

SMALL BOWEL GANGRENE DUE TO INFLAMED APPENDICULAR BAND: A CASE REPORT

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ABSTRACT

Appendicular band syndrome also called appendicular knot or tie is an extremely rare complication of acute appendicitis the world over. Adynamic small bowel obstruction or ileus is not uncommon in all forms of peritoneal inflammation but anatomical small intestinal obstruction or gangrene due to appendicular tourniquet is a rare condition and only a few cases have been reported. We report the case of a 44-year-old man with clinical features suggestive of ruptured appendix, who at laparotomy was found to have gangrenous distal ileum due to inflamed appendicular band. Post-appendectomy, he had right hemi-colectomy done owing to non-viability of the gangrenous distal ileum. Post-operative and follow-up periods were non-adversely eventful. Despite its rarity, the possibility of such diagnosis in the evaluation of a patient with acute abdomen should not be overlooked especially in the absence of an identifiable aetiology. In addition, the diagnosis of mucinous cystadenoma from the excised appendix re-emphasizes the importance of submitting surgical specimen for histopathology.

Keywords: Small bowel gangrene, Inflamed appendicular band

INTRODUCTION

Appendicular band syndrome also called appendicular knot or tie is an extremely rare complication of acute appendicitis the world over.¹ Adynamic small bowel obstruction or ileus is not uncommon in all forms of peritoneal inflammation but anatomical small intestinal obstruction or gangrene due to appendicular tourniquet is a rare condition.² with about 11 cases reported so far.³ We therefore report the case of a 44-year-old man with clinical features suggestive of ruptured appendix, who at laparotomy was found to have gangrenous distal ileum due to inflamed appendicular band.

CASE REPORT

A 44 years old man was referred to us from a private hospital after 24 hours of hospital admission having presented there with a day history of

periumbilical pain that shifted to the right iliac fossa and later became secondarily generalised. He had anorexia, 2 episodes of vomiting of recently ingested food and 3 episodes of passage of loose stool that was not blood-stained or mucoid. There was no history of abdominal swelling or fever. He had no urinary symptom. However, he was a known peptic ulcer disease patient. He had bilateral inguinal herniorrhaphy 9 years earlier.

He was acutely ill-looking, febrile with temperature of 37.8^oc, moderately dehydrated, not pale and anicteric. His pulse rate was 106 bpm and blood pressure was 120/80 mmHg. First and second heart sounds were heard without added heart sound. The abdomen was full with generalised abdominal tenderness marked at the right iliac fossa. There was rebound tenderness with absent bowel sound. Digital rectal examination revealed anterior rectal wall

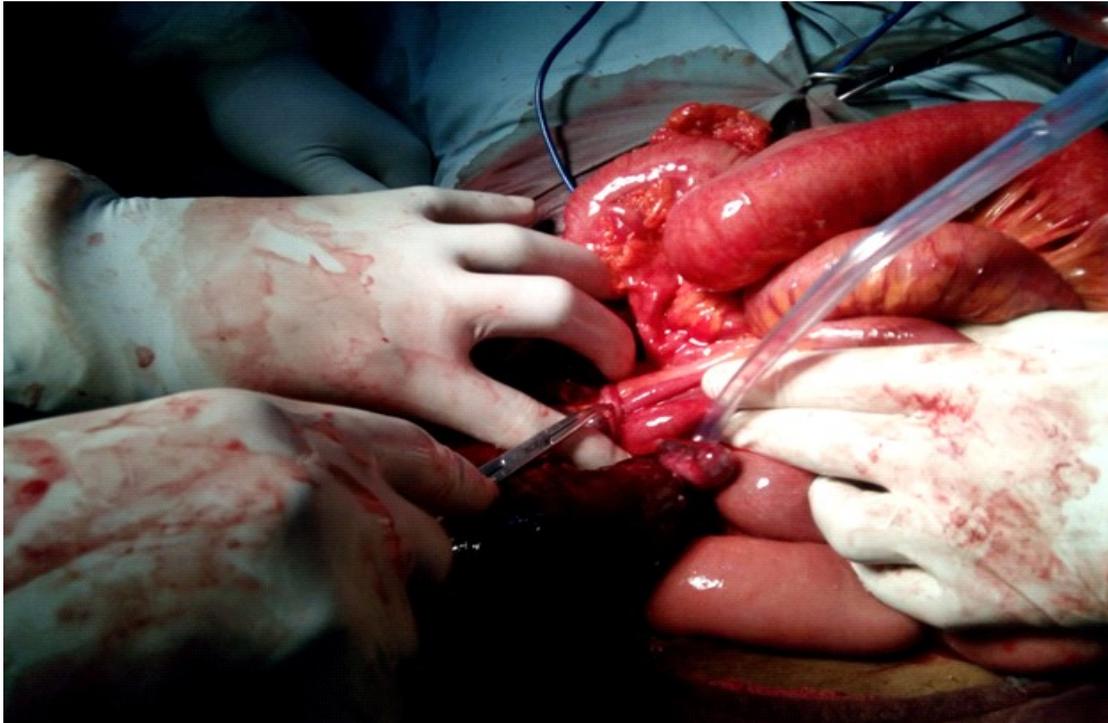


Fig. 1: Appendix encircling the terminal ileum

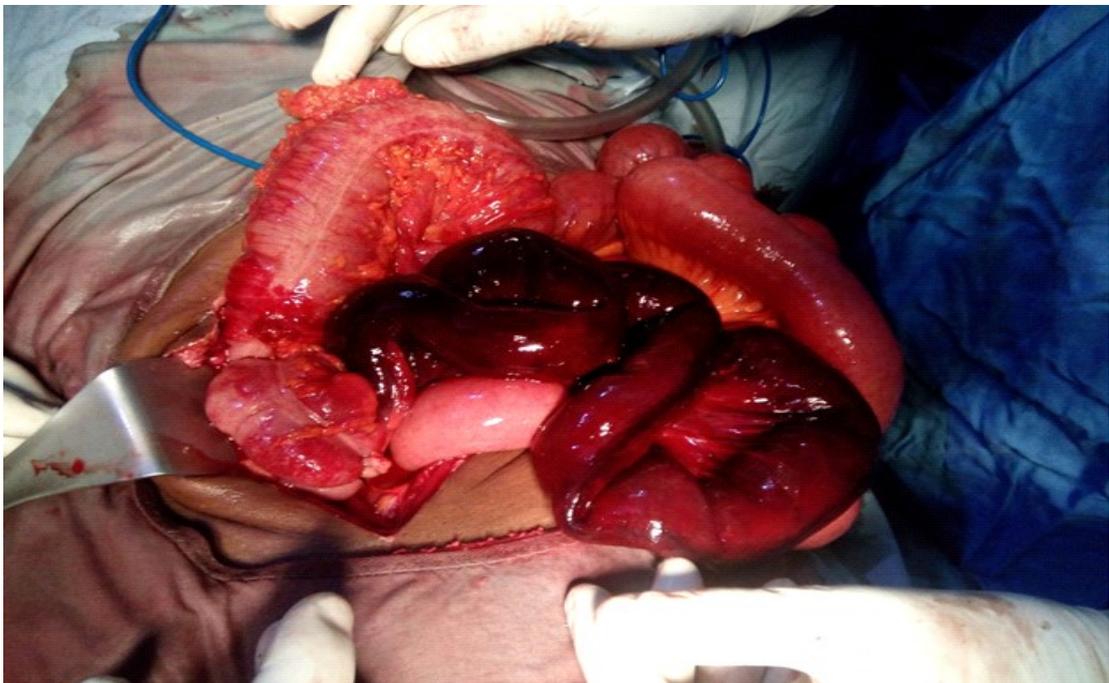
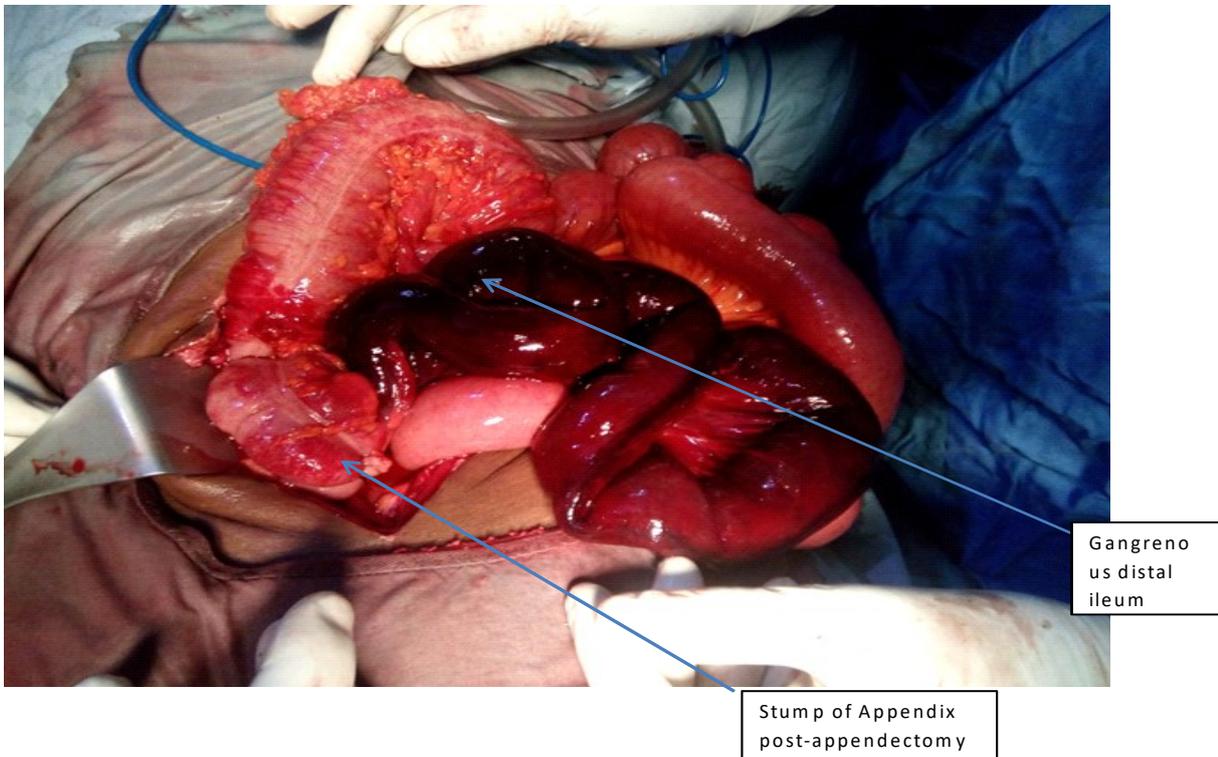
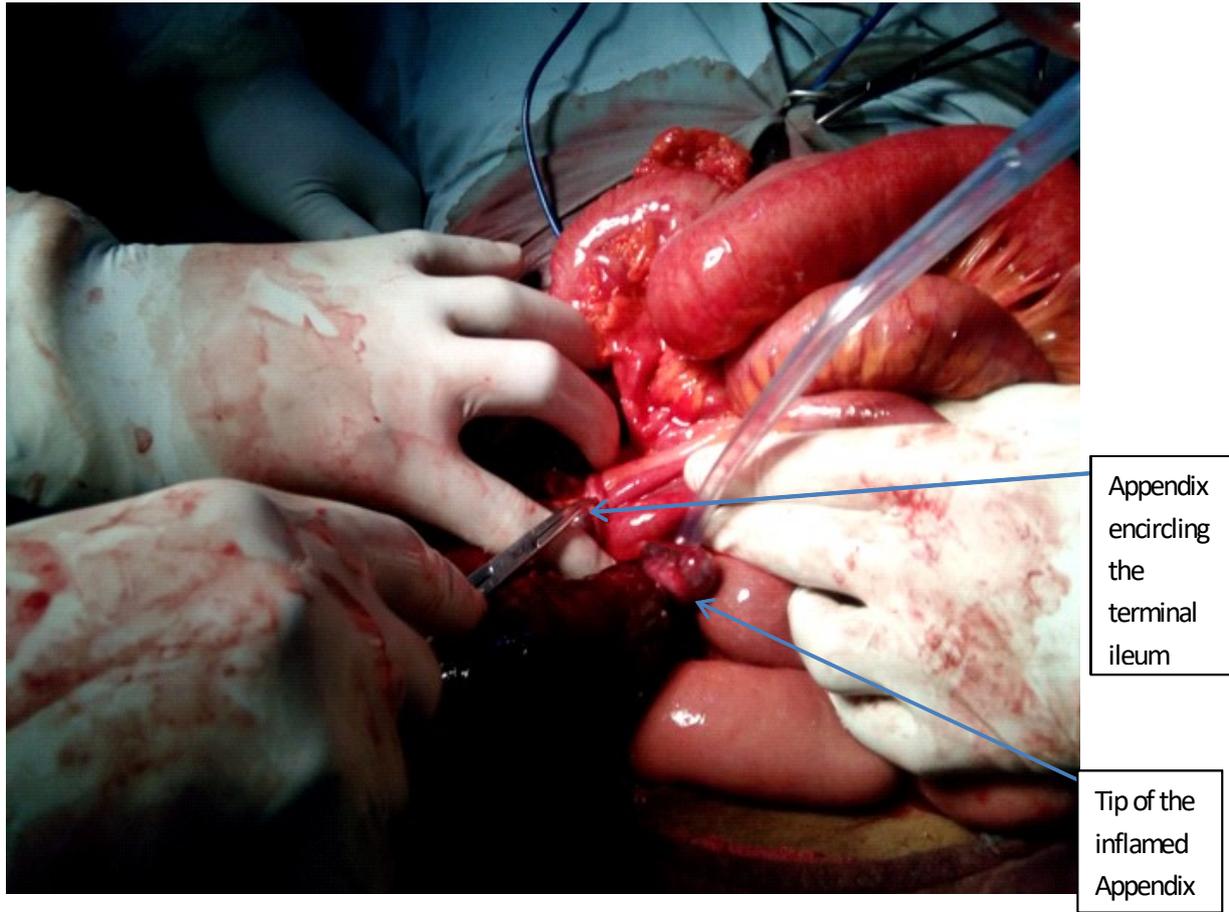


Fig. 2: Gangrenous distal ileum



tenderness, scanty faeces in the rectum and non-enlarged prostate. Gloved examining finger was stained with soft brownish stool that was not blood stained and non-mucoid.

The provisional diagnosis was generalised peritonitis secondary to ruptured appendix, to rule out perforated peptic ulcer disease.

Pre-operative investigations results were PCV = 35%, WBC = $8.7 \times 10^9 \text{ mm}^3$ with neutrophilia of 94% and lymphocyte of 6%; blood group was A+, retroviral screening was negative and urinalysis was negative for sugar and protein. Erect plain abdominal x-ray showed dilated small bowel loops with multiple air fluid levels. There was no pneumoperitoneum. Fasting blood sugar done after surgery was 74 mg/dl.

The operative findings were haemoperitoneum of about 800ml, 16cm long inflamed about to rupture appendix that formed a band around the terminal ileum just about 2cm proximal to the iliocaecal valve (Figure 1). However the tip of the appendix that formed the band was free. About 84cm of distal ileum was gangrenous extending proximally from the location of the band (figure 2). The small bowel proximal to the gangrenous segment was dilated. There was no mesenteric vascular occlusion noted. Appendectomy was done first to observe if the distal 84cm of the ileum would become pink after removal of the constricting appendicular band. This was followed by right hemicolectomy when non-viability of this portion of the ileum was confirmed post-appendectomy.

The post-operative diagnosis was gangrenous distal ileum secondary to an inflamed appendicular band. He made a non-adversely eventful recovery. He was discharged home in a stable condition and placed on regular follow-up for three months. The histology diagnosis was haemorrhagic necrosis of distal ileum and mucinous cystadenoma of appendix.

DISCUSSION

Appendicitis is the most common cause of acute abdomen.⁴ If not promptly diagnosed and operated, it can be attended by various complications. Small bowel obstruction secondary to an appendicular pathology is usually due to appendicitis causing small bowel ileus, an appendicular tumour, appendicular perforation or abscess formation.⁵ Inflammation of the appendix causing small bowel obstruction secondary to formation of a tourniquet is extremely

rare and its preoperative diagnosis can be challenging.⁶ The exact cause of this clinical condition is unknown. It may arise from long inflamed appendix,⁷ adherence of appendix to adjacent structures during the phase of inflammation due to mobility and variable position of the tip of appendix⁸ among other reasons.

Mechanical small bowel obstruction caused by appendiceal knot usually presents a certain period after the episode of acute appendicitis.⁹ Early diagnosis and necessary surgical intervention are essential to prevent bowel ischemia and gangrene as noticed in this case. Our patient presented to the referring health facility with a day history of periumbilical pain that shifted to the right iliac fossa and later became secondarily generalised. Despite the apparent prompt surgical intervention, about 84cm of distal ileum was gangrenous from the appendicular band. This long length of ileum in several loops was trapped and strangulated within the encircling appendicular band. This may account for the rather long length (84 cm) of gangrenous ileum. In addition, the delay in presentation of greater than 24 hours (between the two hospitals) allowed the vascular compromise to worsen thereby resulting in gangrene.

When available, Computed Tomography (CT) with contrast of the abdomen and pelvis might be helpful in determining the cause of the obstruction as diagnosis using plain abdominal X-rays or ultrasound of the abdomen may be challenging.⁶ However, its non-availability and or non-affordability should not obstruct prompt surgical intervention which is critical to favourable clinical outcome. From this experience, even if a pre-operative diagnosis of an appendicular tourniquet had been made, it is still advisable to start the surgery with a midline laparotomy incision rather than a Gridiron or a Lanz incision because of associated ease of bowel delivery⁶ as well as ease of ruling out other causes of obstruction.^{6,8} Also, bowel resection and anastomosis will be easier with a midline laparotomy incision in case a gangrenous bowel is encountered.

CONCLUSION

This case was reported to remind surgeons to consider visceral band a differential diagnosis of intestinal obstruction in acute abdomen, and also re-emphasize the importance of submitting excised appendix for histopathology.

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