Dyspepsia Meckel

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ABSTRACT: A 40-year-old male was seen for evaluation of minor gastrointestinal bleeding. The patient had received an H2 blocker as an outpatient for suspicion of duodenal ulcer disease. At endoscopy no lesion was seen and H2 blockers were discontinued. The patient developed acute abdomen and at surgery a perforated Meckel's diverticulum was found. Can J Gastroenterol 1990;4(4):157-159

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DISCUSSION

An unusual diverticulum of the small intestine was first described by Hildanus in 1598 (1) and was considered to be due to increased intestinal pressure. This most common congenital anomaly of the gastrointestinal tract is due to failure of obliteration of the omphalomesenteric duct connecting yolk sac to intestinal tract at five to seven weeks of gestation. Johann Friedrich Meckel established the condition on a sound embryological and anatomic basis in writings between 1808 and 1820 (2). He was incorrect, however, in predicting a 25% complication rate; the actual figures are 0.03 to 0.96% per year with a life long risk of approximately 4% (3).

The clinical diagnosis of symptomatic Meckel's diverticulum can be difficult as illustrated by this case. Some physicians feel that this is a disease of childhood and are not aware of the difference in adult presentation. Symptomatic Meckel's diverticulum in adults has a male to female ratio of 1.8 to 1.0 and the risk is greatest in the 16 to 25 year age group (mean 39, range 16 to 87) (4). In children, rectal bleeding and obstruction are the most common complications, while 30 to 50% of adults experience inflammation, 33 to
36% obstruction, 19% perforation and 10 to 19% bleeding.

Any young adult with significant gastrointestinal bleeding and a negative endoscopic evaluation should be investigated for a possible Meckel's diverticulum. Patients with inflammation are likely to be diagnosed as appendicitis and managed surgically at an early stage.

A computer search of the world literature to 1989 revealed only five case reports of H2 blocker therapy in Meckel's diverticulum and several noteworthy features were found (Table 1). Bleeding from a Meckel's diverticulum is rare above age 30 years (4) and the present patient was significantly older than the others treated. One-half of the patients had postprandial pain, and five of six had obvious rectal bleeding. Upper intestinal series performed in four cases were falsely negative but two small bowel enemas were positive for Meckel's diverticulum. Four Meckel's scans were reported in three patients with two positive and two negative results.

A question raised by the present case concerns the diagnostic and therapeutic value of H2 blockers in symptomatic Meckel's diverticulum. In the five cases where detail was provided, all mentioned rapid improvement in abdominal pain with institution of H2 blockade. In all three cases in which the H2 blocker was discontinued the pain returned. The data suggest that abdominal pain which responds to H2 blockers in the absence of evidence of upper intestinal disease should prompt an investigation for Meckel's diverticulum.

A therapeutic role for H2 blockers has been advocated by some (5-7), while others noted rebleeding and perforation during treatment (8,9). The fact that H2 blockers were ineffective for reducing bleeding from duodenal ulcers plus the fact that such bleeding resolved spontaneously in 80% of cases is important; however, it is not possible to draw any therapeutic conclusion from this small group of patients.

The present patient had gastric tissue present in his Meckel's diverticulum which has been correlated with the presence and nature of symptoms in this condition. Depending upon the thoroughness of the search, ectopic tissue is present in 25 to 72% of symptomatic patients (10,11). In one large series only 16% of patients with ectopic tissue were asymptomatic (4). Tissue types include gastric (60%), pancreatic (16%) and mixed (22%) (10,11); 92 to 100% of Meckel's diverticulum complicated by bleeding are associated with heterotopic tissue (4,10). Efforts have been made to correlate the presence of gastric mucosa with the likelihood of bleeding. Parietal cells present in gastric mucosa have been demonstrated to secrete acid, and islets of Langerhans are present in pancreatic rests (10).

What avenues are available to the clinician for diagnosing Meckel's diverticulum? Upper gastrointestinal series are insensitive because the wide mouth of the diverticulum empties well and holds only a small amount of residual barium (12). A number of authors feel that enterolysis is the most reliable method for preoperative
diagnosis of Meckel's diverticulum (12-15). The barium injected under pressure highlights any constricting lesion and the regulatory effects of the gastric and pyloric areas are bypassed readily by the enteroclysis catheter.

Technetium pertechnetate has an affinity for mucus-producing and parietal cells, and the tracer is concentrated by the ectopic gastric mucosa. Cimetidine does not interfere with uptake but reduces luminal acidity fourfold in the dog model. It is optimally delivered 24 h before imaging (16). Another agent used to increase the sensitivity of a Meckel's scan is pentagastrin. In mice, a 65% increase in uptake is noted with pentagastrin, and some radiologists prefer the increase in scan sensitivity despite a theoretical risk of increased bleeding (17). In a large series of 954 cases, of which 700 were children, sensitivity for ectopic gastric mucosa was 85%. In adults with surgically confirmed Meckel's diverticulum a sensitivity of 62.5% was reported (18). If bleeding is present, angiography warrants serious consideration (19). A prudent course would involve more than one modality being used before exclusion of the diagnosis.

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REFERENCES