Intussusception of a Mucocele of the Appendix

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Abstract. Intussusception by an appendiceal mucocele into the colon is illustrated and the literature reviewed.

Key words: Appendix-mucocele — Colon-intussusception.

Both mucocele of the appendix and intussusception of the appendix are uncommon. Their combined occurrence as an intussusception of a mucocele of the appendix is rare. We report what we believe to be the 28th recorded case, and discuss the clinical features and preoperative diagnosis of this condition.

Case Report

A 21-year-old male Caucasian student was admitted as an emergency with a five week history of increasing colicky peri-umbilical pain without gastrointestinal upset. He was apyrexial on admission, had moderate epigastric tenderness but no rebound tenderness. No abdominal masses were palpable and he had normal bowel sounds. Rectal examination was normal and faecal occult blood was negative. On admission he had a normal white blood count, normal erythrocyte sedimentation rate (ESR), and normal liver function tests. The serum amylase was 500 (normal range 50–300 units/litre). Admission supine plain radiograph of the abdomen showed that the gas-filled bowel was mainly on the left side of the abdomen. There was no evidence of a soft tissue mass, calcification, localised ileus, or obstruction.

Diagnosis of mid-gut colic was made and he was treated empirically with propantheline bromide with complete resolution of symptoms within 24 h. Barium meal and small bowel series demonstrated initially a space occupying mass lesion within the duodenal loop, stretching the distal 2nd, 3rd, and 4th parts, and displacing the gastric antrum. However, later in the small bowel series, the intussusceptum was demonstrated lying in the transverse colon, outlined by contrast, and overlapping the "C"-loop of the duodenum, causing its deformity (Fig. 1). A hypotonic duodenogram carried out five days later when the patient was asymptomatic showed a normal duodenum.

During the asymptomatic period following his admission, a double contrast enema was also carried out and this confirmed the suspicion from the upper gastrointestinal series, that he was having intermittent intussusception and demonstrated an extrinsic mass at the lower caecal pole (Fig. 2). The appendix and terminal ileum were not demonstrated, but the features on this examination were suggestive of a benign 'tumour', probably of the appendix and this was considered to be the cause of the intussusception.

Elective laparotomy was carried out four weeks after presentation. The only abnormality found was that the appendix was grossly dilated and its proximal one third was intussuscepted into the caecum (Fig. 3). The peritoneum of the appendix and terminal ileum was thickened with fibrous adhesions to the greater
Fig. 2A and B. Clinically asymptomatic. Films during double contrast enema examination showing a smooth extrinsic ‘mass’ lesion involving the lower caecal pole. Neither the ileo-caecal valve nor the appendix is demonstrated.

Fig. 3. Excised mucocele of the appendix with proximal 1/3 intussuscepted into the cecum. Each division of the scale represents 1 cm.

Discussion

Mucocoeles of the appendix are uncommon and are almost always found incidentally at laparotomy or post mortem. Collins [1] found 112 cases of mucocele in a series of 50,000 surgically removed appendices and Woodruff [2] 136 in 43,000 appendices removed over a 24 year period at the Mayo Clinic. Mucocoeles are believed to result from proximal obstruction of the lumen of the appendix which leads to accumulation of mucin within the lumen of the distal appendix. Berry [3] claimed to have produced mucocoeles of the appendix by proximal ligation of the appendix in rabbits but Phemister [4] was unable to reproduce this finding in dogs. It is not clear whether the obstruction of the lumen is due to post-inflammatory scarring [5] or due to the normal involutional changes in the appendix with ageing [4] or to a combination of both factors.

Intussusception of the appendix is also uncommon, 122 cases being found in the literature up to 1967 by Paul and Ferraro [6]. They reported that this was normally a condition of children occurring about twice as commonly in males as females and that the normal presentation was either as colicky abdominal pain or acute appendicitis. A mass was palpable in about half of the cases reviewed. Usually treatment is by routine appendicectomy but one case of colonoscopic appendicectomy has been reported [7].

Intussusception of the mucocele of the appendix is rare and we have only been able to find 27 previously reported cases, details of which are given in Table 1. The mean age of these patients is 48 and our patient is the youngest reported. There is a female predominance (20 females, 7 males). The most frequent presentation is with colicky abdominal pain (19) which may be a chronic feature. Rectal bleeding (6) is the next most common symptom occurring either with or without abdominal pain. Less common features are abdominal distention (3), vomiting (3), or diarrhoea (3). Unequivocal right iliac fossa masses were found in 11 patients.