

Surgical Resection of a Rare Inflammatory Fibroid Polyp of the Stomach: A Case Review

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Abstract

Inflammatory Fibroid Polyps are uncommon sessile or pedunculated polypoid masses that have been estimated to account for roughly one percent of all gastric polyps. They have been reported throughout the gastrointestinal tract in locations including the stomach, small bowel, colon, and esophagus. We present a rare case of an inflammatory fibroid polyp of the gastric antrum in a 57 year-old patient presenting with occult anemia, which was successfully treated with surgical resection. The diagnosis of an inflammatory fibroid polyp is a difficult one, as clinical presentation is usually non-specific and endoscopy with biopsy specimens may not be sufficient to allow for a histological diagnosis. Diagnosis is best established with immunohistochemistry of the excised tumor. Inflammatory fibroid polyps are positive for CD34, PDGFR-alpha, and vimentin, and are negative for CD-117, and S-100, among others. Once diagnosed, the definitive treatment for inflammatory fibroid polyps is excision. The anatomic location and size of the polyp determine whether the procedure is open or endoscopic. Inflammatory fibroid polyps have not been found to recur after excision, nor have additional polyps been found to develop.

Keywords: Inflammatory fibroid polyp; Resection; Stomach

Introduction

Inflammatory fibroid polyps are uncommon sessile or pedunculated polypoid masses that have been documented to occur throughout the gastrointestinal tract [1]. Vanek first described these lesions in 1949 as “gastric submucosal granulomas with eosinophilic infiltration” after reporting six cases of lesions that consisted of loosely arranged collagenous tissue with fibroblasts, blood and lymph capillaries, and eosinophilic polymorphonuclear leukocytes [2]. In 1953, Helwig and Ranier, proposed the name “Inflammatory Fibroid Polyp,” which has now become the universally accepted term [3]. We present a rare case of an inflammatory fibroid polyp of the gastric antrum in a 57 year-old patient presenting with occult anemia, which was successfully treated with surgical resection.

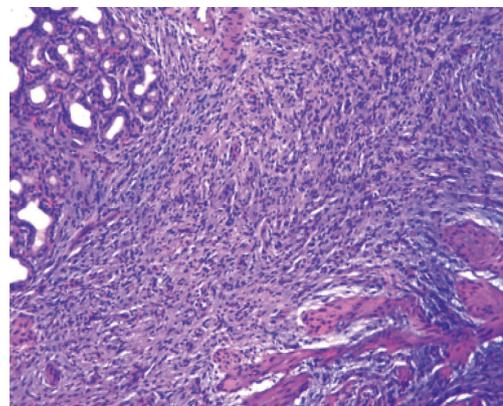


Figure 1. H and E Stain. Microscopically, the lesion has a granulation tissue appearance with spindle cell proliferation, prominent vasculature, and inflammatory cells including significant eosinophils. It infiltrates mucosal glandular tissue with trapped glands. The surface is ulcerated with acute inflammation.

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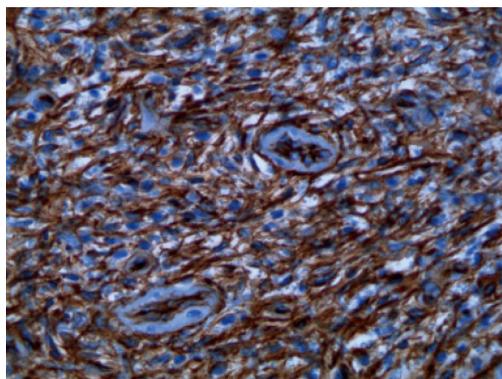


Figure 2. Diffuse reactivity of CD34 staining

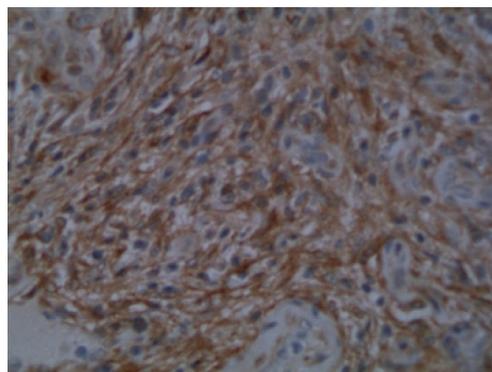


Figure 3. Diffuse reactivity of PDGFR Alpha staining

Case Report

A 57 year-old man presented to our teaching service with a history of occult anemia. He underwent upper endoscopy and was found to have a large prepyloric ulcerative mass with evidence of active bleeding. Subsequent biopsies of the mass revealed normal mucosa. *H. Pylori* testing was negative.

The surgical team proceeded with exploratory laparotomy and ultimately performed a gastrectomy with excision of the mass, antrectomy, and Billroth II gastrojejunostomy reconstruction. Intraoperative frozen section analysis was suggestive of a spindle cell neoplasm. Additional proximal prepyloric and distal duodenal margins were negative for tumor.

Further pathology studies revealed a 2.6 cm spindle cell neoplasm. Based on gross appearance, histology, and an immunoprofile of CD117-, DOG1-, CD34+, and PDGFR Alpha +, the tumor was classified as an inflammatory fibroid polyp (Fig. 1-3).

Post-operatively, the patient remained stable. His diet was increased gradually and he was discharged home one week later.

Discussion

Inflammatory fibroid polyps account for between 1 to 3% of gastric polyps [4-6]. They have been reported throughout the gastrointestinal tract in locations including the stomach, small bowel, colon, and esophagus [6]. Approximately 70% of inflammatory fibroid polyps are located in the gastric antrum and 20% in the small bowel.

There is much debate over the etiology and pathophysiology of these lesions. There have been reported associations with chronic atrophic gastritis, but often times the adjacent mucosa is normal [4]. It has been suggested by Nishiyama et al, that there is a relationship between *H. Pylori* and the development and treatment of inflammatory fibroid polyps [7]. No conclusions have been made as other cases, including the one presented above, have not shown an association

with *H. pylori* [8]. An English report suggests there may be a familial link as a family in Devon, UK has had females in three succeeding generations develop multiple inflammatory fibroid polyps [9]. There has been no other evidence thus far of a possible genetic link. In addition, it has been hypothesized that there is an allergic element to the development of these lesions due to their eosinophilic nature, yet this has not been widely accepted, as there is no accompanying peripheral eosinophilia [6, 10]. In their recent analysis of the current literature, Mucientes et al found that dendritic, neural, fibroblastic, myofibroblastic, histiocytic, and vascular cells have all been suggested by various authors as cell types to originate inflammatory fibroid polyps [11]. Therefore, no significant conclusions can be made at this juncture.

From a clinical standpoint, inflammatory fibroid polyps may be found incidentally or when substantial enough in size, may mimic signs and symptoms of gastric cancer. Patients may complain of non-specific abdominal or epigastric pain, nausea, vomiting, or melena, secondary to gastrointestinal bleeding from ulceration [10, 12]. In their 1-year national study of 120,000 patients with gastric polyps, Carmack et al found that the median age at diagnosis was 61 years and the most common presenting symptoms were dyspepsia (37.5%), anemia (25%), and gastroesophageal reflux (14.3%) [13].

Accordingly, endoscopy with ensuing biopsies is often the first diagnostic modality used in these patients [10]. Macroscopically, inflammatory fibroid polyps are usually solitary submucosal lesions that are approximately 1.5 cm in size on average [6]. Biopsy specimens may not be sufficient to allow for a histological diagnosis [14]. Definitive diagnosis is best established with immunohistochemistry of the excised tumor [6]. Inflammatory fibroid polyps are positive for CD34, PDGFR-alpha, and vimentin, and are negative for CD-117, and S-100, among others [1, 6, 11, 15].

The differential diagnosis for inflammatory fibroid polyps includes gastrointestinal stromal tumors (GIST), eosinophilic gastroenteritis, inflammatory myofibroblastic tumors, and benign mesenchymal tumors such as neurofibromas

and schwannomas [6, 11]. Inflammatory fibroid polyps are similar to GIST tumors as they both demonstrate spindle cell proliferation and are CD34 positive. They differ in that GIST tumors do not demonstrate increased eosinophils and are DOG1 and CD-117 positive [6]. Eosinophilic gastritis is found in patients with strong histories of allergies and often has a transmural infiltrate. Neurofibromas and schwannomas both are spindle-shaped but lack the immunohistochemical profile consistent with an inflammatory fibroid polyp as they are negative for CD34 and positive for S-100 [11]. Inflammatory myofibroblastic tumors occur less frequently in the stomach than the remainder of the gastrointestinal tract, but often present with similar clinical manifestations. These tumors have a similar inflammatory histological component yet do not have the eosinophilic infiltrate, nor vascular proliferation. They also have a tendency to recur [16].

Once diagnosed, the definitive treatment for inflammatory fibroid polyps is excision. The anatomic location and size of the polyp determine whether the procedure is open or endoscopic [17]. Inflammatory fibroid polyps have not been found to recur after excision, nor have additional polyps been found to develop [18].

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