Giant Inflammatory Fibroid Polyp of the descending colon treated with endoscopic resection: a case report and review of literature

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Abbreviations: IFP: Inflammatory fibroid Polyp

Key words: Inflammatory fibroid Polyp, descending colon, endoscopic resection

Introduction:

Inflammatory fibroid Polyps (IFPs) are rare reactive non-neoplastic lesions that involve, in most of cases, the stomach (70%) and the small intestine (20%) [1]. They are rarely described in the esophagus or the colon. Histologically, IFPs are stromal proliferations having their epicenter in the submucosa. They usually contain numerous blood vessels, fibroblasts and an edematous inflamed stroma rich in eosinophils [2]. Signs and symptoms related to these polyps depend mostly on their location and size. Bleeding related to mechanical trauma, obstruction or abdominal pain are manifestations of IFP in some patients. The diagnosis is usually made by imaging studies or endoscopy. Treatment options include surgical excision, in most cases, and endoscopic mucosal resection [Table 1].

Case report:

An 83 year old male with past medical history of diabetes mellitus, coronary artery disease and hemodialysis dependant end stage renal disease presented with one week history of hematochezia, and 6 months history of intermittent abdominal pain. Physical examination was unremarkable. Initial lab work
showed hemoglobin of 8.6 g/dl. CT scan of abdomen revealed hypodense heterogeneous mass within the proximal descending colon that has low internal density which might represent adipose tissue (i.e. lipoma), however, malignancy could not be excluded [figure 1.A] No other masses or significant lymphadenopathy were seen. Colonoscopy was performed and a giant polypoid mass, nearly obstructing the lumen of the descending colon was found. The mass was pedunculated, had a yellow surface, and a wide stalk, and measured 7.0 cm in greatest dimension [figure 1.B]. Biopsies were obtained which revealed an inflamed submucosal stroma with granulation tissue denuded of epithelium. Neither malignant cells nor features of an adenoma were present. Serum CEA was 1.3 ng/ml. Surgical resection was declined by the patient. He underwent a repeated colonoscopy with snare polypectomy. The mass was removed in a piecemeal fashion and the site was tattooed [figure 1.C]. Gross pathologic examination showed a 7.0 x 4.0 x 3.0 cm partially infarcted polypoid mass [figure 1.D]. Microscopic examination revealed a polypoid lesion with a prominent fibrotic submucosal stroma, blood vessels and scattered eosinophils. Immunostains performed on tumor tissue sections were positive for CD34 and negative for S-100 protein and desmin [figure 2.A] The findings were those of IFP. The Patient tolerated the procedure well and a follow up colonoscopy 7 months later did not show recurrence of lesion and 18 months later the patient continued to be asymptomatic.
Figure (1)

A. CT scan: Large mass occupying most of the descending colon.
B. Endoscopic view of the large colonic mass obstructing the lumen of the descending colon.
C. Endoscopic view of the post polypectomy site (endoloop and endoclips seen at the site)
D. Gross view of the colonic mass after endoscopic resection.
Figure (2)
A, Intermediate power view of the inflammatory fibroid polyp showing the rich vascular supply (arrow heads) highlighted by a CD34 immunostain. Tissue section. CD 34 immunostain. Original magnification X 100.
B, Eosinophils within the stroma. Inflammatory fibroid polyp. Tissue section, hematoxylin & eosin; original magnification x 1000.

Discussion
IFPs are benign non neoplastic lesions that were first described by Konjetzny in 1920 as proliferating growths of unknown origin with inflammatory eosinophilic [figure 2.B] and fibroblastic infiltration [3]. The first case of colonic IFP was reported by Kofler in 1952 [4]. A variety of names were used to describe these polyps such as submucosal granuloma with eosinophilic infiltration, granuloblastoma, and eosinophilic granuloma. The term ‘inflammatory fibroid polyp’ was first proposed by Helwig and Rainer in 1953 [5].
The etiology and pathogenesis of IFP are not well known. Some have proposed that IFP is caused by an allergic reaction to bacterial, chemical or traumatic stimuli, while others suggested that it is neurogenic in nature [6]. Anthony et al described a familial relationship with multiple recurrent lesions affecting three successive generations [7]. IFPs are found in all age groups but most commonly in adults [5]. They are mostly found in the stomach (70%) and the small intestine (20%). Colonic IFP are rare and are most commonly located in the proximal colon especially in the cecum [8]. These polyps are usually smooth, solitary, originate from the submucosa and appear sessile or pedunculated.

The clinical presentation of IFPs depends, in general, on the size and location of the polyps [8]. As they increase in size they cause, most commonly, abdominal pain and hematochezia. Other signs and symptoms include anemia, weight loss and diarrhea. Complications like intussusceptions might occur in some cases [9]. The definitive diagnosis is made by the histopathologic examination of tissue specimens obtained surgically or endoscopically. Biopsies can be challenging because of the epicenter of the lesion is often in the submucosa and the polyp is often covered by epithelial mucosa without hyperplasia or dysplasia. Histologically, IFPs usually are composed of fibroblasts within an edematous stroma containing many variable-sized blood vessels and inflammatory cells including eosinophils, plasma cells, lymphocytes, histiocytes, and mast cells [10] [figure 3]. Submucosal lesions that can histologically mimic IFPs include benign fibroblastic polyps of the colon (BFPC), gastrointestinal stromal tumors (GIST) and neuromas. The histologic features of IFPs are distinct from that of (BFPC) which has very few eosinophils, mast cells and plasma cells [11]. Using immunohistochemistry studies, spindle cells of IFPs are generally positive for CD34 and negative for S-100 protein, c-kit, Bcl-2 and p53. Negative staining for c-kit and Bcl-2 helps to differentiate IFP from gastrointestinal stromal tumor (GIST) [2]. Submucosal Neuromas are generally S-100 protein positive, CD34 negative and present as part of syndromes with multiple submucosal neuromas (as multiple mucosal neuroma syndrome).
Figure (3)

A, Low power view. Submucosal stromal proliferation with superimposed hemorrhage. Inflammatory fibroid polyp, tissue section. Hematoxylin & eosin, original magnification x 20

B, High power view of the inflammatory fibroid polyp displaying a rich vascularized area with branching capillaries surrounded by a collagenous stroma containing bland spindle cells. Tissue section. Hematoxylin & eosin, original magnification x 200.

C, Low power view of the deep aspect of the inflammatory fibroid polyp displaying rich vascularized areas. Tissue section. Hematoxylin & eosin, original magnification x 40.
To the best of our knowledge, only 31 cases of colonic IFP were reported in the English literature [Table 1]. The size of IFPs ranged between (0.5 cm - 7 cm) with a median diameter of 3.8 cm. There were 2 cases of small (<1 cm) polyps, 19 cases of large (1-4 cm) polyps and only 5 cases of giant (more than 4 cm) polyps, as in our case (cases with unspecified size were not included in our calculations). Most of the polyps were found in the cecum (15 cases) accounting for 44% of cases, whereas only 2 cases of descending colon IFP were reported prior to our case. Males were affected more than females (72%). 15 cases (44%) were pedunculated and 7 (20%) were sessile, whereas the rest were unspecified. Treatment approach was surgical in 20 cases (58%) while endoscopic resection was done in 8 (23%). The largest polyp treated endoscopically was 4.5 cm apart from our case.

There was no reported recurrence of IFP in the colon. However, there were 2 reported cases of recurrent gastrointestinal IFP in the small intestines [7,12] and one in the stomach [13].

Table 1: Summary and clinicopathological features of previously reported cases of IFP in the English Literature including our case (32)

<table>
<thead>
<tr>
<th>Case</th>
<th>Age / sex</th>
<th>Location</th>
<th>Gross Description</th>
<th>Treatment</th>
<th>Reference</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>79 / Male</td>
<td>Cecum</td>
<td>Lentil sized</td>
<td>None</td>
<td>4</td>
<td>1952</td>
</tr>
<tr>
<td>2</td>
<td>37 / Male</td>
<td>Cecum</td>
<td>6.5 cm pedunculated</td>
<td>Surgery</td>
<td>16</td>
<td>1955</td>
</tr>
<tr>
<td>3</td>
<td>67 / Male</td>
<td>Cecum</td>
<td>3.5 cm pedunculated</td>
<td>Surgery</td>
<td>17</td>
<td>1960</td>
</tr>
<tr>
<td>4</td>
<td>4 / Male</td>
<td>Transverse</td>
<td>3.5 cm pedunculated</td>
<td>Surgery</td>
<td>18</td>
<td>1966</td>
</tr>
<tr>
<td>5</td>
<td>56 / Male</td>
<td>Cecum</td>
<td>7 cm</td>
<td>Surgery</td>
<td>19</td>
<td>1977</td>
</tr>
<tr>
<td>6</td>
<td>69 / Male</td>
<td>Transverse</td>
<td>5 cm pedunculated</td>
<td>Surgery</td>
<td>20</td>
<td>1979</td>
</tr>
<tr>
<td>7</td>
<td>51 / Male</td>
<td>Sigmoid</td>
<td>3 cm,pedunculated ulcer</td>
<td>Surgery</td>
<td>9</td>
<td>1979</td>
</tr>
<tr>
<td>8</td>
<td>24 / Male</td>
<td>Transverse</td>
<td>5 cm</td>
<td>Surgery</td>
<td>21</td>
<td>1983</td>
</tr>
<tr>
<td>9</td>
<td>8 / Male</td>
<td>Rectum</td>
<td>3 cm sessile</td>
<td>Surgery</td>
<td>22</td>
<td>1984</td>
</tr>
<tr>
<td>10,11,12,13,14</td>
<td>Not specified</td>
<td>4 cecum,1 ascending</td>
<td>1.5-4 cm</td>
<td>1 cecum endoscopic, The rest surgery</td>
<td>23</td>
<td>1984</td>
</tr>
<tr>
<td>15</td>
<td>71 / Male</td>
<td>Cecum</td>
<td>4 cm, pedunculated</td>
<td>Endoscopic</td>
<td>24</td>
<td>1985</td>
</tr>
<tr>
<td>16</td>
<td>42 / Male</td>
<td>Cecum</td>
<td>3.5 cm</td>
<td>Surgery</td>
<td>25</td>
<td>1992</td>
</tr>
<tr>
<td>17,18,19,20</td>
<td>24-72 / 3Males,1 Female</td>
<td>3 Transverse, 1 Cecum</td>
<td>3.6-5 cm, 2 pedunculated, 2 sessile</td>
<td>Not specified</td>
<td>26</td>
<td>1992</td>
</tr>
<tr>
<td>21</td>
<td>33 / Female</td>
<td>Descending</td>
<td>4 cm, pedunculated</td>
<td>Surgery</td>
<td>27</td>
<td>1995</td>
</tr>
<tr>
<td>22</td>
<td>63 / Male</td>
<td>Ascending</td>
<td>3.5 cm, Sessile, ulcer</td>
<td>Surgery</td>
<td>28</td>
<td>1999</td>
</tr>
<tr>
<td>23</td>
<td>45 / Male</td>
<td>Cecum</td>
<td>0.5 cm, sessile, erosive</td>
<td>Endoscopic</td>
<td>29</td>
<td>2000</td>
</tr>
<tr>
<td>24</td>
<td>66 / Male</td>
<td>Cecum</td>
<td>3.5 cm, sessile</td>
<td>Surgery</td>
<td>30</td>
<td>2004</td>
</tr>
<tr>
<td>25</td>
<td>40 / Male</td>
<td>Ascending</td>
<td>3 cm, pedunculated</td>
<td>Endoscopic</td>
<td>2</td>
<td>2005</td>
</tr>
<tr>
<td>26</td>
<td>45 / Male</td>
<td>Transverse</td>
<td>1.8 cm,depressed</td>
<td>Surgery</td>
<td>31</td>
<td>2006</td>
</tr>
</tbody>
</table>
Surgical resection has been the most common method of treatment for large and giant colonic IFP [table 1]. This is usually because of the technical difficulty of endoscopic polypectomy which could be very challenging due to 1) limited endoscopic view because of the size of the polyp which could occupy most of the lumen, 2) the morphology of the polyp (either pedunculated with firm and wide stalk or sessile), 3) the location of the polyp at a flexure or sharp curve of the intestine 4) the challenges in establishing a definitive pre-operation diagnosis on the bases of endoscopic biopsy using standard forceps due to normal overlying mucosa (as in our case) and 5) some concerns regarding the curative role of endoscopic removal of IFP [1,14,15] because of the possibility of recurrence after treatment (total of 3 cases) [7,13,12]. Successful endoscopic resections have been reported in smaller number of cases when the polyps were small and pedunculated. Due to the benign nature of IFPs with no documented malignant potential, and the low post endoscopic resection recurrence rate [6], endoscopic polypectomy of IFPs could be an appropriate first option of therapy if technically possible considering the size, location and the morphology of the polyps. Moreover, it is a valuable diagnostic method for providing tissue specimens for accurate histological assessment, and it could be the most reasonable option in patients who are not surgical candidates or refuse surgery.
References:


