Natural history and management of sigmoid diverticulitis

A systematic review indicates that the risk of recurrence is low in patients with uncomplicated sigmoid diverticulitis and most cases can be managed without antibiotics or surgery.

**Overview:** Diverticula are pouches in the mucosal lining of the large intestine that push through the muscle wall of the colon (NICE 2013). Formation of diverticula is associated with a low-fibre diet, which lowers stool bulk, slows stool transit times, and increases intraluminal pressure. Increased intraluminal pressure is thought to promote herniation of the mucosa through the relatively weak regions of the colonic wall where blood vessels penetrate. The most common site for diverticula is in the lower part of the large intestine: the sigmoid colon.

Around 75% of people with diverticula do not experience any symptoms, although the pouches can cause intermittent lower abdominal pain (World Gastroenterology Organisation 2007). A single diverticulum or several diverticula can become inflamed and infected in some people, a condition known as diverticulitis. These inflamed pouches cause marked lower abdominal pain that is usually accompanied by fever and general malaise. In complicated cases, the diverticula can develop into an abscess, perforation, or fistula or cause peritonitis or sepsis.

**Current advice:** The World Gastroenterology Organisation practice guidelines on diverticular disease recommend that people with diverticulitis who have mild abdominal pain or tenderness and no systemic symptoms can be managed with antibiotics and a low-residue diet (a diet that restricts foods that increase bowel activity). The NICE Clinical Knowledge Summary on diverticular disease adds that paracetamol can be prescribed for pain relief, but non-steroidal anti-inflammatory drugs and opioid analgesics should be avoided.

Patients with severe signs and symptoms should be admitted to hospital and treated with intravenous antibiotics and analgesia (preferably pethidine). Some patients with complications or who have had 2 or more episodes of diverticulitis severe enough to cause hospitalisation may need urgent or elective surgical resection of the colon.

**New evidence:** Morris et al. (2014) conducted a systematic review of studies on the natural history and treatment of sigmoid diverticulitis in adults. Two databases were searched for studies published after 2000 on the pathophysiology, natural history, and medical and surgical management of diverticulitis. Case series with fewer than 30 patients and articles containing primary data included in another selected study were excluded. A total of 80 studies were included in the review.

Among the 25 studies that considered the pathophysiology of sigmoid diverticulitis, a number indicated a role for altered gut motility, increased pressure, and a deranged colonic microenvironment (7 studies). Chronic inflammation similar to that seen in inflammatory bowel disease may also be involved in the aetiology of the disease (5 studies). Two of the 6 studies on the natural history of sigmoid diverticulitis suggested that recurrence is rare, occurring in 13% to 36% of patients with uncomplicated diverticulitis.
A systematic review of 4 poor quality studies suggested that consumption of fibre helped to resolve symptoms of sigmoid diverticulitis. Among the other 13 studies that considered medical management, several prospective studies and systematic reviews indicated that antibiotic treatment has no benefit in the management of acute uncomplicated diverticulitis (10 studies). One study showed that probiotics reduced symptoms of sigmoid diverticulitis but not the rate of recurrence. Anti-inflammatory drugs, such as mesalazine (not licensed for this indication), appeared to reduce symptoms and recurrence of the disease (3 studies).

Two of the 35 studies on surgical treatment suggested that emergency surgery is not necessary in patients with complicated diverticulitis, abscess, free intraperitoneal air, or all 3 factors. Between 5% and 25% of patients who had surgery experienced recurrent or unresolved abdominal symptoms (7 studies). Fewer than 5% of patients whose uncomplicated diverticulitis was managed without surgery had a complicated recurrence (6 studies).

The authors suggested that antibiotic and surgical treatment may not be the best approaches for patients with sigmoid diverticulitis given the low risk of recurrence and poor success rate of surgery. However, much of the evidence analysed was of low quality and did not use standardised terminology to describe aspects of the disease, limiting comparison across studies.

Commentary: “There are few areas in general surgery associated with so many ‘old wives tales’ and so much unsubstantiated opinion as the management of diverticular disease: from dietary fibre and nuts through to the indications for elective surgery. This review usefully underlines how little we know about both the pathophysiology of the disease and the optimum way to manage this common problem. It should make all surgeons think about the role of surgery in both emergency and elective settings.

"Whether to manage ‘acute uncomplicated diverticulitis’ with antibiotics or not will remain debatable despite the evidence presented. I suspect the inpatient group being managed by surgeons is different to those seen commonly in general practice, who are often given the diagnosis of acute uncomplicated diverticulitis with reference to their history and symptoms rather than any precise diagnostic tool such as CT.

"The evidence in favour of a more conservative or minimally invasive approach to acute complicated disease is growing, and this strategy will undoubtedly be in the best interests of the patient. The review makes a point of stating how relatively rare recurrence is in order to justify the conservative measures, but it is accepted that the evidence is generally of low quality and rates of 13% to 36% should not really be described as ‘rare’.” – Professor Timothy A Rockall, Consultant Surgeon, Royal Surrey County Hospital NHS Trust, and Director of the Minimal Access Therapy Training Unit (mattu), Guildford

Study sponsorship: No study funding declared.