# Generalised Peritonitis Secondary to an Acute Perforation of Crohn's Ileitis: A Case Report

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**Citation**

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**Abstract**

Acute perforation of a Crohn's ileitis resulting in generalised peritonitis is a rather occasional and rare event. We present the case of a young girl retrospectively diagnosed with Crohn's disease after undergoing an emergency laparotomy.

## INTRODUCTION

Acute perforation of a Crohn's ileitis resulting in generalised peritonitis is a rather occasional and rare event. We present the case of a young girl retrospectively diagnosed with Crohn's disease after undergoing an emergency laparotomy.

## CLINICAL HISTORY

A 23-year-old girl was reviewed in the emergency department with a suspected perforated appendicitis with complaints of a sudden onset right lower quadrant pain of 14 hours duration. Simple analgesics had failed to relieve the pain. She had associated fever, nausea and abdominal distension without any orificial bleeding. She was otherwise fit and healthy without previous ailments.

Her past medical history consisted of a single pregnancy with spontaneous abortion and celiac disease. There was no family history of inflammatory bowel disease. Her only medication was Sertraline. She smoked at least 10 cigarettes a day.

On examination, she was in hypovolemic shock and distressed. She weighed 54kg. Her abdomen palpation revealed generalised tenderness and rigidity. Bowel sounds were absent.

Investigations revealed a WCC count at 10.2 (4-11: normal) with a slight neutrophilia and a CRP of 39 (<5: normal). Other biochemical parameters were normal including serum b-HCG. USS did not identify the appendix and could only identify a segment of thick terminal ileum with increased vascularity. Subsequent CT of the abdomen showed a 9.5mm thickened, long segment of terminal ileum with free air, fluid and fat stranding along the small bowel mesentery. A strong suspicion of an inflammatory bowel disease was made.

**Figure 1**

Thickened segment of terminal ileum with a pocket of free air

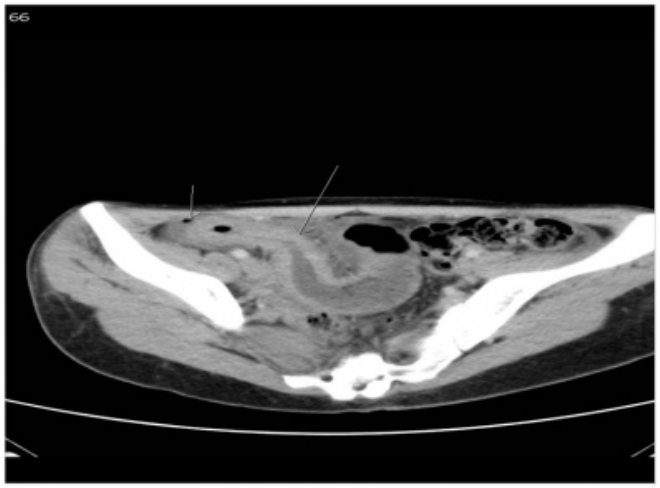


**Figure 2**

Pockets of free air and fat stranding in the small bowel mesentery


After a prompt resuscitation she was taken to the operating theatre immediately. Laparoscopy revealed an at least 20cm long segment of inflamed terminal ileum, fat wrapping, perforation at 15cm from the ileocaecal junction and 4-quadrant pus. Laparoscopic limited right hemicolectomy was performed with a primary ileocolic anastomosis. Copious lavage was performed with warm saline. The abdominal wound was closed without a drain. She had a smooth recovery with covering intravenous antibiotics and was discharged on the 6th postoperative day.

The histopathology report showed evidence of Crohn's disease with active inflammation at the proximal resection margin, peritonitis and an incidental 6mm sized carcinoid tumour at the tip of the appendix. There was no evidence of malignancy in the specimen.

**Figure 3**

Non-caseating granuloma (H&E, low resolution 10x10)

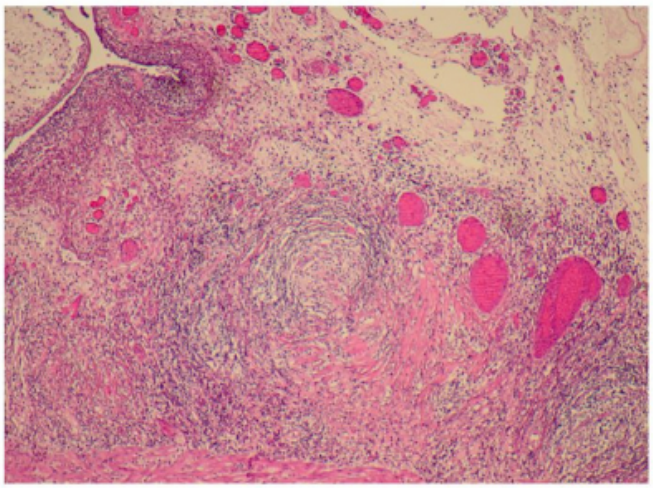
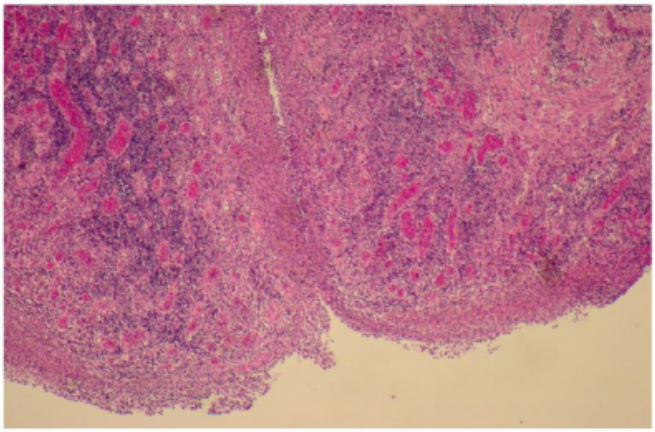


**Figure 4**

Inflammation with classical fissure ulcers of Crohn's disease (H&E, low resolution 10x10)



## DISCUSSION

Crohn's disease is an idiopathic, very insidious, chronic transmural inflammatory disease of the gastrointestinal tract, affecting any part from mouth to anus, but mostly small bowel and colon. It affects both genders equally and has bimodal incidence, occurring mostly in the 2nd to 3rd decade of life and in smaller rate during the 6th decade.

Characteristically, Crohn's disease patients show insidious onset of abdominal pain and diarrhoea with interval lucid period. With time and disease progression these symptoms become more frequent and severe. A time period of at least 10 years with the disease will have elapsed before a perforation complication will occur in 30-40% of CD patients. [4, 5]

An acute generalised peritonitis following a free perforation

in patients with Crohn's disease is uncommon and rare with an occurrence rate from 1% to 5%.[2,6] Due to the disease longevity and its gradual progression, the perforation is usually contained by surrounding omentum and other viscera leading to abscess or fistula formation rather than free peritonitis.[1]

Despite Crohn's early statement of "free perforation of ileitis never occurs" [3], there have been increasing reported cases of generalised free peritonitis in patients of Crohn's disease. [2]

It is difficult to diagnose a perforated regional ileitis clinically as it mimics any other general peritonitis related with other visceral perforation. A CT scan is the primary investigation modality of choice and the radiologist is usually the first clinician to diagnose the disease complication. [7, 8]

The actual mechanism of free perforation in Crohn's disease is a matter of debate. Crohn himself suggested presence of "widespread suppurative infiltration of bowel wall in the absence of protective granulomatous reaction."[9] Others suggest bowel distension with increased intraluminal pressure proximal to obstruction. Steroid is another risk factor for perforation. Our patient was not on steroids but her thickened terminal ileum segment might have contributed to obstruction and subsequent perforation.

Like any patient with generalised peritonitis secondary to perforated viscera, emergency operation with bowel resection and anastomosis is a must and life saving in patients with free perforation general peritonitis with regional enteritis. The approach method into the peritoneal cavity and drains are purely based on the choice and the experience of the attending surgeon. Our patient recuperated very well despite our laparoscopic approach and no-drains method.

To summarise, acute generalised peritonitis with free regional enteritis perforation is rare and unusual even though possible. It is challenging to diagnose the condition clinically as it mimics acute abdomen secondary to other common causes such as perforated appendicitis. It is even more challenging to diagnose one in an otherwise healthy individual. CT scan is the investigation of choice and emergency laparotomy with bowel resection and anastomosis is life saving.

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