Chronic appendicitis diagnosed incidentally by colonoscopy

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INTRODUCTION

Acute appendicitis is a well-known clinical entity, but the concept of recurrent and chronic appendicitis has for a long time been controversial (Savrin et al, 1979). Colonoscopy allows direct visualization of the appendiceal orifice and can potentially diagnose appendiceal inflammation. If appendicitis does occur in a recurrent or more chronic form, it is possible it may be found while performing colonoscopy. This article presents the authors' experience of a patient who attended for a routine colonoscopy and was found incidentally to have appendicitis.

DISCUSSION

Colonoscopy allows direct visualization of the appendiceal orifice and can therefore lead to a diagnosis of appendicitis. Chang et al (2002) reviewed 14 017 colonoscopy reports between January 1996 and April 2000 and identified 21 patients whose colonoscopic diagnosis was appendicitis. Colonoscopy was performed because all but one patient had abdominal pain, atypical of acute appendicitis, which in 17 patients had lasted 10 days or longer. Furthermore, computed tomography had suggested a diagnosis other than appendicitis in 11 patients. Mucosal bulging and hyperaemia at the appendiceal orifice with oedema of the surrounding mucosa were the endoscopic findings in the majority of patients (Chang et al, 2002). Spontaneous discharge of pus or discharge of pus after biopsy from around the appendiceal orifice was seen in seven patients.

CASE REPORT

A 57-year-old woman attended the endoscopy unit for a colonoscopy for polyp surveillance. For the previous 2 weeks she reported experiencing intermittent pain in her lower right abdomen without any systemic upset. On examination she was apyrexial with a soft, nontender abdomen. Colonoscopy revealed diverticular disease affecting the entire colon and a 3 mm tubular adenoma in the transverse colon. The caecum appeared normal but the appendiceal orifice was found to be oedematous and inflamed (*Figure 1*). No pus could be seen emerging from the appendiceal orifice. Given that the patient was systemically well with no abdominal tenderness it was thought she may have a low-grade appendicitis and allowed home with a 7-day course of metronidazole.

Three weeks after colonoscopy she attended her GP with persisting intermittent right lower abdominal pain, but remained systemically well with no abdominal tenderness. Five weeks after colonoscopy she attended the accident and emergency department complaining of a 3-day history of persistent right-sided lower abdominal pain, diarrhoea and nausea. She had a mild pyrexia (37.4°C), and abdominal examination revealed tenderness suprapubically and in both iliac fossae with no signs of peritonism. Investigations showed a normal white cell count (9.2 x 10^9/litre) and a mildly elevated C-reactive protein (23 mg/ml). A preliminary diagnosis of diverticulitis was made and she was treated with intravenous cefotaxime and metronidazole, and intravenous fluids. An abdominal ultrasound was reported as showing a thickened area of bowel in the right iliac fossa, possibly representing an inflamed appendix. Her pain and tenderness persisted and therefore it was decided to perform an appendicectomy. At operation the appendix and the caecal wall around the appendix base was found to be oedematous and inflamed, but there was no free pus. An appendicectomy was performed and the patient made an uneventful recovery and was discharged home pain free 3 days postoperatively. When reviewed 3 weeks later she was systemically well and remained pain free.

Histological examination of the appendix showed an abscess connecting with the lumen of the appendix at the proximal end, arising in an acquired appendiceal diverticulum. The appendix throughout showed fibromuscular thickening, a transmural chronic inflammatory cell infiltrate with a few intraepithelial neutrophils but no granuloma formation.

Appendicectomy was performed after diagnosis in 17 patients, with histological confirmation of appendicitis in each case. Three patients had resolution of their symptoms after pus drained from the appendiceal orifice, two of which underwent appendicectomy 6 months later for recurrent symptoms. Histology of the inflamed appendix in seven patients revealed a predominantly chronic inflammatory cell infiltrate. The authors concluded that colonoscopy can be useful in the diagnosis of appendicitis when the clinical presentation is atypical and/or imaging studies are non-diagnostic (Chang et al, 2002).

Patients with appendicitis in whom the inflammation is limited within the mucosa and submucosa may have very few symptoms or symptoms that are more chronic, as they lack the serositis that would normally induce localization of pain and tenderness (Johnson and DeCosse, 1998; Uehara et al, 2000). These cases may be self-limiting or may eventually result in so-called recurrent or chronic appendicitis. If recognized early, it is suggested that broad-spectrum antibiotic therapy might achieve complete resolution (Johnson and DeCosse, 1998), especially if combined with endoscopic aspiration of appendiceal pus (Said et al, 1995).

Therapeutic intervention has been attempted at colonoscopy by draining the pus from the inflamed appendix lumen into the caecum. This has been done either by inserting a catheter into the appendix orifice to aspirate the pus directly (Said et al, 1995) or by probing or taking repeated biopsies at the site of mucosal swelling until pus is seen to drain into the caecum (Ohtaka

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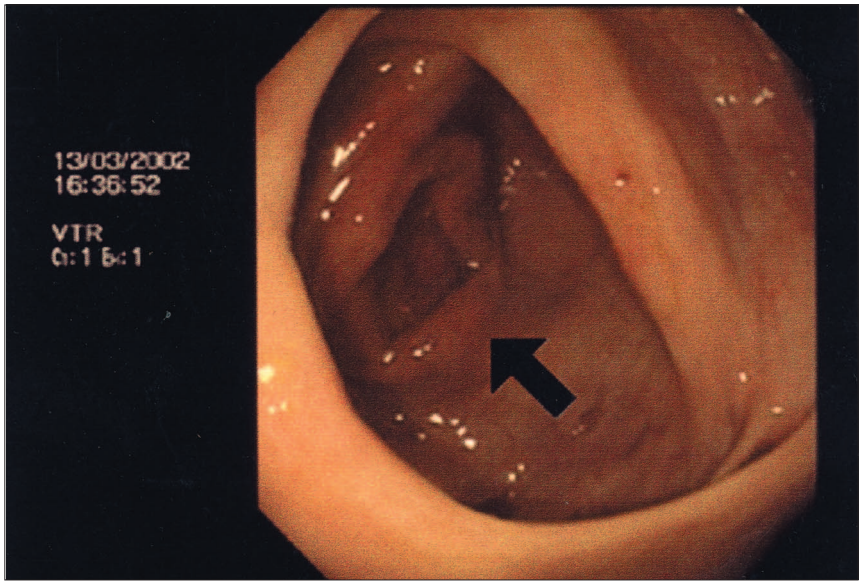

Figure 1. Endoscopic view of caecum showing inflamed appendiceal orifice (arrowed).

et al, 1999; Uehara et al, 2000). However, in these three reported cases the patients subsequently underwent appendicectomy (two immediately and one at 5 months) and therefore ultimately did not avoid surgery.

Antibiotics have been used safely and successfully to treat appendicitis. In a prospective randomized trial of antibiotics alone *vs* surgery in patients diagnosed clinically to have appendicitis, 19 of 20 patients (95%) managed with just antibiotics had resolution of their symptoms and were discharged within 48 hours of admission (Eriksson and Granstrom, 1995). Seven patients, however, were re-admitted within 1 year (mean 7 months) and underwent appendicectomy for histologically confirmed appendicitis. These patients were deemed to have recurrent appendicitis, no chronic findings being noted at histopathological examination (Eriksson and Granstrom, 1995).

Appendiceal diverticula are either congenital or acquired. Congenital appendiceal diverticula are true diverticula, having a wall with a complete layer of muscle, and are rare with a reported incidence of 0.0014% (Collins, 1955). Acquired diverticula of the appendix lack a complete muscle layer and are classified as false diverticula. Acquired diverticula of the appendix occur more frequently with an average reported incidence of 0.5% (Trollope and Lindneauer, 1974). The pathogenesis of acquired diverticula is debated, but their presence predisposes the organ to inflammation and consequently to appendicitis (Sharp et al, 1990).

CONCLUSIONS

Appendicitis occasionally occurs in a more chronic form, in this case secondary to an abscess in an appendiceal diverticulum. Patients may have minimal symptoms and signs and the diagnosis only made after a number of investigations have been performed. Colonoscopy allows direct visualization of the appendiceal orifice and can lead to diagnosis of appendicitis. However, bowel cleansing is required before colonoscopy, the procedure itself may aggravate abdominal pain, and complications, e.g. bleeding and perforation, may occur. It is unwise to perform colonoscopy on patients with severe abdominal pain. Colonoscopy may be performed safely and have a role in the diagnosis of appendicitis, when the pain is mild, the presentation atypical and imaging studies suggest a diagnosis other than appendicitis (Chang et al, 2002). Drainage of pus from the appendiceal lumen at the time of colonoscopy may improve symptoms but does not ultimately appear to avoid surgery. **HM**

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