CASE REPORTS

Intraluminal Duodenal Diverticulum

REPORT OF A CASE

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THE LOCALIZATION of gastrointestinal bleeding can be very perplexing at times. We recently encountered this problem in a young female patient at the Lancaster General Hospital, and in pursuing it identified a lesion which has been previously reported in the literature but which is indeed uncommon.

CASE REPORT

The patient, a thirty-one year old white woman, was in excellent health until five days prior to hospitalization when she began to pass melanotic stools. These increased in frequency and she rapidly became weaker. At admission, hemoglobin was 5 gm. per cent. She was completely asymptomatic except for melena. Physical examination was negative for abnormalities except for pallor and tachycardia. Our working diagnosis included the usual entities one would consider in such a problem.

She was given 3 units of whole blood within the first day of hospitalization; hemoglobin rose to 10 gm. and she became stable. An upper gastrointestinal roentgenogram showed a questionable filling defect in the duodenum. The next day a repeated roentgenogram confirmed the presence of a barium-filled structure within the duodenal lumen. (Fig. 1, 2 and 3.)

As we were unaware of this pathologic entity, we were surprised to find at exploration what

FIG. 1. Roentgenogram showing barium-filled diverticulum within the duodenal lumen.

FIG. 2. Close-up view of barium-filled intraluminal duodenal diverticulum.

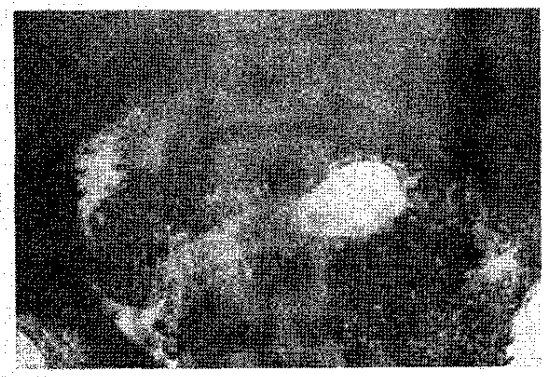

FIG. 3. Intussuscepting intraluminal duodenal diverticulum caused by peristaltic waves.

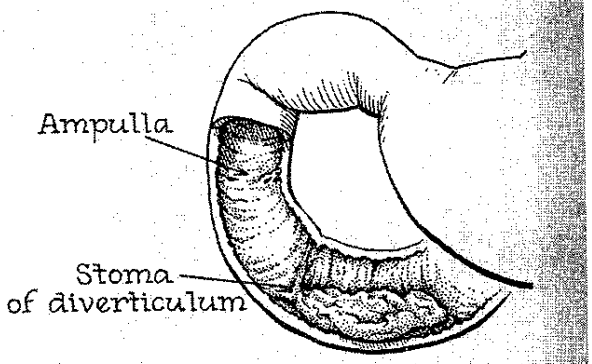

FIG. 4. Diagram showing gross position of intraluminal duodenal diverticulum.

appeared to be an intraluminal duodenal diverticulum situated just distal to the ampulla of Vater and arising from the mesenteric side of the duodenal wall. (Fig. 4.) This was 5 cm. long and 3 cm. across its broadest diameter. A stoma was present at its base and through this the entire sac could be invaginated. Grossly mucosa appeared to be present on either side. This was later confirmed by microscopic sections showing duodenal mucosa on either side. (Fig. 5.) The outer mucosal wall was ulcerated and was thought to be the site of bleeding. The diverticulum was readily excised and the mucosa repaired. Recovery was uneventful and she has remained well since.

COMMENTS

In reviewing the literature, we find only six previously reported cases of intraluminal duodenal diverticuli [1–6]. In these cases, attention was called to the presence of these lesions because of the clinical picture of either high intestinal obstruction or upper gastrointestinal bleeding. In all of the reported cases the treatment was local exicison. The patients all did well postoperatively.

The cause is not definitely known, but it is believed by all the reporting authors that this represents a developmental anomaly. In the four week old embryo, the intestine is a simple tube beginning at the stomach and ending at the cloaca. Proliferation of the epithelial lining occurs and by the sixth week it is a solid structure. Vacuolization then occurs, and by the seventh to eighth week the lumen is again present [1].

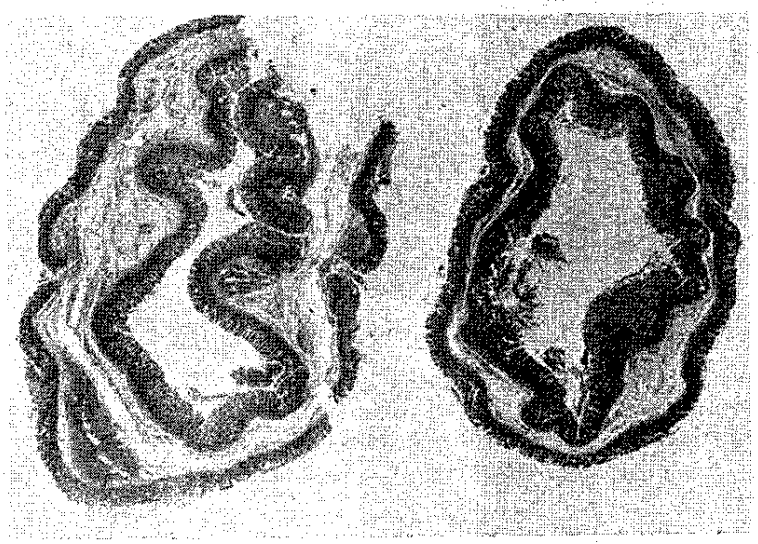

FIG. 5. Microscopic cross section of intraluminal duodenal diverticulum showing duodenal mucosa on either side.

We can hypothesize that this vacuolization might cause a mucosal sac to form which progressively enlarges and becomes the diverticulum. Another possibility is that after vacuolization is complete, a web or diaphragm with an opening in it persists. This opening later becomes continuous with the main lumen, and the solid portion is pushed along with peristalsis and is stretched into a diverticulum.

SUMMARY

To our best knowledge, this is the seventh case report of an intraluminal duodenal diverticulum. The embryologic development of the duodenum is briefly reviewed and two hypotheses are presented as to the possible formation of these diverticuli.

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