Inflammatory Polyp as a Lead Point for Jejunal Intussusception  
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Citation  

Abstract  
This report describes the presentation of an inflammatory fibroid polyp as a lead point for small bowel intussusception. The condition itself is uncommon. However, the case highlights the most common of its presentations.

INTRODUCTION  
Inflammatory fibroid polyps (IFPs) are benign mesenchymal lesions of the gastrointestinal tract. They contain a proliferation of fibroblasts and chronic inflammatory cell infiltrates. They are believed to occur in response to local noxious stimuli, although their histogenesis remains controversial. This report outlines a common presentation of these uncommon lesions.

CASE REPORT  
A healthy 34-year-old man presented to hospital with colicky abdominal pain, vomiting and abdominal distention of two days duration. Notably, he had undergone appendectomy 10 years prior. Significant examination findings included a distended, non-tender abdomen with hyperactive bowel sounds. Plain abdominal radiographs revealed multiple loops of dilated small bowel in the upper abdomen (Fig. 1).

A diagnosis of adhesive small bowel obstruction was made and a trial of standard non-operative management was commenced. Approximately 8 hours after presentation, the patient began to complain of worsening pain and had a pyrexic spike to 38°C. A decision was taken to proceed to exploratory laparotomy. The abdomen was explored through a midline incision. Intra-operatively, a jejunal intussusception was noted approximately 30cm distal to the duodeno-jejunal flexure (Fig. 2). Proximal bowel was distended while distal jejunum was collapsed. The intussuscepted segment was resected without prior reduction and a stapled anastomosis was performed. The post-operative course was unremarkable.
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Figure 2
Figure 2: Intra-operative findings: An intussuscepted segment of jejunum is seen (arrow) prior to resection without reduction

On gross pathologic examination, a 3.0 x 2.5 x 2.5cm pedunculated polyp was identified within the bowel lumen (Fig. 3). The overlying mucosa was hemorrhagic with patchy areas of ulceration. The polyp was sectioned to reveal a homogenous, hemorrhagic tumor (Fig. 4) arising in the submucosa without invasion of the muscularis propria (Fig. 5).

Figure 3
Figure 3: Gross pathologic findings: A pedunculated 3.0 x 2.5 x 2.5cm polyp is seen arising from the anti-mesenteric border of the jejunum

Figure 4
Figure 4: Gross pathologic findings: Transverse section of the polyp shows a homogenous fleshy tumour arising within the jejunal submucosa.

Figure 5: Low power microscopic examination of the polyp. The lesion is seen arising within the submucosa and eroding into the epithelium (E) at points. There is no invasion into the underlying muscularis mucosae (M)

Examination of the mass by light microscopy showed numerous spindle-shaped and stellate fibroblasts embedded within loose, oedematous stroma. There was a dense chronic inflammatory cell infiltrate composed predominantly of eosinophils and numerous small blood vessels surrounded by distinctive zones of loose connective tissue (Fig. 6). Immunohistochemical staining was positive for vimentin but negative for CD34, C-kit and S-100. A final diagnosis of an inflammatory fibroid polyp was made.
DISCUSSION

Adult intussusceptions are rare, accounting for 5% of all cases of intussusceptions and for 1% to 4% of all cases of bowel obstruction in adults. Unlike their childhood counterparts, intussusceptions in adults are due to a demonstrable pathologic lead point in 80-90% of cases. The lead point in this patient was an IFP. This is a benign mesenchymal lesion that can be found anywhere within the gastrointestinal tract. Vanek et al. first described this lesion in 1949 as a “submucosal granuloma with eosinophilic infiltration”\(^\text{1}\). The current nomenclature was introduced by Ranier and Helwig in 1953.\(^\text{2}\)

The presentation in this patient was considerably early as most IFPs present in patients in the sixth decade of life with local symptoms that are size-dependent. The majority of cases are sporadic, although there are isolated reports of IFPs occurring in familial clusters and as polyposis syndromes.\(^\text{3}\)\(^\text{4}\)

Several theories have been proposed to describe the genesis of IFPs. It has been suggested that they occur as a chronic inflammatory response to local noxious stimuli, with incomplete differentiation of myofibroblasts and primitive submucosal stromal cells.\(^\text{5}\)\(^\text{6}\)\(^\text{7}\)\(^\text{8}\) Others have suggested that the heavy eosinophilic infiltrate is in keeping with an uncontrolled allergic response\(^\text{9}\)\(^\text{10}\) or that the occasional smooth muscle bundles may represent degenerating leiomyomata.\(^\text{11}\) The large number of theories generated emphasizes the uncertain nature of the etiology.

The IFPs tend to appear as solitary pedunculated polyps that erode the overlying mucosa as they enlarge. The histologic changes are normally confined to the submucosa.\(^\text{12}\)\(^\text{13}\)\(^\text{14}\) The microscopic findings in this case were typical, with multiple fibroblasts within loose, oedematous connective tissue stroma accompanied by infiltrates of eosinophils, plasma cells, lymphocytes, macrophages and mast cells.\(^\text{15}\)\(^\text{16}\)\(^\text{17}\) Several blood vessels surrounded by a distinct zone of loose connective tissue may be identified within the stroma.\(^\text{18}\)\(^\text{19}\)

The diagnosis is supported by immunohistochemistry where IFPs usually stain positive for CD34 and vimentin.\(^\text{20}\)\(^\text{21}\)\(^\text{22}\) Some IFPs may also stain positive for smooth muscle actin, calponin, CD35 and cyclin-D1.\(^\text{23}\) The lesion seen in this patient did not stain positive for CD34. A distinction was therefore made from histologically similar tumors - gastrointestinal stromal tumors, neurogenic tumors and desmoid tumors which stain positive for c-kit/CD117, S-100 and cathepsin-D, respectively. Unlike these tumors, IFPs do not stain positive for these markers.\(^\text{24}\)\(^\text{25}\)\(^\text{26}\)\(^\text{27}\)\(^\text{28}\)\(^\text{29}\)\(^\text{30}\)

The IFPs are most commonly found at the gastric antrum. They are usually detected during investigation of dyspeptic symptoms or upper gastrointestinal bleeding. The jejunum is an uncommon location for IFPs. Winker et al. were the first to describe a jejunal IFP acting as a lead point for intussusception.\(^\text{31}\) This case supports the association between intussusceptions and small bowel IFPs that have been accumulating over the past two decades.\(^\text{32}\)\(^\text{33}\)\(^\text{34}\)\(^\text{35}\)\(^\text{36}\)\(^\text{37}\)\(^\text{38}\)\(^\text{39}\)\(^\text{40}\)\(^\text{41}\)\(^\text{42}\)\(^\text{43}\)

This patient had operative resection of the bowel containing the IFP. Complete resection with uninvolved margins is considered to be sufficient treatment because IFPs do not have any potential for metastasis. Microscopically clear resection margins should be ensured in order to minimize the risk of local recurrence after inadequate resection.\(^\text{44}\)

CONCLUSIONS

Inflammatory fibroid polyps are uncommon lesions. When they occur at the jejunum, they are strongly associated with intussusceptions. They can be treated adequately by complete resection of diseased bowel.

References

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