

Coexistence of Crohn's disease and inflammatory fibroid polyp of the small bowel.



Report of a case and review of the literature

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Abstract

BACKGROUND/AIM: *The Authors report a case of a woman aged 35, with concurrent appearance of Crohn's disease and Inflammatory Fibroid Polyp of the terminal ileum.*

CASE REPORT: *The combination of the two disorders was clinically manifested as an obstructive ileus. On the operative table, a 4-cm polypoid mass causing intussusception of the bowel was obvious. The resected specimen of the ileum showed profound distention, several ulcerations and fissures. The histological examination confirmed the diagnosis of Crohn's disease coexisting with an Inflammatory Fibroid Polyp. Immunostaining of the lesion for actin showed focal positivity. However, staining for desmin, CD31, S100-protein, PGM-1 CD34, CD117, and bc1-2, was negative.*

CONCLUSION: *Coexistence of Inflammatory Fibroid Polyp with Crohn's disease causing obstructive ileus could be the first manifestation of the disease. The combination of the two disorders corroborates the reparative character of the lesion. Nevertheless, the exact etiopathogenetic relationship between the two entities remains obscure.*

KEY WORDS: Acute abdomen, Crohn's disease, Inflammatory bowel disease, Inflammatory fibroid polyp, Intussusception.

Introduction

Inflammatory Fibroid Polyps (IFP) is a rare tumor-like lesion, involving every part of the gastrointestinal tract, from esophagus to the rectum, but more commonly the stomach. IFPs are tumors of unknown etiology and of various sizes, arising in the wall of the affected organ, and involving different parts of it from the mucosa to serosa. Histologically, they are characterized by a proliferation of spindle shaped mesenchymal cells in a myxoid or collagenous extracellular matrix with a prominent vascular network and (usually) abundance of inflammatory cells. Although the exact etiology and pathogenesis remain unclear, the lesion can be classified as a benign reactive one¹⁻¹².

In most patients, symptoms – depending on the location of the lesion – are benign and include epigastric

pain, vomiting, altered bowel movements, hemorrhage and loss of weight. However, in some patients, symptoms could be severe enough. These patients are presented in the emergency room with acute abdomen (obstructive ileus) usually due to intussusception¹³⁻¹⁹. IFPs have rarely been described in patients with inflammatory bowel disease²⁰⁻²⁵. The aim of this presentation is to describe the concurrent appearance of IFP and Crohn's disease of the small bowel in a patient presented with a clinical picture of acute abdomen, and to discuss possible pathogenetic relationships between the two pathological conditions. Our case probably represents the ninth patient described so far in the international literature.

Case report

A woman aged 35 yrs, was admitted to our department complaining of diffuse abdominal pain, distention of the abdomen, and inability to pass flatus and stools. This combination of symptoms compatible with obstructive ileus, started 48 hours before. Nevertheless, during the

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last three months, she was complaining of diarrhea, vague abdominal pain and loss of weight. Physical examination revealed distention of the abdomen with tenderness of moderate degree. An abdominal x-ray confirmed the presence of air-fluid levels. The hematocrite was 27%, the erythrocyte sedimentation rate was 30 mm, and the peripheral white blood cells were 9800/mm³. Past history was unremarkable. With the profound diagnosis of obstructive ileus, she underwent an emergency laparotomy. Operation revealed intussusception of the terminal ileum due to the presence of an endoluminal, polypoid-like, tumor. The small bowel was quite distended. A large amount of exudate was also obvious. A 50cm small bowel enterectomy plus end-to-end anastomosis was performed. The recovery of the patient was uneventful.

The macroscopic appearance of the resected bowel showed prominent distention and multiple ulcers or fissures of different size and depth, a picture suspicious for Crohn's disease. A polyp-like mass, of maximum diameter of 4cm, protruded into the lumen and expanded intramurally with indistinct margins. The microscopic appearance of the lesion was compatible with IFP. It was composed of edematous matrix containing a moderate number of spindle or stellate mesenchymal cells, arranged diffusely and, in a lesser degree, concentrically around proliferating small vessels with enlarged endothelial cells. A significant number of inflammatory cells, including eosinophils, mast cells and lymphoplasmacytes, were seen. In some areas, increased cellularity and parallel arrangement of the spindle cells, reminiscent of a stromal tumor, was seen (Fig. 1 to 4). The histological examination of the remaining bowel revealed a typical picture of Crohn's disease. An interesting finding was the morphology of the granulation tissue in some of healing fissures. It was composed of an abundant edematous stroma, rich in inflammatory cells and vessels, containing also a significant number of stellate or spindle mesenchymal cells with morpho-

logic characteristics similar to that of the cellular component of the IFP (Fig. 5).

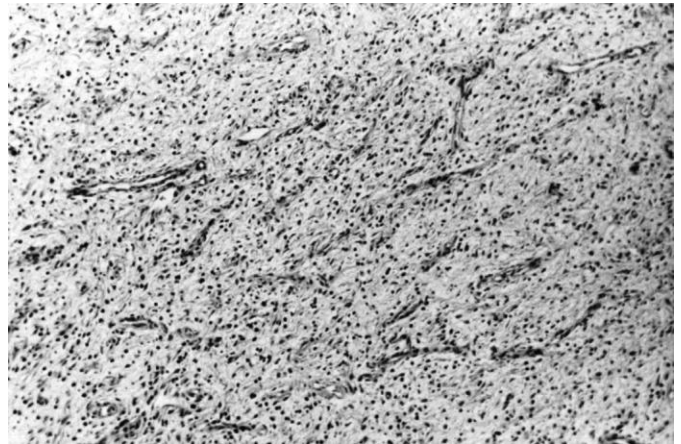


Fig. 2: Characterist histologic appearance of IFP: proliferation of mesenchymal elements and arborizing small vessels (H-EX100).

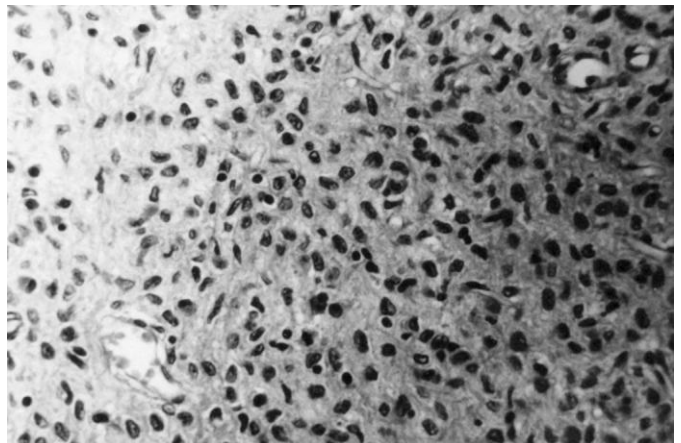


Fig. 3: Cellular area of the inflammatory fibroid polyp with abundance of mesenchymal cells (H-EX200).

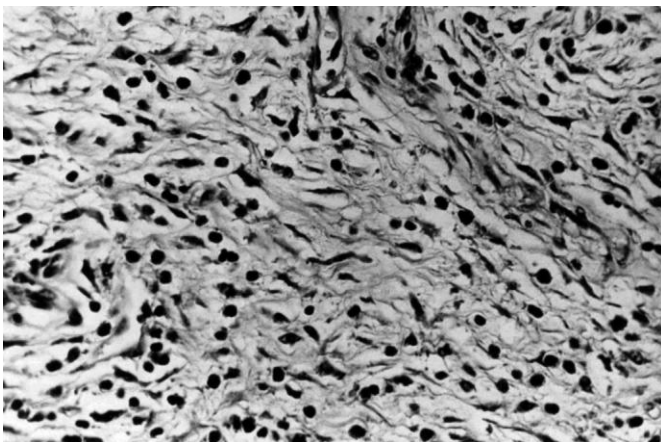


Fig. 1: Edematous cellular substrate of IFP including stellate and spindle cells mixed with inflammatory cells (H-EX200).

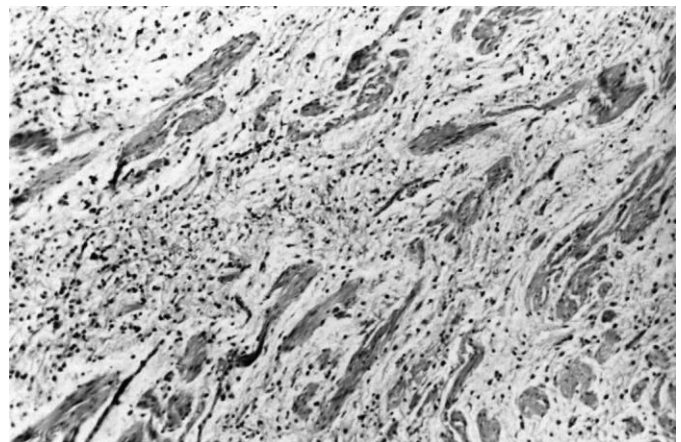


Fig. 4: Extension of IFP between fibers of the muscularis propria (H-EX100).

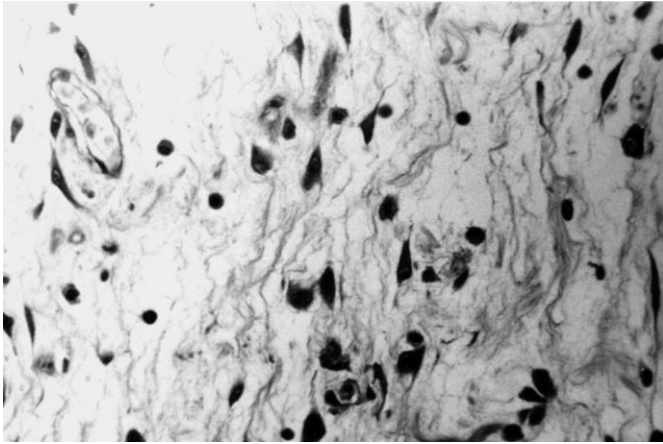


Fig. 5: Area of a healing fissure of Crohn's disease showing also some morphological similarities with inflammatory fibroid polyp (H-EX400).

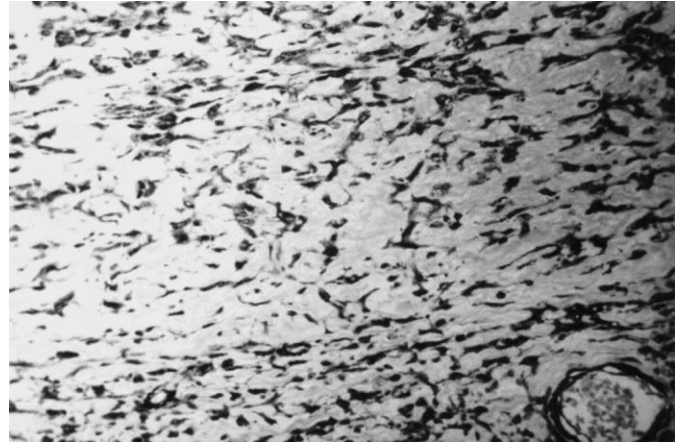


Fig. 6: Focal positive expression of actin in smooth muscle (Actin immunostaining X200).

Immunohistochemistry

Immunohistochemical examination of the lesion, revealed diffuse positive staining of the mesenchymal cells for Vimentin. A patchy expression of smooth muscle actin was also found in the perivascular and interstitial mesenchymal cells (Fig. 6). Staining for desmin, CD31, PGM-1 and S100- protein was also negative. CD117 and the markers CD34 and bcl-2, commonly found in gastrointestinal stromal tumors were, as expected, negative.

Discussion

Inflammatory Fibroid polyps (IFP) are rare tumor-like lesions, involving every part of the gastrointestinal tract. In most patients, in whom IFPs are located in the small bowel, the clinical picture is characterized by symptoms and signs of obstructive ileus usually due to intussusception. IFP have rarely been described in patients with inflammatory bowel disease. Shimer et al.² first described two cases of coexistence of Crohn's disease with IFP among a series of 12 cases. To the best of our knowledge, only four other cases have been described in conjunction with Crohn's disease – in the form of case reports –²¹⁻²³, and two cases in conjunction with ulcerative colitis^{24,25}. Thus, the total number of coexistence of IFP and inflammatory bowel disease described so far is nine. It must be stressed, that all cases with IFP described so far, were also manifested by the symptomatology of the accompanying inflammatory bowel disease and manifested with obstructive ileus due to intussusception.

Since its first description by Vanek in 1949²⁶, the histogenesis of IFP remains ambiguous. The cellular origin of IFP remains obscure, even today²⁷⁻³². An infective origin has not been documented, although some reported cases showed an association with *Helicobacter pylori* infection²⁷. An interesting report describes multiple and recurrent IFP in three generations of a family thus

supporting the theory of the existence of a polygenic type of inheritance and a multifactorial etiology.

The neurogenic origin of the lesion has been excluded, because of the absence of any similarity between the IFP cells and the Schwann cells and because of negative staining for S-100 protein. The vascular origin supported in the past³³ can be safely excluded because of the absence of endothelial markers³⁴. The histiocytic markers PGM1, KP1, and MAC387, are negative³⁴. In several cases, a focal positivity of the proliferating cells for smooth-muscle actin was found³⁵. The consistent positivity for CD34 found in some cases, made the relationship between IFP and gastrointestinal stromal tumors quite possible³⁴. However, positivity to CD34 is variable and has only been described in cases with concentric distribution of stromal elements around vessels, glands, or muscle bundles. This gave rise to some views according of which IFP with concentric architectural development of their stromal elements might have different histogenesis from the rest. According to these reports they are derived from a subpopulation of dendritic interstitial cells, different from that of interstitial Cajal cells (ICC), mainly localized around vessels and muscle fibers of the muscularis mucosa³⁶. On the other hand, most of the electron microscopy studies have demonstrated fibroblastic or myofibroblastic features in the proliferating cells^{2,31,32}.

Some authors believe that IFP might be the result of an inflammatory-reactive process (granulation tissue reaction) in areas of irritation of the bowel wall due to trauma, chemical substances, or other biological causes. However, the abundance of myofibroblasts seen in granulation tissue in contrast to their small number or even absence in IFP and the prominent number of basophils in IFP in contrast to their absence in granulation tissue, make this hypothesis rather impossible¹⁰. From a cellular or architectural point of view, Shimer et al.² suggested that IFP could represent a peculiar type of gra-

nulation tissue, the extent and tumor-like appearance of which is due to the limited number of myofibroblasts, compared to typical granulation tissue. This view is supported by the immunohistochemical focal expression of actin in the stromal cells found in many cases as was happen in our case.

As far as the relationship between IFP and Crohn's disease is concerned, we are not able to propose a satisfactory etiopathogenetic link, although their combination supports an immunological contributing factor. We consider the similarities found in the granulation tissue of some fissures of Crohn's disease and the tissue of IFP, as having special interest. It is possible that the concurrent existence of IFP and Crohn's disease could represent a reactive and/or reparative lesion.

The histological differential diagnosis of IFP includes all benign tumors of gastrointestinal tract, and localized eosinophilic gastroenteritis as well. In our case, the absence of peripheral eosinophilia, history of allergy, malabsorption, and eosinophilic infiltration of the bowel, were against the diagnosis of eosinophilic gastroenteritis. Differential diagnosis must also include inflammatory myofibroblastic tumors (inflammatory pseudotumors) from which, however, IFP differ clinically (younger age, fewer episodes of bowel obstruction and less tendency for recurrences)³⁷. They also differ histologically, as they are presented with more fibrosis and eosinophilic infiltration and less lymphocytic infiltration. Moreover, IFP display normal vessels in a larger proportion compared with inflammatory fibroblastic tumors. Immunohistochemically, the majority of inflammatory fibroblastic tumors give positive actin staining (86% versus 13% in IFP)³⁴.

In conclusion, IFP can be found on the ground of underlying Crohn's disease and can be manifested as an acute abdomen. Obstructive ileus due to intussusception could be the first manifestation of the combination of the two disorders. The exact etiopathogenetic relationship between Crohn's disease and IFP remains obscure, although a reparative character of the second pathologic condition is supported.

Riassunto

Si descrive il caso di una paziente 35enne che ha sviluppato contemporaneamente il morbo di Crohn ed un polipo fibroide infiammatorio dell'ileo terminale.

La combinazione delle due malattie si è espressa clinicamente con un quadro di ileo ostruttivo. Durante l'intervento si è messa in evidenza una formazione polipoide del diametro all'incirca di 4 cm, la quale provocava un quadro di intussuscezione intestinale. Il tratto intestinale ileale resecato ed asportato all'intervento, si presentava dilatato ed una volta aperto, a livello della mucosa si sono osservate multiple ed estese ulcerazioni e fissurazioni. L'esame istocitologico del tratto intestinale in questione ha confermato la coesistenza del morbo

di Crohn e del polipo fibroide infiammatorio intestinale. La colorazione immunoistochimica specifica per l'actina, ha mostrato una positività focale, mentre quelle per la desmina, la CD31, la proteina S100, la PGM-1 CD34, la CD117 e la bcl-2 erano negative. Si conclude che la coesistenza del morbo di Crohn e di un polipo fibroide infiammatorio intestinale è possibile, e può manifestarsi con un quadro di ileo ostruttivo, il quale per lo più può esserne la prima ed unica manifestazione clinica di questa strana combinazione di patologie. La combinazione delle due malattie in questione sottolinea il carattere ricostruttivo della lesione. Rimane però ancora oscura l'esatta correlazione eziopatogenetica delle due entità patologiche nello stesso paziente.

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