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## A case of acute appendicitis presenting as intestinal obstruction in a postnatal female – A case report and review

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### Abstract

Intestinal obstruction is a common surgical emergency caused by several conditions. Appendicitis as a cause is both uncommon and requires high suspicion index. The diagnosis of such a condition is usually possible only on table, although CT has a questionable value. This is a very common disease which can present with a very rare and dangerous complication. Every emergency surgeon needs to be aware of such a possibility.

We report a case of 31 year old female came with complaints of abdominal distension and features of intestinal obstruction. On proceeding with laparotomy, the appendix was inflamed and formed a band over the cecum which caused the obstruction. We reviewed literature to find similar cases reported in the past.

**Keywords:** Intestinal obstruction, appendicitis, ileocolic

### Introduction

Intestinal obstruction is a common surgical emergency caused by various conditions. Appendix as a cause of intestinal obstruction is uncommon and not usually suspected. Although it was described as early as 1901, very few reports are available which do a comprehensive review. Appendix causing intestinal obstruction is extremely rare with very few cases reported. Pre-operatively it is very difficult to diagnose this condition. The diagnosis is always made on table during the laparotomy. The treatment may vary from appendectomy to intestinal resection or even right hemicolectomy.

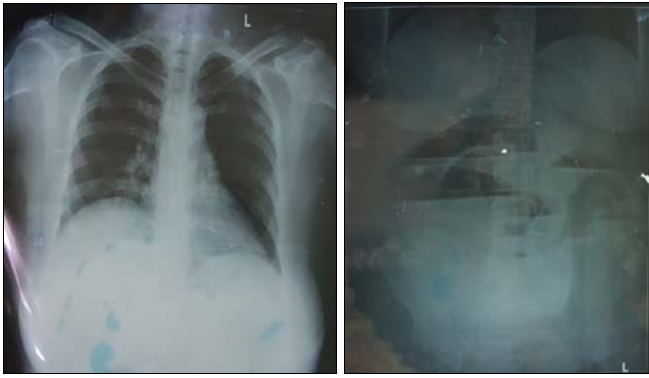
We are reporting a case of intestinal obstruction caused by appendicitis, for which appendectomy with ileocolic resection with ileocolic end to side anastomosis was done. This is a very rare complication of an extremely common disease. We reviewed the literature to find out about appendix producing intestinal obstruction.

We have included a comprehensive discussion about appendicitis producing intestinal obstruction with regards to its various pathological types, different clinical presentations, diagnosis and management.

### Case Report

A 31 year old female came with complaints of abdominal pain for 3 days which was continuous and diffuse type with no aggravating or relieving factors, associated with vomiting for 2 days with 4 to 5 episodes per day non bilious, non-projectile. Patient also complains of abdominal distension for 3 days progressive in nature with obstipation for 3 days. The patient had history of LSCS with PS done 18 days back and had normal bowel habits post LSCS and was discharged on 5<sup>th</sup> POD.

On examination patient was conscious, oriented, and afebrile. The patient had pallor and dehydration was present. Tachycardia was present. Other vitals were stable. On per abdomen examination abdomen was distended, diffuse tenderness present, no guarding and rigidity. Initial blood investigations showed increased total counts and Hb – 11.5 g/dl with all other parameters within normal limits. X ray abdomen pelvis showed multiple air fluid levels. CT abdomen pelvis showed multiple dilated air and fluid filled jejunal and ileal loops noted with collapse of colon and rectum, transition point at distal ileum and minimal free fluid present.

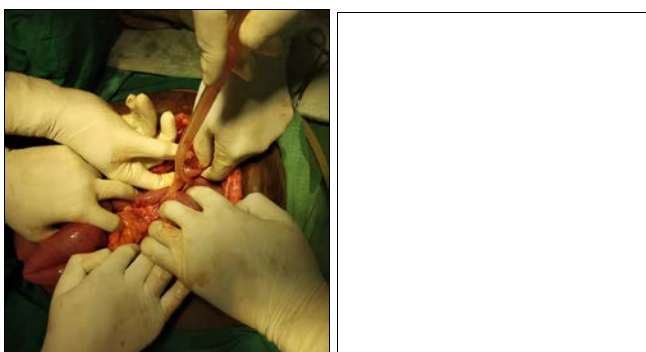


**Fig 1:** Xray abdomen showing multiple air fluid levels

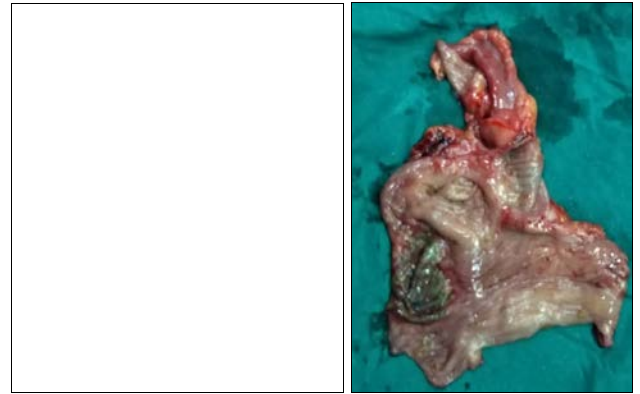


**Fig 2:** CT abdomen showing multiple air fluid levels

Patient was kept nil per oral and started on IV antibiotics and fluids. Ryles tube aspiration 400 ml bilious fluid was drained. Patient was taken up for emergency laparotomy. Appendix was found to be inflamed with adhesions forming a band around the terminal ileum causing obstruction. Caecum underlying the band found gangrenous with inflammatory adhesions. Ileocecal resection with ileocolic end to side anastomosis done and defunctioning ileostomy was kept. Post operatively tachycardia with anaemia was present till POD 2. Two units of PRBC was transfused and patient recovered well. On POD 4 liquid diet was started and the ostomy was functioning well. The patient was discharged on POD 10. Histopathological report confirmed as acute appendicitis. The patient was on regular follow up and ileostomy reversed on a later date.



**Fig 3:** On table picture showing inflamed appendix with a band around the ileum



**Fig 4 and 5:** On table picture showing gangrenous caecum underneath the band and the corresponding resected segment

**Discussion**

Appendicitis causing intestinal obstruction was described as early as 1901, when Lucius Hotchkiss read at the meeting of New York surgical society, three successful surgeries for intestinal obstruction due to appendicitis. In 1908, Forbes hawks divided them into mechanical, septic and a combination of the two.

The pathology underlying the cause of intestinal obstruction in acute appendicitis could be classified into:

- a. Adynamic type of intestinal obstruction – most common type, seen in about 1-5% of appendicitis, which is due to the local paralytic ileus which occurs due to appendicular inflammation spreading to the adjacent bowel wall.
- b. Mechanical intestinal obstruction – without strangulation occurs due to kinking, compression or traction of the small bowel trapped in an appendicular mass or abscess. It can be managed conservatively as the obstruction should resolve with the resolution of the mass. In some cases, minimal amount of obstruction may persist which can turn into acute intestinal obstruction when a secondary pathology occurs after months or years.
- c. Small bowel strangulation – the first case of small bowel strangulation caused by appendix was described by Naumon in 1963. The appendix wrapping around the base of a bowel loop can cause strangulation or when inflamed appendix adheres to caecum, small intestine or posterior peritoneum and a part of the bowel herniates through the gap. This is the rarest cause of only nearly ten other cases reported.
- d. Mesenteric ischemia – intestinal obstruction as a result of mesenteric ischemia caused by appendix is the rarest type with a single case described by Gupta S. in 1969. The inflamed appendix was adhered to the mesentery near the ileocolic artery causing thrombosis and gangrene of terminal ileum.

Appendix is a mobile organ with many variations in the normal position. In the early phases of appendicular inflammation, it would get adhered to surrounding structures producing various pathologies. Increased length of appendix logically seems to predispose to adhesions.

Although the pathology may vary, clinically it is not possible to determine the exact type of intestinal obstruction present. Clinically they can be classified into two types:

1. Predominant features of appendicitis with some evidence of intestinal obstruction: In this group of patients, intestinal obstruction occurs during the phase of active appendicitis. Hence the cause is likely to be mechanical or adynamic. However, strangulation too may be seen in acute phase.

2. Patient with Acute intestinal obstruction – On laparotomy / evaluation found to have appendicitis as the cause. In these patients, they may or may not have a history of appendicitis. Intestinal obstruction dominates the clinical picture and may completely mask the underlying appendicular disease. Appendicitis should therefore be considered in cases of mechanical intestinal obstruction of unknown cause, mostly in the elderly.

Early diagnosis and intervention is very important in intestinal obstruction. Whenever features of intestinal obstruction predominate, we may proceed with a midline vertical incision as the exact pathological type is not known. Mc Burney's incision may be sufficient if the obstruction is adynamic or mechanical. In case of intestinal obstruction without known cause, midline vertical incision is definitely the approach of choice.

### Conclusion

Intestinal obstruction due to appendicitis may be of 4 types: adynamic, mechanical, strangulation and due to mesenteric ischemia. It is difficult to differentiate between these types clinically and radiologically. Role of CT in detecting appendix as the cause of intestinal obstruction is questionable.

Midline laparotomy would be the approach of choice whenever features of intestinal obstruction predominate, even if the cause is found to be appendicitis.

Whenever there is intestinal obstruction associated with acute appendicitis, it may not always be adynamic and other rare causes should always be kept in mind.

### Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

### Abbreviations

CT – computerized tomography, PRBC – packed red blood cells

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