Partial gastric diverticula: radiological and endoscopic features in six patients

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SUMMARY Partial gastric diverticula are rare and clinically insignificant, but because experience is limited, they are liable to cause diagnostic confusion. This report describes the radiological and endoscopic appearances of partial gastric diverticula.

Methods

PATIENTS

Details of the patients are given in the Table. In every instance barium meal was carried out as part of the investigation of a history of dyspepsia. Because of the radiological findings, four of the patients had subsequent gastroscopy.

RADIOLOGICAL FINDINGS

The hallmark of this lesion is its site, being found invariably on the greater curve of the stomach within a few centimetres of the pylorus. Radiologically, the lesion may show a central 'pit' of barium no more than 1-2 mm deep (Fig. 1). As such, it would appear to be contained entirely within the

gastric wall, a point emphasised by Treichel *et al.*¹ The collection of barium is either linear or oval in appearance and has a well defined edge. Another characteristic is that the central depression is surrounded by a submucosal mound usually no more than 2 cm in diameter (Fig. 2). This particular appearance can easily be simulated by a submucosal tumour such as a leiomyoma, but it would be most unusual for such small leiomyomas to ulcerate at this early stage. The alternative diagnosis, that of a benign peptic ulcer surrounded by oedema has been excluded by endoscopy and/or follow up in our cases.

In one case the lesion had a somewhat different appearance in that although the single contrast films show a lesion in the classic site, it appears to consist of two separate pits with a larger one lying distally (Fig. 3). After air insufflation and Buscopan, however, these two merged into one single lesion which then exhibited the characteristics described

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Table Details of patients and investigations.

No	Initial	Age	Sex	Presenting complaints	Barium meal diagnosis	Endoscopic diagnosis	Final clinical diagnosis
1	RB	42	M	Epigastric pain, Heartburn	Hiatus hernia	?Pancreatic heterotopia	Oesophageal reflux
2	HA	45	M	Epigastric pain	Pit in antrum ?nature ?ectopic pancreas	?Ulcerating leiomyoma	Functional dyspepsia
3	MS	38	F	Epigastric pain, Vomiting	Gastric ulcer	?Diverticulum	Functional dyspepsia
4	EL	47	M	Epigastric pain, Nausea	Gastric polyp	Diverticulum	Functional dyspepsia
5	RP	32	M	Epigastric pain	Diverticulum	ND	Functional dyspepsia
6	LC	55	F	Epigastric pain	Diverticulum*	ND	Functional dyspepsia

*This patient had a barium meal 24 years previously which demonstrated the same lesion and was then diagnosed as a prepyloric gastric ulcer.

Fig. 1 Supine oblique view of the barium meal on case 5, showing the typical 'pit' of barium on the greater curve of the stomach in the immediate prepyloric region. Note the surrounding soft tissue mound.

above. The value of hypotonia and air insufflation is also stressed by Treichel *et al.*¹

ENDOSCOPIC FINDINGS

Gastroscopy was carried out in four patients. In each instance the presence of an abnormality was confirmed on the greater curve, proximal to the pylorus. The lesions were approximately 1 cm in diameter. In three instances the lesion appeared raised with a central dimple whilst in the remaining one it was depressed (Fig. 4a and b). In two patients the correct diagnosis was made while in the others ulcerating leiomyoma and pancreatic heterotopia were proposed respectively.

CLINICAL OUTCOME

One patient was treated for two months with ranitidine and another was treated with antacids for a provisional diagnosis of gastric ulcer whilst awaiting gastroscopy. Case 6 was of interest in that

she presented with a probable haematemesis in 1960 and a diagnosis of gastric ulcer made, but this episode settled spontaneously. The barium meal appearances 24 years later were exactly the same, suggesting that the original diagnosis was probably incorrect and that the lesion was an intramural diverticulum.

Discussion

The term partial gastric diverticulum was coined by Samuel² and defined as a projection of the gastric mucosa into the muscle layer which does not extend to the serosa. This is very rare and there were only 14 cases in the world literature after the report of Flachs *et al* in 1965.³ Since then there have been other reports by Rabushka *et al.*,⁴ Treichel *et al.*,¹ and Cockrell *et al.*,⁵ and all have confirmed the typical radiology described here. Treichel *et al*¹ described four patients discovered during the course

Fig. 2 Barium filled view of the same case as Fig. 1 showing the submucosal mound to better advantage.

Fig. 3 Barium filled view of the stomach from case 1 showing two adjacent 'pits' of barium on the greater curve of the stomach. These merged into one with hypotonia and air insufflation.

Fig. 4 (a) Air contrast view of the prepyloric area of case 3 showing the typical niche of barium (arrow heads) surrounded by a mucosal 'collar'. (b) Four endoscopic views of case 3 showing the orifice of the diverticulum just proximal to the pylorus.

of 10 000 barium meal examinations – a figure which may give a fair indication of the frequency of the abnormality in the dyspeptic patient.

The typical radiological and endoscopic appearances described here should lead to greater recognition of this lesion in the future. This is to be encouraged in order to prevent the mistaken diagnosis of gastric ulcer which has led on one occasion at least to partial gastrectomy.³

We thank our colleagues for allowing us to report patients under their care.

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