A Jejunoileal Duplication Diagnosed by Tc-99m Pertechnetate Abdominal Scintigraphy

Sir,

Alimentary tract duplications are uncommon congenital anomalies. Although most are asymptomatic by the age of 2 years, some remain asymptomatic until adulthood. In one third of all cases, heterotopic gastric mucosa lines the wall of duplication, and may cause peptic ulceration, gastrointestinal bleeding, fistulization or perforation.\(^1\) We report in this paper, a case of jejunoileal duplication featuring gastric mucosal lining, which presented with gastrointestinal bleeding. The anomaly was diagnosed preoperatively by Tc-99m pertechnetate abdominal imaging.

A 9-month-old female infant with a history of haemorrhagic diarrhoea for two weeks was referred to the hospital. Physical examination was normal. The haemoglobin was 10.4 g/dl, total leucocyte count of 8.5x10^9/L. Analysis of stool sample for occult blood was positive. A tentative diagnosis of Meckel’s diverticulum was made, and Tc-99m pertechnetate scintigraphy was performed. The patient was kept fasting for 4 hours prior to the scanning. After premedication with intravenous ranitidine 1mg/kg, an intravenous injection of 5 mCi (185 MBq) Tc-99m pertechnetate was administered and a dynamic 60-second blood flow study was carried out immediately after the injection, followed by serial 1-minute images for 30 minutes. Markedly increased radioactivity uptake in the left-middle zone of abdomen was seen [Figure 1]. The lesion showed an increased tracer uptake during acquisition similar to that of gastric uptake [Figure 2]. Ultrasonic showed an intestinal mass with an echogenic inner rim surrounded by a relatively hypoechoic layer in the left mid quadrant. These constellations of findings led us to consider an intestinal duplication containing ectopic gastric mucosa.

At laparotomy, a 5.5 cm jejunoileal duplication lined. This should be histopathological finding. This cannot be made out at laparotomy, with massive amounts of gastric mucosa was resected [Figure 3], and end-to-end reanastomosis was performed. The patient made a full recovery and is well at six months of follow up.

In cases of suspected enteric duplication lined by gastric mucosa, scintigraphy is done using Tc-99m-pertechnetate because this material is readily taken up by gastric mucosa. Parietal and mucus-secreting cells are responsible for the uptake of Tc-99m pertechnetate. The radiotracer accumulates in and is excreted from the mucus-secreting cells that are the primary cells...
in the uptake of pertechnetate in the gastric mucosa.\(^2\)

Other abdominal conditions also show Tc-99m pertechnetate uptake on scintigraphy. These include intestinal obstruction or intussusception, inflammation, vascular malformations, ulcers, some tumours, and various forms of urinary tract retention; however, tracer uptake parallel to the pattern seen in the stomach is specific to ectopic gastric mucosa.\(^3\) In addition, the other anomalies that contain ectopic gastric mucosa such as Meckel’s diverticulum and otherwise normal bowel should be considered in the differential diagnosis. In the above case, the amount of radioactivity uptake was too large to be related to a Meckel’s diverticulum, and ultrasonography was useful diagnostic tool with a typical appearance in this case.\(^4\)

In this report, the importance of Tc-99m pertechnetate scan for diagnosing jejunoileal duplication via detecting heterotopic gastric mucosa, as a sensitive, simple, non-invasive and cost effective imaging modality (this examination costs approximately £ 13) has been highlighted. This diagnostic tool can provide definitive evidence of an enteric duplication when the lesion is lined with ectopic gastric mucosa, before other diagnostic studies and laparotomy.

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**References**


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