

## **Pneumatic dilatation of a sigmoid diverticulum masquerading as a caecal bascule**

Dalpatadu K.U.A, MBBS, MS<sup>1</sup>, Wijesuriya S.R.E, MBBS, MS, MRCS<sup>2</sup>,  
Deen K.I, MBBS, MD, MS, FRCS<sup>2</sup>

1 Senior Surgical Registrar, University Surgical Unit, Colombo North Teaching Hospital, Ragama, Sri Lanka.

2 Consultant Surgeon, University Surgical Unit, Colombo North Teaching Hospital, Ragama, Sri Lanka.

3 Professor of Surgery, University Surgical Unit, Colombo North Teaching Hospital, Ragama, Sri Lanka.

**Key words:** Giant sigmoid diverticulum;  
Caecal volvulus; Caecal bascule.

### **Introduction**

Diverticulosis of the sigmoid colon is being encountered more frequently in South Asians [1]. Pneumatic dilatation causing a giant sigmoid diverticulum, defined as a colonic diverticulum greater than 4cm, is a rare complication of this disease which was first described by Bonvin and Bonte in 1945 [2]. Abdominal pain, which develops in a giant diverticulum, may be a symptom of impending perforation. Likewise a cecal volvulus, which is associated with abdominal pain, may result in gangrene and perforation due to closed loop intestinal obstruction. Cecal bascule is a form of cecal volvulus resulting from antero-medial folding of the cecum [3].

We present a case of giant sigmoid diverticulum, which presented as a caecal bascule, needing urgent laparotomy.

### **Case report**

An 82 year old woman presented with a two day history of severe right iliac fossa pain. Her bowel movements had been absent for two days, during which time, she had intermittent passage of flatus. She also felt distension and nausea. She has had mild right iliac fossa discomfort for 3 months previously. There was no family history of

bowel malignancy or inflammatory bowel disease. She had undergone appendectomy at the age of 30 years. She also had well controlled asthma and was on a steroid inhaler. There was no other comorbidity. She has not had previous colonoscopy to evaluate her colon. She was teetotal, mobile and independent at the time of admission to hospital.

On examination, her body mass index was 18.5 Kg per meter<sup>2</sup>, she did not have fever, icterus or lymphadenopathy. There was a tender intra-abdominal mass, of limited mobility, palpable in the right iliac fossa deep to the appendectomy scar, which measured 15cm in diameter. Gentle percussion over the mass revealed its tympanic nature. Exaggerated bowel sounds suggested an element of mechanical obstruction. There was no free fluid. Cardiovascular, respiratory and central nervous system examination was clinically normal. Her total white cell count was elevated at 14,000 cells /mm<sup>3</sup> and biochemical parameters were within normal limits. A plain abdominal radiograph showed a large air filled cystic lesion, 15cm in diameter, within the abdomen, more towards the right of the midline (Figure 1). A CT scan was not done due to time constraints.

A provisional diagnosis of a cecal volvulus was made and the patient was prepared for laparotomy. Abdominal entry was through the previous appendectomy incision which was extended medial to divide the right rectus muscle. On entry, a giant diverticulum of the mid-sigmoid colon was discovered in the right iliac fossa, overlying the caecum (Figure 2). The caecum, rest of the

Correspondence: K.U.A. Dalpatadu, Senior Surgical Registrar,  
University Surgical Unit, Colombo North Teaching Hospital,  
Ragama, Sri Lanka.

Email: udalpatadu@gmail.com

The Sri Lanka Journal of Surgery 2011; 29(1):31-33.



**Figure 1:** Plain abdominal radiograph with a large air filled cystic lesion of 15cm in diameter (white arrows), within the abdomen, more towards the right of the midline.



**Figure 2:** Appearance of the giant diverticulum of the mid-sigmoid colon at laparotomy.

colon and upper rectum were normal. The sigmoid colon was mobilized and adhesions between the diverticulum and ileum were lysed. A 10cm segment of sigmoid colon with the diverticulum was removed and continuity was restored with colo-colic anastomosis.

She was discharged from hospital five days after operation. Histological examination of the resected specimen of sigmoid colon revealed a giant diverticulum with para-diverticular inflammation, hemorrhage and necrosis within the wall of the diverticulum.

## Discussion

Reports of giant sigmoid diverticulæ are limited [4]. Diverticulæ commonly occur in the sigmoid colon due to a segmental rise in intra-luminal pressure. Three types of giant diverticulæ have been described: the first is a pseudo-diverticulum with remnants of mucosa and muscularis propria in its wall. The second type is inflammatory, where no mucosal remnants may be found, which results from focal mucosal perforation with an abscess cavity communicating with colonic lumen. The third type is based on the congenital duplication theory where all components of bowel

wall may also be found in the sac of the diverticulum [5]. Progressive inflation of the diverticular sac is due to a flap valve mechanism at the tiny opening at the entrance to the diverticulum and due to the action of gas forming organisms [5, 6]. The reported complication rates of a giant diverticulum are as high as 19% and includes perforation with peritonitis, abscess formation and volvulus [7]. Resection of the diseased segment is thus currently recommended [4,6]. Histology in our patient is suggestive of type 3: adhesions to the ileum were the result of diverticulitis. The inflated giant diverticulum palpable beneath the appendectomy scar in the right iliac fossa, mimicked a bascule type of cecal volvulus, clinically and radiologically [3,8]. Furthermore, since a bascule caecal volvulus is usually associated with previous surgery and a constricting band [3,8], the pre-operative diagnosis weighted heavily towards a cecal volvulus. Timely intervention helped alleviate this patient's symptoms and prevented further complication.

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### Key Learning Points

A giant sigmoid diverticulum is a rare manifestation of sigmoid diverticular disease, a common clinical condition.

A caecal bascule is a form of caecal volvulus which may cause intestinal obstruction and perforation.