



The “hot air balloon” sign

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A hot air balloon (Fig. 1) has been used as a metaphor for the imaging appearance of a giant sigmoid diverticulum, a rare complication of colonic diverticular disease. Defined as diverticulum greater than 4 cm in diameter [1], the etiology of a “giant” diverticulum remains unclear, but a commonly proposed mechanism is a ball-valve effect, where gas enters but cannot leave the diverticulum [1, 2]. Plain film radiographs often demonstrate a smooth, gas filled structure recalling the metaphorical sign (Fig. 2) [1]. CT also recalls the sign and provides a more definitive diagnosis, demonstrating the gas filled diverticulum (the “envelope” of the hot air balloon) and the connection to the colonic lumen on the anti-mesenteric side (representing the balloon’s “basket”) (Fig. 3) [1].

Three histological subtypes of these diverticula have been described: Type 1 represents a pulsion type pseudodiverticulum; Type 2 is the most common and represents an inflammatory diverticulum often caused by serosal perforation and subsequent walled-off abscess formation; and Type 3 represents a congenital or true diverticulum [1, 2]. Clinical presentation is variable. The diverticulum may be discovered incidentally, or it may cause abdominal pain, constipation, diarrhea, melena, or even a palpable mass, where it may be referred to as a phantom tumor [1, 2]. The most common complications of giant sigmoid diverticula are perforation and abscess formation. Less commonly, colonic obstruction, peritonitis, and volvulus have been reported [1, 2]. Treatment of uncomplicated cases is surgical resection of the diverticulum and adjacent colon with subsequent primary anastomosis. If complications are present, then temporary end colostomy (Hartmann’s procedure) is often performed [1, 2].



Fig. 1 A hot air balloon in flight. <https://unsplash.com/search/photos/hot-air-balloons> on 1/26/2019

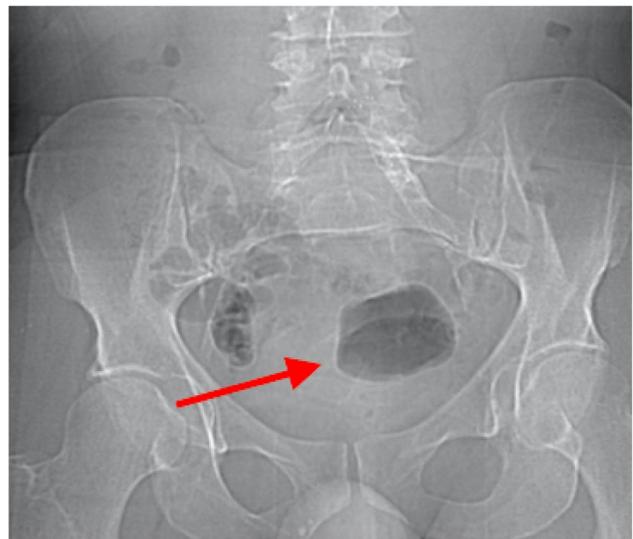


Fig. 2 Scout view prior to abdominopelvic CT demonstrates a smooth, rounded gas filled structure (solid red arrow) within the left pelvis measuring approximately 5.5 cm in diameter, a giant sigmoid diverticulum

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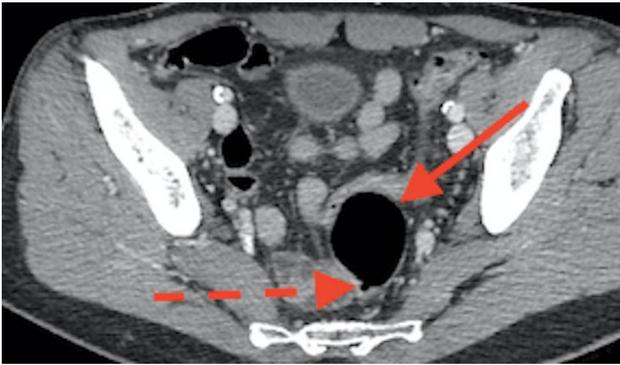


Fig. 3 Axial CT scan of the pelvis in the same patient seen in Fig. 2 demonstrates the giant gas filled sigmoid diverticulum (solid red arrow) and the connection to the colonic lumen (dotted red arrow)

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest.

Research involving human and animal rights This article does not contain any studies with human participants or animals performed by any of the authors.

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