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

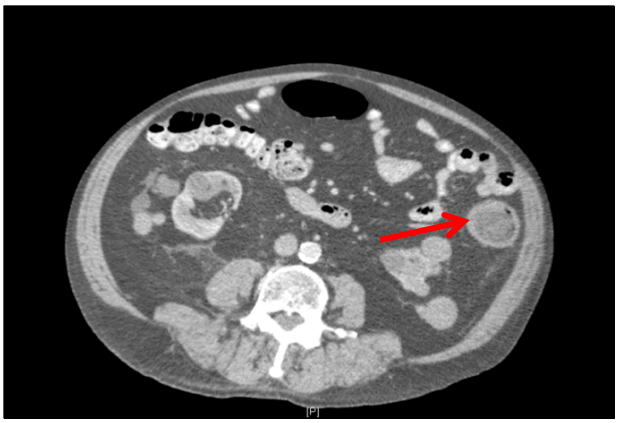
Introduction:

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.



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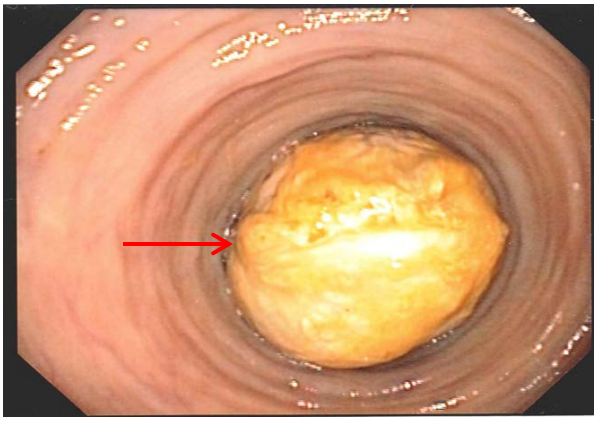

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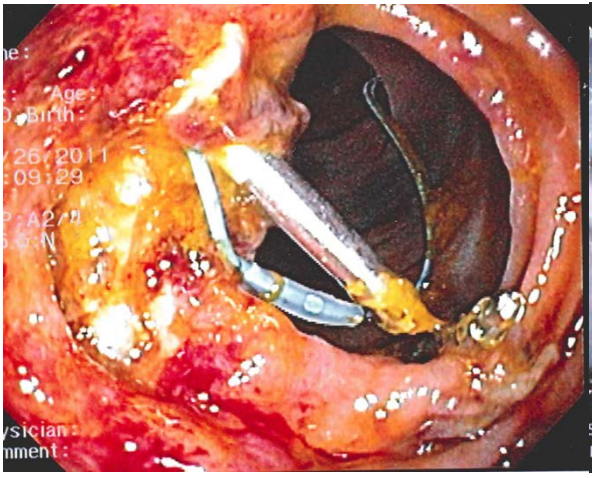

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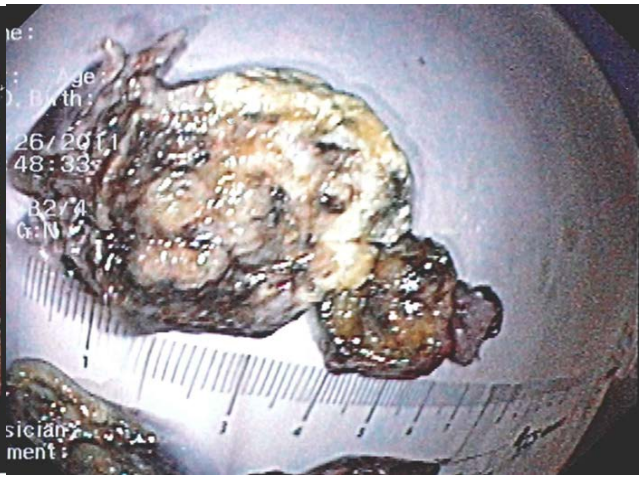

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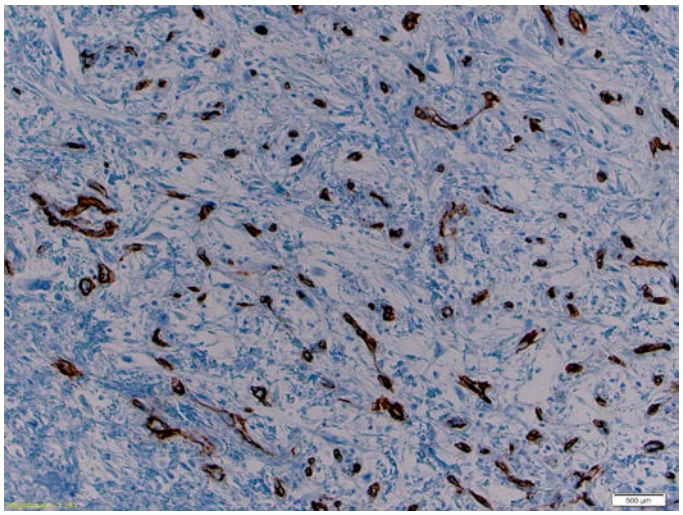
Figure (1)

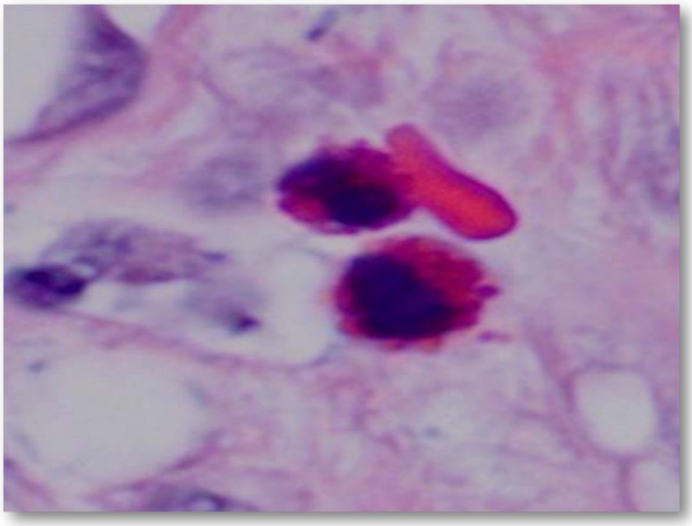
A. CT scan: Large mass occupying most of the descending colon.

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.





A B

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.

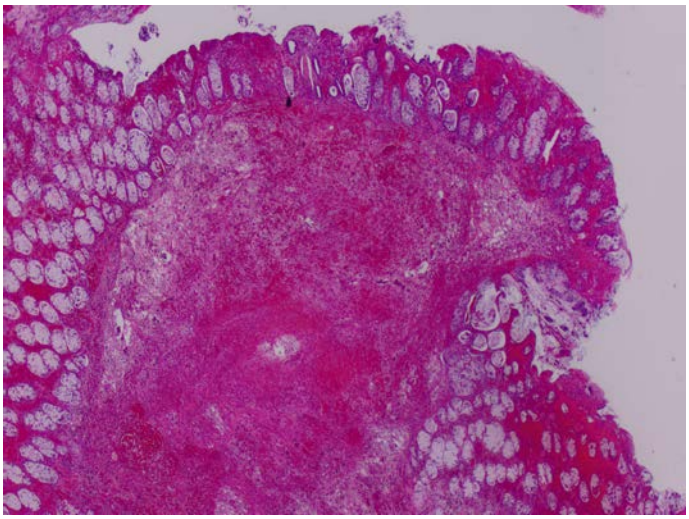
B, Eosinophils within the stroma. Inflammatory fibroid polyp. Tissue section, hematoxylin & eosin; original magnification x 1000.

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 of 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).



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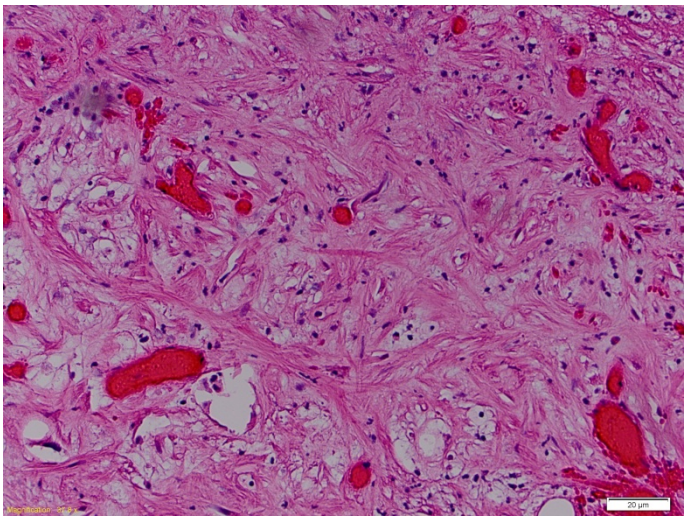

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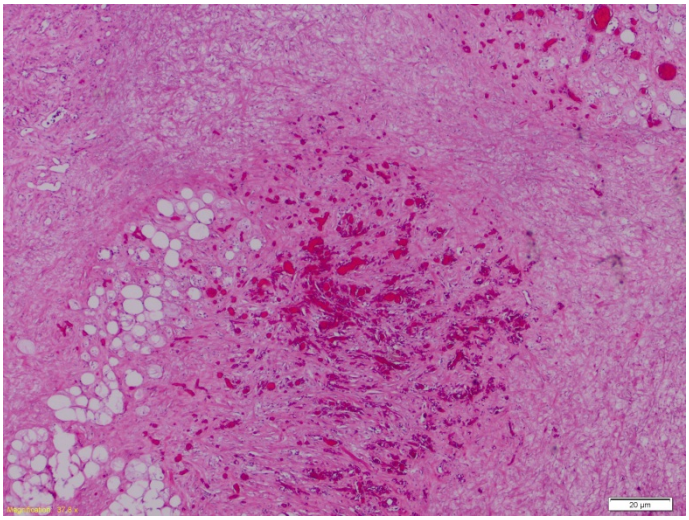

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Figure (3)

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 (0.5cm -7 cm) with a median diameter of 3.8 cm. There were 2 cases of small (<1 cm) polyps, 19 cases of large (1-4cm) polyps and only 5 cases of giant (more than 4cm) 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)

Case	**Age / sex**	**Location**	**Gross Description**	**Treatment**	**Reference**	**Yea r**
1	79 / Male	Cecum	Lentil sized	None	4	1952
2	37 / Male	Cecum	6.5 cm pedunculated	Surgery	16	1955
3	67 / Male	Cecum	3.5 cm pedunculated	Surgery	17	1960
4	4 / Male	Transverse	3.5 cm pedunculated	Surgery	18	1966
5	56 / Male	Cecum	7 cm	Surgery	19	1977
6	69 / Male	Transverse	5 cm pedunculated	Surgery	20	1979
7	51 / Male	Sigmoid	3 cm,pedunculated ulcer	Surgery	9	1979
8	24 / Male	Transverse	5 cm	Surgery	21	1983
9	8 / Male	Rectum	3 cm sessile	Surgery	22	1984
10,11,12, 13,14	Not specified	4 cecum,1 ascending	1.5-4 cm	1 cecum endopscpic The rest surgery	23	1984
15	71 / Male	Cecum	4 cm, pedunculated	Endoscopic	24	1985
16	42 / Male	Cecum	3.5 cm	Surgery	25	1992
17,18,19, 20	24-72 / 3Males, 1 Female	3 Transverse, 1 Cecum	3.6-5 cm, 2 pedunculated, 2 sessile	Not specified	26	1992
21	33 / Female	Descending	4 cm, pedunculated	Surgery	27	1995
22	63 / Male	Ascending	3.5 cm, Sessile,ulcer	Surgery	28	1999
23	45 / Female	Cecum	0.5 cm, sessile,erosive	Endoscopic	29	2000
24	66 / Male	Cecum	3.5 cm, sessile	Surgery	30	2004
25	40 / Male	Ascending	3 cm, pedunculated	Endoscopic	2	2005
26	45 / Male	Transverse	1.8 cm,depressed	Surgery	31	2006

27	82 / Male	Transverse	0.6 cm, pedunculated	None	32	2007
28	28 / Male	Sigmoid	4 cm, pedunculated	Endoscopic	33	2007
29	23 / Female	Descending	4.5cm, pedunc,erosive	Endoscopic	10	2008
30	66 / Female	Cecum	3 cm,sessile,ulcer	Endoscopic	34	2008
31	63 / Female	Cecum	4 cm,pedunculated	Surgery	35	2008
32 (ours)	83 / Male	Descending	7cm, pedunculated	Endoscopy	This case	2011

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:

1. Mitsunobu Matsushita, Kiyoshi Hajiro, Kazuichi Okazaki, Hiroshi Takakuwa. Gastric inflammatory fibroid polyps: endoscopic ultrasonographic analysis in comparison with the histology. Gastrointest Endosc. 1997 Jul;46(1):53-7.
2. T. Sakamoto, H. Kato, T. Okabe, t. Ohya, H.Iesato, T. Yokomori, S.-s. Haga. A large inflammatory fibroid polyp of the colon treated by endoclip-assisted endoscopic polypectomy. Dig Liver Dis. 2005 Dec;37(12):968-72. Epub 2005 Oct 19
3. Konjetzny GE. Uber Magenfibrome. Beitr Klin Chir 1920; 119: 53-61.
4. Kofler E. Uber die granulome des magen-darmashlauches. Virchows Arch. 1952 Jan;321(2):121-33.
5. Helwig EB, Ranier A: Inflammatory fibroid polyps of the stomach. Surg Gynecol Obstet 1953;96:335-67
6. Goldman EL, Friedman NB. Neurogenic nature of so called inflammatory fibroid polyps of the stomach. Cancer 1967;20:134-43
7. Anthony PP, Morris DS, Vowles KD. Multiple and recurrent inflammatory fibroid polyps in three generations of a Devon family: a new syndrome. Gut. 1984 Aug;25(8):854-62.
8. Johnstone JM, Morson BC: Inflammatory fibroid polyp of the gastrointestinal tract. Histopathology 1978;2:349-61.
9. Oscar Lifschitz, Silvia Lew, Misha Witz, Raphael Reiss, Benjamin Griffel. Inflammatory fibroid polyp of sigmoid colon. Dis Colon Rectum. 1979 Nov-Dec;22(8):575-7
10. Byung Chang Kim, Jae Hee Cheon, Sang Kil Lee, Tae Kim, Hoguen Kim, Won Ho Kim. Needle knife –assisted Endoscopic polypectomy for a large inflammatory fibroid polyp by making its stalk into an omega shape using endoloop. Yonsei Med J 49(4):680 - 686, 2008

11. Basak Doganavsargil, Gurdeniz Serin, Murat Akyldiz, Yesim Ertan, Muge Tuncyurek. Benign fibroblastic polyp of the colon: A case report. Turk J Gastroenterol. 2009 Dec;20(4):287-90

12. McGreevy P, Doberneck RC, McLeay JM, Miller FA. Recurrent eosinophilic infiltrate (granuloma) of the ileum causing intussusception in a two-year-old child. Surgery 1967; 61: 280-284

13. Zinkiewicz K, Zgodzinski W, D browski A, Szumi o J, Awik G, Wallner G. Recurrent inflammatory fibroid polyp of cardia: A case report. World J Gastroenterol 2004; 10 (5):767-768

14. Eugene C, Penalba C, Gompel H, Bergue A, Felsenheld C, Fingerhut A, Quevauvilliers J. Gastric eosinophilic granuloma: value of endoscopic polypectomy. Apropos of 2 cases. Sem Hop 1983; 59: 2249-2250.

15. Tada S, IidaM, Yao T,Matsui T, Kuwano Y, Hasuda S, Fujishima M. Endoscopic removal of inflammatory fibroid polyps of the stomach. Am J Gastroenterol 1991; 86: 1247-1250

16. Vitolo RE, Rachlin SA. Inflammatory fibroid polypof large intestine, report of a case. J Int Coll Surg. 1955 Jun;23(6, Section 1):700-9

17. McGee HJ. Inlammatory fibroid polyp of the ileum and cecum. Arch Pathol 1960;70:203–7.

18. Samter TG, Alstott DF, Kurlander GJ. Inflammatory fibroid polyps of the gastrointestinal tract. A report of 3 cases, 2 occurring in children. Am J Clin Pathol 1966;45:420–36.

19. Benjamin SP, Hawk WA. Fibrous inflammatory polyps of the ileum and cecum: review of five cases with emphasis on differentiation from mesenchymal neoplasm. Cancer 1977;39:1300–5.

20. Matsuzaki S, Kikuchi K, Iwamura K, Inaba M, Sugimoto E, Itakura M, et al. A case of eosinophilic granuloma (inflammatory fibroid polyp) of the colon. Nippon Shokakibyo Gakkai Zasshi 1979;76:126–32.

21. Ferin P, Skucas J. Inflammatory fibroid polyp of the colon simulating malignancy. Radiology 1983;149:55–6

22. Pollice L, Bufo P. Inflammatory fibroid polyp of the rectum. Pathol Res Pract 1984;178:508–12

23. Shimer GR, Helwig EB. Inflammatory fibroid polyps of the intestine. Am J Clin Pathol 1984;81:708–14.

24. Niv Y, Hurwitz A. Inflammatory fibroid polyp of the cecum, associated with adenomatous polyp and ovarian thecoma. Isr J Med Sci 1985;21:624–6.

25. Merkel IS, Rabinovitz M, Deckker A. Cecal inflammatory fibroid polyp presenting with chronic diarrhea. A case report and review of the literature. Dig Dis Sci 1992;37:133–6

26. Harned RK, Buck JL, Shekitka KM. Inflammatory fibroid polyps of the gastrointestinal tract: radiologic evaluation. Radiology 1992;182:863–6.

27. Gooszen AW, Tjon A, Tham RTO, Veselic M, Bolk JH, Lamers CBHW. Inflammatory fibroid polyp simulating malignant tumor of the colon in a patient with multiple hamartoma syndrome (Cowden's disease). Am J Roentgenol 1995;165:1012–3.

28. Roberto De La Plaza, Antonio Picardo, Rosa Cuberes, Alberto Jara, Ignacio Martinez-Penalver, M,Concepcion Villanueva, Manuel Medina, David Allias, Santiago Osorio, Enrique Pacheco and Angel Suarez. Inflammatory fibroid poylps of the large intestines. Dig Dis Sci. 1999 Sep;44(9):1810-6

29. Hiroshi Nakase, Jun Mimura, Toshihiko Kawasaki, Toshinao Itani, Hideshi Komori, Kimio Hashimoto, Kazuichi Okazaki and Tsutomu Chiba. Endoscopic resection of small inflammatory fibroid polyp of the colon. Intern Med. 2000 Jan;39(1):25-7.

30. C Ng, KY Lam, TS Gupta, YH Ho. Inflammatory Fibroid Polyp of the Cecum in a patient with Neurofibromatosis. Ann Acad Med Singapore. 2004 Nov;33(6):797-9

31. Kazuya Iwamoto, Masanori Sakashita, Takuya Takashashi, Daisuke Obata, Shinwa Tanaka, Mashatoshi Fujii, Yoshinori Okabayashi. Depressed type of inflammatory fibroid polyp of the colon. Int J Colorectal Dis. 2007 Nov;22(11):1409. Epub 2006 Jun 28

32. Shoji Hiraskai, Minoru Matsubara, Fusaw Ikeda, Hideaki Taniguchi, Seiyuu Suzuki. Inflammatory fibroid polyp occurring in the transverse colon diagnosed by endoscopic biopsy. World J Gastroenterol. 2007 Jul 21;13(27):3765-6

33. Yong Bum Park, Dae Young Cheung, Jin Il Kim, Soo-Heon Park, Se-Hyun Cho, Joon-Yeol Han, Jae Kwang Kim and Kyu Yong Choi. A large inflammatory fibroid polyp in the sigmoid colon treated by endoscopic resection. ntern Med. 2007;46(19):1647-9. Epub 2007 Oct 1

34. Mustafa Chalikandy Peedikayil, hindi N. Al Hindi, Mohammad Awad Said Rezeig. Inflammatory Fobroid Polyp of the cecum can be treated by endoscopic resection. Saudi J Gastroenterol. 2008 Oct;14(4):212-3

35. Hayato Kan, Hideyuki Suzaki, Seiichi Shinji, Zenya Naito, Kiyonori Furukawa and Takashi Tajiri. A case of inflammatory fibroid polyp of the cecum. J Nihon Med Sch. 2008 Jun;75(3):181-6.

36. J Vanek. Gastric Submucosal Granuloma with Eosinophilic Infiltration. Am J Pathol. 1949 May;25(3):397-411