

### Volvulus of the vermiform appendix

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#### Abstract

*Appendicitis is an extremely common presentation to general surgery in both adult and paediatric practice. Volvulus or torsion of the vermiform appendix, which is currently indistinguishable clinically from appendicitis, is an uncommon surgical emergency in children. Only a few cases are reported in the literature concerning this subject. We describe an 8 year old child who presented with right lower quadrant abdominal pain and was clinically diagnosed as perforated appendix. Laparotomy revealed a volvulus of the appendix and an emergency appendectomy was performed.*

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#### Introduction

Volvulus of the gut is the twisting of a loop of bowel around its mesenteric vascular axis producing intestinal obstruction. It commonly occurs in sigmoid colon, malrotated midgut, caecum and stomach.<sup>1</sup> Though acute appendicitis and its consequence are common in all age group including childhood but volvulus of the appendix is an uncommon phenomenon in children.<sup>2-3</sup> Only a few reports exist in the medical literature concerning this subject.<sup>4</sup> In 1918 Payne reported the first case of torsion of the appendix in an article in the British Journal of Surgery.<sup>5</sup> Two years later Beevors reported a similar case, this time in the Lancet.<sup>6</sup> The age at presentation parallels that of acute appendicitis, affecting males and females of all ages. The youngest reported case was 50 days and the oldest was 76 years old. Known aetiological factor are faecolith, mucocele of appendix, mucinous cystadenomas, bilharzia of the appendix and mesoappendiceal lipoma. Rotation of the appendix has been seen in both clockwise and anti-clockwise directions, ranging from 120 degrees to 180 degrees.<sup>7</sup> Descriptions of the appearance of the appendix varied from twisted with minimal inflammation to severely congested and gangrenous or necrotic. Following the discovery of a case of appendicular torsion in a young boy due to a faecolith, a review of the literature was undertaken and the results of this are presented.

#### Case Report

An 8 years male child admitted into Khu1na Shishu Hospital, Khulna on 05.12.2012 with complaints of right lower quadrant gradually increasing persistent abdominal pain for 4 days associated with a few episode of non bilious vomiting. The child had no history of fever. He was prescribed antibiotic and analgesic by attending pediatrician but pain was gradually increasing. The child was afebrile, had tachycardia and apprehensive to touch of the abdomen which was rigid and tender. Bowel sound was normal. Provisionally he was diagnosed as a case of perforated appendix with a differential diagnosis of gangrenous appendicitis. On routine blood examination Hb level, total and differential leucocytes count was within normal limit. Plain radiograph of abdomen showed gas distended isolated intestinal loop in right iliac fossa (RIF) and an ill defined intestinal mass in RIF on abdominal ultrasonography.

After resuscitation laparotomy was done on 06.12.2012 through right infraumbilical transverse incision. Appendix was blackish and hugely distended like a loaded sigmoid colon. The distended appendix containing a large faecolith was twisted near its base (Fig-1a). After derotation whole of the appendix was found gangrenous except its base but no evidence of perforation on surface. Peritoneal cavity contained no pathological collection and rest of the abdomen was normal except loaded

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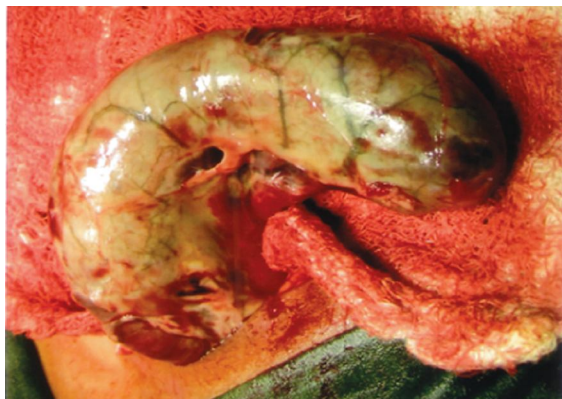


Fig 1. (a) Before excision

faecal matter in colon. Appendicectomy was done and abdomen closed in layers (Fig-1b). Histopathology of excised appendix showed inspissated faecal matter in lumen, wall was haemorrhagic and transmural infarction keeping the evidence of volvulus.



Fig 1. (b) After excision

Post operative recovery was uneventful and the patient was discharged on 4th POD.

## Discussion

Appendicular volvulus is a very rare condition and only few cases have been described in the literature. A review of the Entrez PubMed literature documented that only 25 cases of volvulus of the appendix have been reported.<sup>8,9</sup> Most of the papers describe a mucocele of the appendix which was complicated by appendicular volvulus developed as a result of an inborn defect in the mesoappendix. The mechanism of torsion appears to be similar to ovarian torsion during which a solid organ or a loaded gut fixed onto a narrow stalk is a prerequisite.<sup>9-10</sup> In our case appendix was heavily loaded with a large faecolith which was also reported by other observer.<sup>10</sup>

Clinical presentation of a volvulus of vermiform appendix may be similar to an appendicular abscess and acute appendicitis with or without perforation both on physical examination and imaging.<sup>4</sup> To prevent complications like gangrene and perforation, early surgical intervention is the rule. We also explored with a clinical diagnosis of complicated acute appendicitis. Computed tomographic scan plays an important role in evaluation in this situation. D'Souza and Abdessalam in 2011 reported a case where initial CT guided aspiration was tried in a case of volvulus of appendix with a tomographic suspicion of appendiceal abscess.<sup>4</sup> So, both the surgeon and the radiologist should be aware of the possibility of this rare entity of appendiceal volvulus.

Treatment is simple appendicectomy if diagnosis is prompt and intervention is earlier before complications (gangrene). The range of aetiological factors implicated and patients that may be affected is similar to that of acute appendicitis. The two conditions remain all but indistinguishable clinically, and therefore their management should be the same. As such, torsion or volvulus of the vermiform appendix is an interesting case to encounter, and surgeons should proceed confidently with operative management.

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