Abstract. A case of massive fundic gland polyposis (MFGPsis) in a female patient receiving protracted proton-pump inhibitor (PPI) medication is described. At gross examination the majority of the polyps were overlapping, confluent, some of them having a “cauliflower-like” configuration. The fundic gland polyps (FGP) arose in the gastric acid secretory mucosa. The confluence of these polyps impeded their enumeration. The gross and histological characteristics of this case seemed to be at variance with syndromic or sporadic cases having multiple FGP, inasmuch as in this case, the FGP had a propensity to agglutinate, to overlap and to develop confluent macrocysts. Another difference was that this disease, refractory to antacid treatment, required surgical intervention. This case substantiates the notion that protracted PPI medication may encourage the development of MFGPsis in susceptible individuals.

Fundic gland polyps (FGP) are benign, sessile, circumscribed lumps in the mucosa of the gastric body and fundus, characterized by a collection of mucosal microcysts lined by parietal cells, chief cells and occasional mucinous foveolar cells. FGP are found not only in patients with hereditary diseases, such as familial adenomatous polyposis (FAP/Gartner’s syndrome), attenuated familial adenomatous polyposis syndromes, Peutz-Jeghers syndrome, Cowden’s syndrome and juvenile polyposis, but also in sporadic patients with atrophic gastritis, Zollinger-Ellison syndrome or receiving proton-pump inhibitor medication (1-12).

The number of FGP reported in the literature varies from one (8) to >100 polyps (5). Whereas Marcial et al. (8) found an average of four polyps (range from 1-11 polyps) among patients with FGP, Fenoglio-Preiser (5) found a carpet of hundreds of FGP polyps in patients with adenomatous polyposis coli (APC) and >50 FGP polyps in sporadic cases. In other reports, the number of FGP was expressed in descriptive terms such as multiple, numerous (3, 6, 9, 11) or diffuse (12). Hizawa et al. (6), however, distinguished between cases with multiple FGP those having 2 to 60 polyps and those with numerous FGP, having >100 polyps. Sekine et al. (12) described a case of diffuse gastric polypsis in a FAP patient. At histology, however, some polyps were FGP and others, adenoma.

Only a few cases of fundic gastric polyposis (FGPsis) in sporadic cases are in record in the literature. Due to lack of a formal definition, Torbenson et al. (11) recently defined sporadic FGPsis, cases showing ≥10 gastric polyps, with 5 available polyps for microscopic examination and no history of familial and/or colonic involvement. That limit was considered potentially useful to discriminate between non-FAP patients with occasional sporadic FGP and those with sporadic FGPsis.

Proton-pump inhibitors (PPI) remain central to the management of acid peptic disorders, such as gastro-esophageal reflux. Since 1992 (10), many cases of FGP involving patients receiving PPI have appeared in the literature (2, 10, 14-23). None of them showed massive FGPsis.

The purpose of this communication was to report a case of massive (M) FGPsis in a patient receiving protracted PPI medication and to propose a definition of MFGPsis.

Case Report

This clinical history is being published with the patient’s signed consent.

Family history: Both the grandmother and mother suffered asthma. The mother had a heart infarction and the father died of a cerebral stroke. The patient had no siblings. There was no family history of colorectal cancer.

The patient was a 60 year-old female (2009). Eight pregnancies resulted in stillborns or miscarriages. At 17 years
old, she was treated for hay fever and fibromyalgia. At 35 years old, she developed hypothyreosis, for which she was medicated with Levaxin. At this age she began to complain of severe heartburn with periods of nausea and vomiting. Different conventional antacids were administered without alleviation of symptoms and 7 years later she began to receive 40 mg esomeprazole (Nexium) daily. A gastroscopy showed multiple minute polyps in the anterior and posterior proximal stomach wall. The most proximal polyps interfered with the function of the sphincter, apparently increasing the gastric reflux. The antrum was normal. Gastric biopsies demonstrated FGP. During the following years, a total of 7 gastroscopies with biopsies were performed. FGP were found in all the random biopsies. No mucosal inflammation, dysplasia, intestinal metaplasia or Helicobacter pylori, 3 (Giemsa stain) were demonstrated. A colonoscopy was normal. The patient received metoclopramide, 10 mg x3, daily, in addition to 40 mg x1 Nexium. A new gastroscopy performed in 2003 (aged 54 years) showed a hiatus hernia containing multiple polyps, some described as “cauliflower-like”. Since her symptoms continued, the doses of Nexium were increased to 80 mg daily. The 24 pH-values were high (pH<4, 15%/24 h) but the esophagus-manometry was normal (De Mister Score 52.2). Since the symptoms were not alleviated by the protracted medication with PPI, the hemoglobin was low and blood was found in the stools, the patient decided to undergo surgical intervention.

In 2006 (57 years old) a total gastrectomy with esophago-jejunostomy and a Roux-en-Y bypass was performed. The surgical specimen was opened along the greater curvature; it measured 30×25×22 cm. At gross examination the specimen revealed MFGPsis (Figure 1), here defined by the presence of uncountable, confluent, overlapping polyps in the fundus and body of the stomach, some of them displaying a “cauliflower-like” configuration. The confluence of these polyps impeded their enumeration. Sections were stained with hematoxylin and eosin (H&E). For the purpose of the histological description, confluent, overlapping polyps were considered as “single polyps” (Figure 2). A total of 148 such polyps were examined. Characteristically, the overlapping agglutinated polyps contained many confluent macrocysts that were moulded by lateral compression from expanding neighbouring cysts (Figure 3). Histologically, the polyps arose in the gastric acid secretory mucosa. The dilated gastric glands were lined by, mucous neck cells, ballooned parietal and a few chief cells. Sections, stained with PAS confirmed that mucus-producing cells also covered the wall of the fundic cysts.

Based on the family history and because of the gross and histological features of these fundic gland polyps, this case was diagnosed as MFGPsis.

Follow-up: The patient suffered from severe dysphagia postoperatively. An esophagoscopy with biopsies revealed candida albicans infection. During the following two months, she complained of nausea, vomiting and weight loss.
Two years after total gastrectomy, the patient was doing well without Nexium or other conventional antacid medication.

Discussion

The gross and histological characteristics of this case seem to be at variance with cases of syndromic or sporadic FGPsis (1, 3-7) inasmuch as in this case the innumerable FGP had a propensity to agglutinate, to overlap and to develop confluent macrocysts.

Although some authors deny that FGP are induced by PPI therapy (21-23) the majority of reports concurred that the protracted use of PPI medication may evoke FGP formation (13-20). Jalving et al. (17) found a 4-fold increase in the risk of FGP among PPI users.

Also at variance with syndromic and sporadic FGP, no eosinophilic, granulated plugs were found to clog the outlets of the dilated glands (25). Another difference was that this disease, refractory to antacid treatment, required surgical intervention. The case herein reported seems to substantiate the notion that protracted PPI medication may encourage the development of MFGPsis in susceptible individuals.

References


Received August 21, 2009
Revised December 8, 2009
Accepted December 9, 2009

Rubio et al: Massive Gastric Polyposis