

## Case Report

# Gastric diverticulum in a Nigerian: A case report

N. C. Nwankwo, MBBS, FWACS and C. O. Maduforo, MBBS, FMCR

Department of Radiology, Faculty of Clinical Sciences, College of Health Sciences, University of Port Harcourt

Accepted 13 July, 2011

**Gastric diverticulae are not common. They are usually found incidentally while evaluating the upper gastro-intestinal tract (GIT) with oral contrast. Double contrast barium meal study is very useful in the diagnosis and computerized tomography (CT) and endoscopy are at times used for further assessment of this condition. To report the first case of gastric diverticulum seen by the authors after over twenty years of practice, emphasize the role of double contrast barium meal in GIT studies and high index of suspicion. A 45-year-old Nigerian male was referred to the Radiologist for barium meal studies due to history of epigastric pain. A small diverticulum was seen in the proximal part of the lesser curvature of the stomach. No gastric or duodenal ulcer was seen.**

**Keywords:** Gastric diverticulum, double contrast barium meal, Nigerian.

## INTRODUCTION

Gastric diverticula are true diverticula that are contained within the wall of the stomach without deformity of the serosa

Gastric diverticula were first described by Samuel in 1955 (Cockrell et al., 1984). They are not common, and are usually incidental findings during evaluation of the upper gastrointestinal tract (Cockrell et al., 1984). Gastric diverticula occur in middle aged people with equal distribution among male and female (Donkervoort., et al 2006). There is no racial predilection (Cockrell et al., 1984). They could be congenital or acquired and result from area of weakness due to splitting of the longitudinal muscle fibre. An absence of peritoneal membrane and perforating arterioles may be predisposing factors to the formation of a diverticulum (Donkervoort et al., 2006). The clinical significance of gastric diverticula lies in distinguishing them from other pathological entities thereby sparing the patient needless investigation and treatment (Cockrell et al., 1984).

## CASE REPORT

We report a case of gastric diverticulum diagnosed radiologically in a 45 year old Nigerian male who was

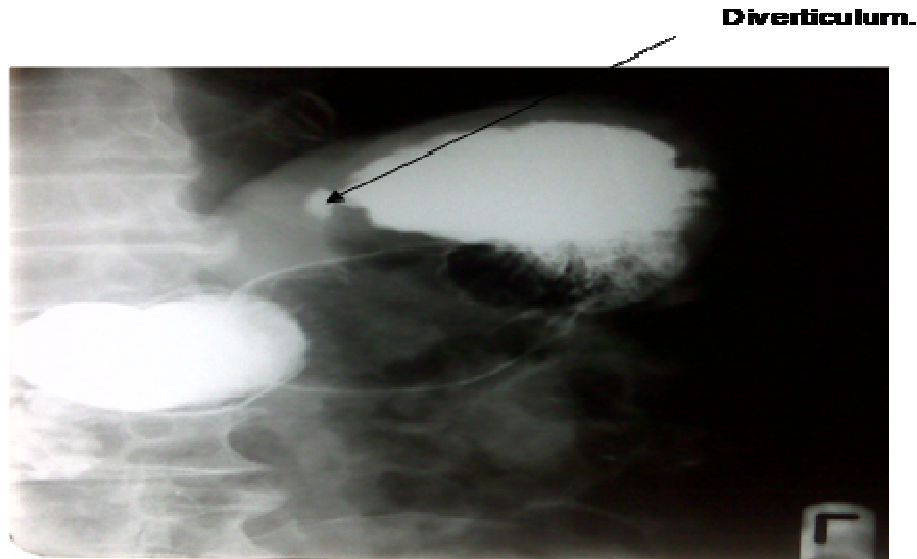
referred to the Radiologist for barium meal on account of two months history of recurrent epigastric distress. There was no history of associated haematemesis or melena. The patient was not a smoker but drinks alcohol occasionally. Physical examination and laboratory investigations were not remarkable. The upper gastrointestinal study (barium meal) demonstrated a collection of barium in the lesser curvature on the upper aspect of the body measuring about 10x15mm in size (Figures 1 and 2). The gastric mucosae leading to this area of barium collection is normal; the gastric rugae were also normal as well as the duodenal cap. No other lesions were demonstrated in the stomach or duodenum during the examination. There was no evidence of gastric or intestinal malrotation. Our patient declined advice for endoscopy.

## DISCUSSION

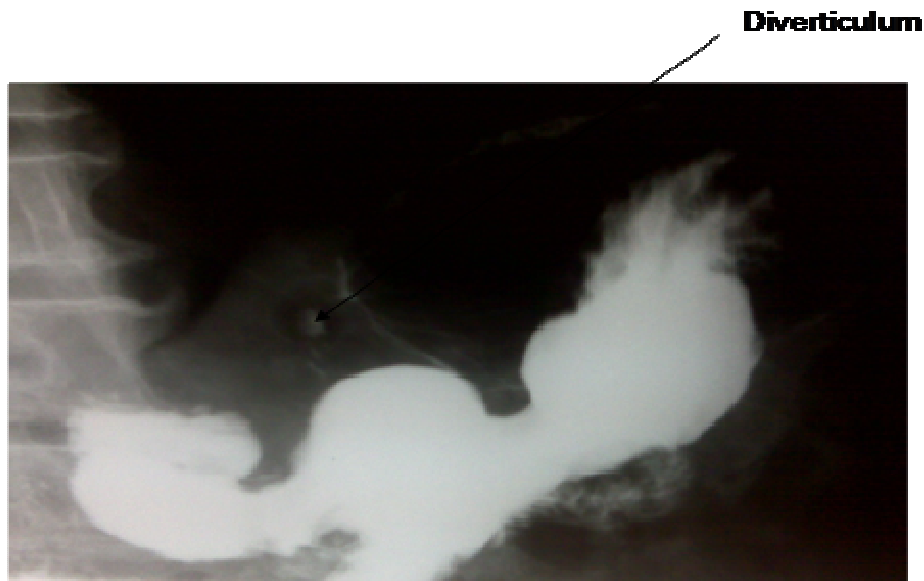
Gastric diverticula are rare. The rates of detection by endoscopy ranges from 0.01 to 0.11%. Palmer (1951) reported an incidence of true gastric diverticula to be 0.043% on routine gastrointestinal series in 1957. Treichel et al (1976), reported five cases of intramural gastric diverticula from a series of 10,000 examination of the upper gastro intestinal tract giving an incidence of 0.05%. Treichel et al (1976) therefore suggested that many of gastric diverticula are misdiagnosed or are

---

\*Corresponding author E-mail: [emmynwankwo@yahoo.com](mailto:emmynwankwo@yahoo.com)



**Figure 1:** Single contrast barium meal showing an out pouching (Diverticulum) in the lesser curvature of the stomach



**Figure 2:** Double contrast barium meal showing the position of the diverticulum with normal mucosae

simply undetected. Olokoba et al (2008) reported an index case of intramural gastric diverticulum in Nigeria, located at the antral portion and co-existing with duodenal ulcer in a 33-year-old female. In our case, the diverticulum was located posteriorly below the esophagogastric junction in the proximal part of the lesser curvature. This is the typical site of gastric diverticulum- no explanation has been propounded on their aetiology and occurrence in this site. However,

Cockreel et al (1984) reported three cases of intramural gastric diverticulum in patients with the ages of 21, 65 and 72 which were all located in the greater curvature of the antrum or prepyloric region. There was associated active duodenal ulcer in one of their patients. When gastric diverticulum occur in the other sites, especially on the greater curvature of the antrum ; there is usually an association with pancreatic nests. Rivers et al (1935) published a series of fourteen cases of intramural gastric

diverticulum of which six of them were located in the cardiac portion of the stomach and of these two were on or near the greater curvature. Gastric diverticular are often single, varying in size from 1 to 3cm as demonstrated in our patient where the size is 1.0 x 1.5cm. However, multiple and larger diverticular have been described; usually adjacent to the gastroesophageal junction along the lesser curvature or posterior gastric wall (Simpkin, 1987). Treichel et al (1976) and Rabushka et al (1968) noted that the diagnosis of gastric diverticular is suggested at barium studies when a barium collection in the typical location is found with variation in size and shape with different degrees of distension, position of patient, gastric peristalsis and extrinsic compression. They also observed that the changes are classical, varying from round to irregular with flattening of dome of the diverticulum to a collar stud shape with contraction. Barium sulphate is liable to be retained in the pouch long after the remainder of stomach has emptied (Simpkins, 1987). Cockrell et al (1984) suggested radiographic criteria for the diagnosis of gastric diverticular to include the following: intramural rounded out pouching of barium with smooth margins, location along the greater curvature of the antrum, typical change in shape during examination, maximum size approximately 10mm and smooth ostium without evidence of mass or oedema in the surrounding gastric mucosa. These were demonstrated in our patient except the location which was at the lesser curvature.

Clinically, patients with gastric diverticular are usually asymptomatic, although they may present with dyspepsia, vomiting and abdominal pains (Gibbons and Harvey, 1984). Our patient complained of epigastric dyspepsia. Complications of gastric diverticular which include ulceration, perforation, haemorrhage, torsion and malignant transformation are rare. Differential diagnosis of gastric diverticulum is benign ulcer and in 85% of cases of gastric diverticulum, vague abdominal pain or ulcer-like symptoms are the presenting complaints and 26% will have active ulcers or deformed duodenal bulb<sup>1</sup>. There was no associated duodenal or gastric ulceration in our patient (endoscopic examination wasn't carried out to evaluate the presence of ulceration) Patient was lost to follow up. Another differential diagnosis will include a left adrenal mass, aberrant pancreas or ulcerated myomata, adenomas or neurogenic tumours (Flachs et al., 1965). Here, computed tomography (or endoscopic ultrasound) will be invaluable in making a firm diagnosis.

Unfortunately, our patient was lost to follow up.

There is no specific treatment for asymptomatic gastric diverticulum. When diverticulum becomes symptomatic, complicated by bleeding, perforation or malignancy then surgery is indicated. Perioperative endoscopy is useful in locating diverticulum in difficult cases (Cockrell et al., 1984).

## CONCLUSION

A case of intramural gastric diverticulum is reported. This rare clinical entity needs to be recognized and differentiated from peptic ulceration. The role of radiological imaging is highlighted.

## REFERENCES

- Cockrell CH, Cho S, Messmer JM (1984). Intramural gastric diverticular: a report of three cases. *Brit. J. Radiol.* 57: 285 – 288.
- Donkervoort SC, Baak LC, Blaauwgeers JL, Gerhards MF (2006). Laparoscopic resection of a Symptomatic gastric diverticulum: a minimally invasive solution. *JSLs.* 10: 525 – 572.
- Flachs K, Stelman HH, Matsumoto PJH (1965). Partial gastric diverticula. *Am. J. Roentgenol.* 94: 339 – 342.
- Gibbons CP, Harvey L (1984). An ulcerated gastric diverticulum – a rare cause of haematemesis and melena. *Postgrad. Med. J.* 60:693 – 695.
- Olokaba OB, Ogunwodede JA, Obaterin OA, Yusuf M, Bamidele ON, Agbeile OE (2008). Gastric diverticular. A case report. *Niger. Med. J.* 49 (4) 154 – 105.
- Palmer EP. Collective review: gastric diverticular. *Int. Abstr surg.* 1951; 92: 417 – 428.
- Rabushka SE, Melamed M, Melamed JL (1968). Unusual gastric diverticular: Report of two cases. *Radiol.* 9: 1006 – 1008.
- Rivers, Stevens, Kirklin (1953). *Surgery. Gynaecol. and obstet.* 9: 106.
- Simpkins KC (1987). In Sutton D ed. *The stomach and duodenum. In: Textbook of radiology and medical imaging*, Churchill Livingstone, London, pp 823.
- Treichel J, Gerstenberg J, Palme G, Wemm T (1976). Diagnosis of partial diverticula. *Radiol.* 119: 13 – 18.