalities accompanied by life style changes. The risk of esophageal adenocarcinoma in Barrett's patient correlates with the severity of GERD,the length of the Barrett's segment and the presence of dysplasia<sup>[5][6]</sup>. This cancer risk might therefore be decreased by complete reversion of the metaplasia into normal squamous epithelium.Barrett's metaplasia results from chronic exposure of distal esophagus to gastric acid. This reflux has been reduced by proton pump inhibitor therapy and other antireflux measures which may lead to Barrett's regression as seen in this case and other numerous studies<sup>[7][8][9][10]</sup>, in contrary to the known idea that Barrett's esophagus is an irreversible condition. However the optimal form of antireflux therapy to affect reversal of Barrett's esophagus is as yet unknown.

#### Conclusion

As Barrett's esophagus result from chronic GERD, Barrett regression can theoretically be obtained by antireflux treatment,thus a decrease of cancer risk might be anticipated if treatment could induce a regression of Barrett's epithelial metaplasia. This case report adds to the growing body of literature suggesting Barrett's esophagus can be totally eliminated, with long term proton pump inhibitor therapy with endoscopic and histological follow up,in this case the elimination of Barrett's metaplasia may be due to optimum antireflux treatment used or/and due to small island of metaplasia that was removed by multiple biopsies.

# **Conflict of interest**

No conflict of interest to disclose, we have received no support or commercial funding for this case report, or for any products mentioned herein. We would like to express our appreciation to Dr. Robyn A. Beach M.D. for his valuable help.



Figure 2. Mild GERD. Endoscopic view (a) shows mild GERD without salmon colored mucosal islands. Microscopic view (b) shows normal squamocolumnar junction with absence of goblet cells.



Figure 3. Mild GERD . Endoscopic view (a) shows mild GERD with pink colored mucosa. Microscopic view (b) shows squamocolumnar junction with absence of goblets cells.

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