ORIGINAL RESEARCH PAPER

General Surgery

# FOREIGN BODY GRANULOMA CAUSING INTESTINAL PERFORATION IN A VIRGIN ABDOMEN: A CASE REPORT

**KEY WORDS:** intestinal obstruction, intestinal perforation, foreign body granuloma, virgin abdomen

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**ABSTRACT**

Granulomas are a well recognised entity in gastrointestinal surgery. These are mainly foreign body granulomas (formed in response to a foreign irritant, such as a suture material from a prior surgery, talc, contrast material) and immune granulomas (in chronic inflammation). On histopathology, the foreign body giant cell reaction contains multinucleate giant cells with nuclei that are distributed through the eosinophilic cytoplasm, in which the culprit foreign material may often be evident. Here we present an interesting case of a distal ileal obstruction and perforation due to a foreign body granuloma in a male with no prior history of surgery or even endoscopy where no definitive inciting foreign body could be isolated on histopathology, leaving the cause of his foreign body reaction to remain a mystery.

## INTRODUCTION

A granuloma arises from a chronic inflammatory reaction to a persistent antigen, which leads to the organisation of activated macrophages around it. Granulomas are a well recognised entity in the gastrointestinal tract and there are 2 main types of granulomas found here: a foreign body granuloma formed in response to a foreign irritant, such as a suture material from a prior surgery, talc, contrast material or even faecal matter. The second type is immune granulomata, due to continuous T-cell action in chronic inflammation[1].

Foreign body granulomas have been reported in post-operative patients and those who have undergone endoscopic procedures in the past. Several materials used during the process can incite such a reaction. There are reports of submucosal lifting agents injected during endoscopic procedures causing a foreign body reaction mimicking a tumour[2]. The human body is exposed to many foreign bodies during surgery in the form of sutures, implants, gauze, lint, glove powder and so on. Even though absorbable sutures are employed often in practice, suture granulomas are well established [3].

Histopathologically, the foreign body giant cell reaction contains multinucleate giant cells with nuclei that are distributed through the eosinophilic cytoplasm. The culprit material may be often evident in the H&E stain, sometimes after cutting multiple deeper levels, or may become apparent upon polarisation[1].

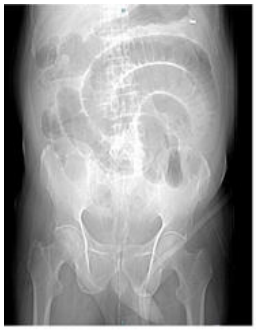
Here, we present a case of a distal ileal obstruction and perforation due to a foreign body granuloma in a male with no prior history of surgery or endoscopy.

## CASE REPORT

A 68-year-old diabetic male with no history of prior surgeries, presented with diffuse abdominal pain and abdominal distension of one day duration.

On examination, he was tachycardic. His abdomen was distended, diffusely tender and tympanic to percuss. Bowel sounds were present but sluggish. On digital rectal examination, his rectum was empty.

Computed Tomography Abdomen and pelvis showed long segment thickening and irregularity of distal ileum with edema with features suggestive of intestinal obstruction with secondary contained ileal perforation at the transition point with evolving abscess formation (Image 1).



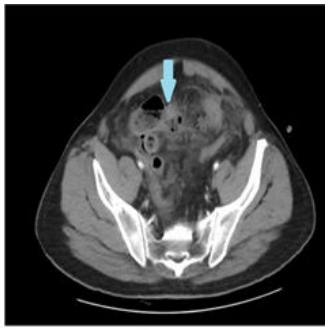


**Image 1 A-** Computed Tomography image: Dilated bowel loops

**Image 1 B-** Computed Tomography image: Transition point at distal ileum with contained perforation

He underwent diagnostic laparoscopy. The affected ileal loop was resected and sent for histopathological examination, and a double barrel stoma was created.

Histopathology of the resected bowel (Image 2) showed features of chronic ileitis with necrotizing granulomatous reaction and marked serosal foreign body giant cell reaction with ingested faintly basophilic material. Stratified squamous epithelium was seen focally. It was negative for dysplasia and acid fast bacilli. His post-operative period was uneventful, hence he was discharged later. He was on follow up and stoma reversal was done after 6 weeks.

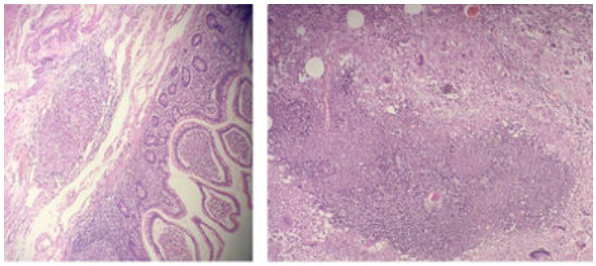


**Image 2-** Histopathology of resected bowel showing foreign body giant cells with inflammation

## DISCUSSION

It is often a diagnostic challenge for both surgeons and pathologists to establish the cause for non-traumatic distal ileal perforation, attributed to the fact that it can have many differing aetiologies such as intestinal tuberculosis or typhoid in developing countries, Crohn's disease, perforated diverticula, radiation enteritis or foreign bodies[4].

In this case, it would not have been possible to arrive at a definitive diagnosis clinically. However, histopathological examination pointed towards a foreign body reaction inciting a tumour like growth, in an otherwise virgin abdomen.
Although the causative foreign material is usually found within the macrophages, no such definitive clues were available in this case.

Other reported culprits causing gut pseudotumours are pulse granulomas due to traumatic entrapment of food particles, resulting eosinophilic and granular material in macrophages [5], and dietary bone, although bones commonly cause perforation, abscess or fistula formation [6].

These are especially likely in the absence of a history of surgery or of foreign body ingestion but are usually evident on histopathological examination.

Hence, since our patient had no history of previous surgeries or foreign body ingestion, and no definitive inciting foreign body could be isolated on histopathology, the cause of his foreign body reaction still remains a mystery.

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