CASE REPORT

Epiphrenic gastric diverticulum containing tablets simulating a left adrenal mass with calcification

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Introduction

Gastric diverticula are rare, with only 412 reported cases in a large review in 1951 and an approximate incidence of one in every 2400 contrast studies of the upper gastrointestinal tract.1 Diagnosis of gastric diverticula has traditionally been made by contrast study of the upper gastrointestinal tract, with the first diagnosis being made by Brown in 1916.2 More recently, epiphrenic gastric diverticula have been discovered as incidental findings on axial computed tomography (CT) images of the abdomen,3–7 when they may mimic a mass of the left adrenal gland. We report a case where multi-slice CT with multiplanar reformatting aided the diagnosis of an epiphrenic gastric diverticulum containing tablets, in a patient with an additional incidental left adrenal adenoma.

Case report

An 83-year-old woman was admitted to hospital with left lower lobe pneumonia and a urinary tract infection. The patient was referred to the Radiology Department for investigation of unremitting pyrexia associated with left loin pain.

Abdominal ultrasound demonstrated a small amount of left perinephric fluid with mild bilateral renal cortical thinning. The patient subsequently underwent contrast-enhanced multislice CT of the abdomen (70 ml Niopam 300 intravenous contrast with 500 ml water oral contrast; Aquilion 16 CT machine, Toshiba Medical Systems Limited, The Netherlands, Europe BV). Multiplanar reformatting was performed on a Vitrea Workstation (Toshiba ReportDirect V500, Toshiba Medical Systems Limited) using 1 mm-thick reconstructed axial images.

Axial images demonstrated an approximately 4×3 cm rounded soft-tissue mass lying posterior to the stomach, medial to the spleen and superior to the left kidney, containing areas of high attenuation (Fig. 1). No gas was identified within the lesion, and the differential diagnosis for the appearances included a left adrenal mass containing calcification. Multiplanar reformatted axial oblique images demonstrated four identical oval structures in the lesion, with the appearances of tablets (Fig. 2). Reformatted sagittal images demonstrated fluid attenuation, as well as tablets within the lesion, and a clear communication with the gastric lumen (Fig. 3). Appearances were those of an epiphrenic gastric diverticulum containing tablets. An incidental 1.5 cm left adrenal adenoma was also identified, and its relationship with the epiphrenic gastric diverticulum demonstrated on both reformatted sagittal (Fig. 3) and coronal (Fig. 4) images.

Discussion

Gastric diverticula may be classified as congenital or acquired. Congenital, or true, gastric diverticula contain gastric mucosa and have three gastric muscle layers. In the acquired, or pulsion, type one or more of the three muscle layers is thinned or broken as a result of disease or unusual strain. Congenital diverticula are usually single lesions that measure 1–5 cm in diameter and arise from the posterior wall of the stomach, within 2–3 cm of the gastro-oesophageal junction.1,8 Acquired gastric diverticula lie near the gastric antrum. In this case, the gastric diverticulum demonstrated features of the congenital type.

Due to their posterior and left suprarenal location, epiphrenic gastric diverticula may simulate masses of the left adrenal gland, and several cases of this have recently been reported.3–7 The diagnosis of a gastric diverticulum should particularly be considered if gas is present within such a lesion. Other lesions that may lie in this location include prominent splenic lobulation, dilated portosystemic veins and left renal or pancreatic masses.9,10 This case demonstrates how definitive diagnosis is aided by multislice CT with multiplanar reformatting, particularly when two or more separate lesions are present.

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Epiphrenic gastric diverticula are often asymptomatic. In the case of congenital diverticula, this may be related to their posterior location, broad base and full-thickness muscle wall. However, patients may present with pain, emesis and weight loss, or with symptoms due to complications of gastric diverticula such as obstruction, bleeding and perforation.\textsuperscript{11–13} Review of the medical notes in this case revealed a history of recent recurrent episodes of sharp epigastric pain.

Although multislice CT enables definitive diagnosis of an epiphrenic gastric diverticulum, endoscopy may be required for biopsy of mucosal abnormalities related to gastric diverticula, such as ulceration,\textsuperscript{12} heterotopic pancreatic mucosa\textsuperscript{14} and carcinoma.\textsuperscript{15} Endoscopy will also identify the sequelae of complications secondary to gastric diverticula, such as gastro-oesophageal reflux.\textsuperscript{16}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{fig1.png}
\caption{Axial contrast-enhanced CT image of the abdomen demonstrating a soft-tissue lesion lying superior to the left kidney and posterior to the stomach, containing areas of high attenuation.}
\end{figure}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{fig2.png}
\caption{Multiplanar reformatted axial oblique image demonstrating four identical high-attenuation oval structures within the lesion, consistent with tablets.}
\end{figure}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{fig3.png}
\caption{Multiplanar reformatted sagittal image demonstrating an epiphrenic gastric diverticulum arising from the posterior wall of the stomach, in close proximity to the gastro-oesophageal junction. The diverticulum is seen to contain fluid in addition to tablets. Inferior to the gastric diverticulum is an incidental left adrenal adenoma.}
\end{figure}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{fig4.png}
\caption{Multiplanar reformatted coronal image further demonstrating the location of, and relationship between, the epiphrenic gastric diverticulum and left adrenal adenoma.}
\end{figure}
In conclusion, the diagnosis of an epiphrenic gastric diverticulum containing tablets in this case was clarified by multislice CT imaging with multiplanar reformatting, after initially simulating a left adrenal gland mass with calcification. Reformatted images also enabled clarification of the relationship between the epiphrenic gastric diverticulum and incidental left adrenal adenoma.

References