

Toothpick Ingestion Causing Gastric Submucosal Mass and Abscess

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CASE REPORT

A 69 year-old man presented with generalized abdominal pain. As part of the workup, an upper endoscopy was performed, which revealed a submucosal mass in the distal body of the stomach along the greater curvature (Figure 1). Endoscopic ultrasound demonstrated a hypoechoic, heterogeneous, and calcified oval submucosal mass with undefined borders, which appeared to originate from the muscularis propria (Figure 2). The lesion was 20 mm in diameter. The endosonographic features were not typical for a gastrointestinal (GI) stromal tumor. Fine-needle aspiration of the mass was performed with one pass using a 22-gauge needle, which was negative for malignant cells and was otherwise non-specific. Abdominal computed tomography was then performed and showed a 2.9 x 3.5-cm soft tissue mass arising from the greater curvature of the body of the stomach



Figure 1. Submucosal mass as seen on upper endoscopy.

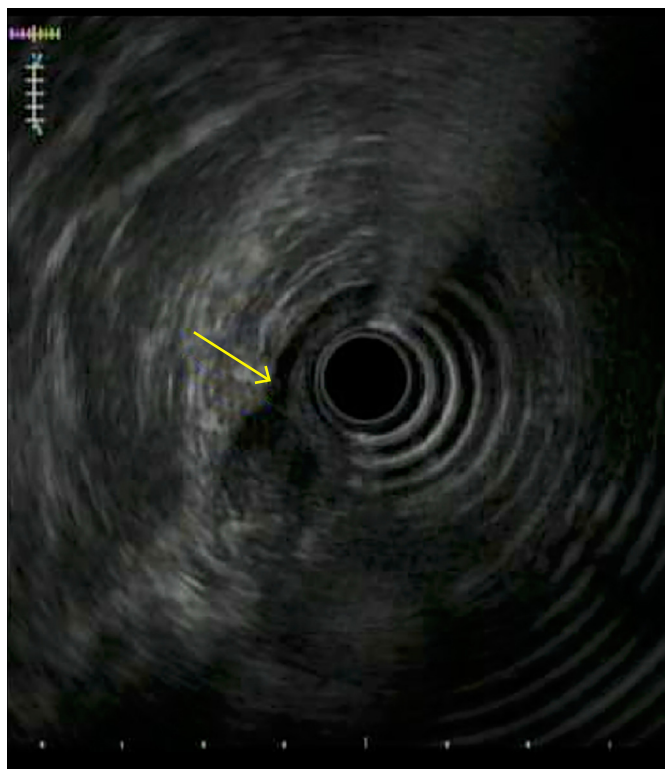


Figure 2. Hypoechoic, ovoid, heterogeneous mass arising from muscularis propria on endoscopic ultrasound.

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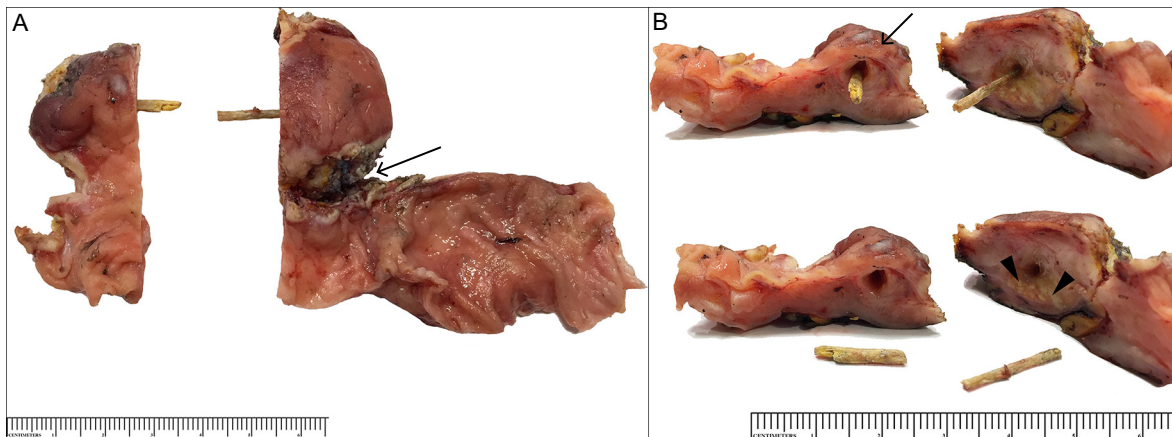


Figure 3. (A) Overhead view of an opened portion of distal stomach, with a cut transverse to the longitudinal axis, revealing a wooden stick 4.1-cm long by 0.2-cm in diameter, within the $5.9 \times 3.5 \times 2.0$ -cm polypoid mass with overlying mucosa originating from gastric mucosa. (B) Cut surface of the polypoid mass revealing a 4.1-cm-long wooden stick within a $4.2 \times 0.3 \times 0.2$ -cm cavity in the region of the muscularis propria (top). Removing the stick (bottom) revealed beige to yellow-tan material within the cavity, which was surrounded by yellow-tan and focally hemorrhagic plaques, grossly consistent with abscess formation.

containing an elongated density possibly representing a calcification; however, a foreign body embedded in the wall causing a foreign body granuloma could not be excluded. The patient underwent a distal gastrectomy with a Billroth II reconstruction to resect the mass. Pathologic evaluation revealed acute and chronic abscess around a wooden stick and actinomycosis overgrowth within the cavity of the mass (Figures 3 and 4). Immunostains for CD-117, discovered on GIST 1 (DOG1), S100, smooth muscle actin (SMA), and CD-34 were negative.

Most ingested foreign bodies will pass through the GI tract without complication. However, ingested foreign bodies are associated with an estimated 1500 deaths annually.¹ Ingestion of long, hard, and pointed objects such as toothpicks may be complicated by GI bleeding, bowel perforation, obstruction, and sepsis.² It is important to note that less than 1% of ingested foreign bodies cause GI perforation.³ The incidence of toothpick-related injuries to intestinal organs is estimated

to be 0.2 per 100,000.⁴ As demonstrated in our case, a chronic abscess can present as a submucosal mass raising concern for a GI stromal tumor with an equivocal endosonographic exam and a nondiagnostic fine-needle aspiration. Cytology and immunostaining were negative for malignancy, and the pathology was consistent with foreign body abscess with actinomycosis overgrowth related to toothpick ingestion. In the proper clinical setting, gastroenterologists should consider the possibility of a foreign body abscess in the evaluation of a gastric submucosal mass.

DISCLOSURES

Author contributions: D. J. Waintraub wrote the manuscript and reviewed the literature. L. S. D'Souza edited and reviewed the manuscript. E. J. McCabe reviewed the manuscript. E. Madrigal and N. D. These reviewed the pathology and provided the images. J. Bratcher is the article guarantor.

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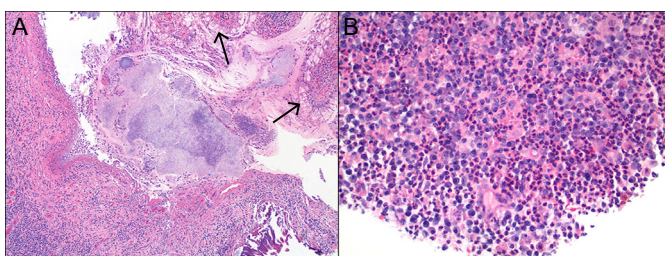


Figure 4. (A) Actinomyces overgrowth (center) within the gastric cavity, surrounded by an inflammatory infiltrate. Note the mucosal elements (arrows), which presumably tracked down into the muscularis propria as the wooden stick penetrated this gastric layer. Haematoxylin and eosin, $\times 10$. (B) Acute and chronic abscess formation within the gastric cavity, depicted by abundant neutrophils and plasma cells. Haematoxylin and eosin, $\times 40$.