A Giant Sigmoid Diverticulum:  
Report of a Case* 

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The purpose of this paper is to describe the case of a patient with a giant diverticulum of the colon, a rare clinical entity.

A 71-year-old Caucasian man was admitted to Methodist Hospital, Jacksonville, Florida, on February 10, 1969, because of pain in the left iliac fossa which was aggravated on straining. Past history revealed tonsillectomy and adenoidectomy, hemorrhoidectomy, herniorrhaphy and transurethral prostatectomy.

Physical Examination. Significant clinical findings were limited to the abdomen, which was soft and scaphoid but tender over the left iliac fossa. There was no rebound tenderness. Peristalsis was normal. Rectal examination disclosed no blood, mucus, mass, or tenderness.

Radiologic Findings. The barium-enema studies (Figs. 1, 2) revealed a giant diverticulum arising from the distal sigmoid. It was approximately 6 cm in diameter and apparently was connected to the lumen by a small neck.

Operative Findings. The abdomen was explored through a left paramedian incision. This revealed a rather redundant sigmoid colon. About 10 cm from the peritoneal reflection there was a diverticular sac about 6 cm in diameter, filled with inspissated fecal material or barium. Resection of the sigmoid with an end-to-end rectal-colonic anastomosis and appendectomy was done. The postoperative course was uneventful.

Pathologic Findings. The specimen (Fig. 3) consisted of a portion of colon 15 cm long. Present at one margin of the resection was a diverticulum 6 x 4 cm in size, with a large ostium 3 cm in diameter. There was another small diverticulum nearby. There was a pedunculated soft polyp at the outer margin of resection. Microscopic examination disclosed all the layers of the bowel in the diverticulum and a focus of malignant change at the tip of the polyp without invasion of the stalk.

Discussion

Only a small number of giant sigmoid diverticula have been described. In 1957, the Massachusetts General Hospital reported a case of a giant diverticulum 25 cm in diameter. The patient was first seen because of abdominal pain. A mass was felt, and plain roentgenograms showed an air-filled cyst. Silberman and Thorner described a sigmoid diverticulum 8 cm in diameter that underwent torsion. Bergeron and Hanley reported a similar case in which the diverticulum was well visualized on barium-enema studies. In 1964, Marano and associates described a patient who had abdominal pain, a hypogastric mass, and roentgenographic evidence of an air-filled cyst. In another case of giant diverticulum of the colon, described by Ferguson and Boinis, the diverticulum had a double opening into the lumen of the colon. Hughes and Greene reported a case of a solitary air cyst of the peritoneal cavity, which they thought was derived from a sigmoid diverticulum.

Various theories have been put forward to explain the etiology of giant diverticula. The "ball-valve" theory of Boijsen is more plausible than the others. He suggested that a ball-valve type of mechanism...
develops at the base of the diverticulum, enabling intestinal gas to enter under high pressure and remain trapped. Abdominal