$3,000 for $1.05: Short Changed?

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$3,000 for $1.05: Short Changed?
By Meena Sunil, MD, and Gary Malakoff, MD, FACP

ABSTRACT
Ingestion of coins or other foreign objects is a common occurrence, more so in children than adults. This may be accidental or intentional. Multiple symptoms and signs have been attributed to foreign body ingestion. We report an unusual case of an incidental finding of ingested coins in the stomach of an adult. The patient underwent endoscopic retrieval of the coins as per current guidelines. We present a brief discussion of unusual presentations of ingested coins in adults, as well as a review of the literature on management strategies for foreign body ingestions.

INTRODUCTION
Foreign body ingestion is a common problem. The vast majority of cases are seen in children, and most of these involve coins.1,2 Guidelines recommend a more rapid intervention for objects higher up in the gastrointestinal tract or the esophagus while it may be prudent to wait three to four weeks once the object has passed into the stomach.1,3,4 On occasion, the ingestion may go unnoticed for months to years.5,6 We present an unusual case of incidental discovery of ingested foreign body in an adult.

CASE REPORT
A 61-year-old Caucasian female presented to the emergency room with three days of right lower quadrant abdominal pain that radiated down to her thighs. Associated symptoms included nausea and a decreased urine output. Past medical history was significant for irritable bowel syndrome, chronic back pain, diverticulosis, and diabetes mellitus. Past surgical history included appendectomy, cholecystectomy, and hysterectomy. She had a 90-pack year smoking history, drank alcohol socially, and denied illicit drug use. She formerly worked as school cafeteria manager. On physical examination, she was febrile with a temperature of 101.6 °F, heart rate was 120/minute, respiratory rate was 16/minute and blood pressure was 117/65 mmHg. She was in significant distress with right lower quadrant tenderness on palpation without rebound, guarding or rigidity. Laboratory work-up showed a leukocytosis of 17,000/mm3, with 18% bands. Urinalysis was consistent with infection. She had renal insufficiency with a creatinine of 1.3mg/dL. Computerized tomography scan of the abdomen revealed right-sided obstructive nephrolithiasis with pyelonephritis. A right ureteral stent was placed to relieve the obstruction and patient was started on broad spectrum antibiotics. Her symptoms resolved over the ensuing days, as did her laboratory parameters. Of note, imaging studies obtained at admission incidentally revealed a metallic foreign body in her stomach. This metallic object was still in the proximal stomach on repeat studies. Although her symptoms had abated, the patient and her family had continued concern regarding the exact nature of the foreign body, and an esophagogastroduodenoscopy (EGD) was performed to retrieve it. The metallic foreign body turned out to be a stack of five coins – four quarters and a nickel – which were stuck together, although freely mobile as one mass in the stomach. They appeared green and corroded. The coins were separated with difficulty and were removed individually using a snare. On inquiry, neither the patient nor her family had any prior knowledge about the ingestion of the coins or any history of pica. A more extensive review of old radiology records revealed a metallic foreign body resembling a coin noted in the distal esophagus on chest x-ray five years before.

DISCUSSION
The finding of ingested coins in adults is infrequent, but there have been rare case reports. The most common type of coin ingested is the penny, followed by the quarter. One report describes an 85-year-old blind female with a history of esophageal stricture who presented with dysphagia and odynophagia...
of two days duration. She was noted to have three stacked coins lodged in her esophagus that were retrieved under anesthesia. It was considered to be an inadvertent ingestion due to her blindness. Another unusual side effect reported includes anemia and neutropenia as a result of multiple coin ingestion. This was illustrated in a 58-year-old male patient with paranoid schizophrenia with habitual ingestion of coins. Workup revealed coins throughout the gastrointestinal tract, and these were mostly pennies. Among United States coins, only the pennies have zinc in their composition (2.5% copper, 97.5% zinc). This practice started in 1982 when copper prices started rising. The zinc content in the coins resulted in copper deficiency that caused subsequent anemia and neutropenia.

Broad guidelines have been provided by the Standards of Practice Committee of the American Society for Gastrointestinal Endoscopy for the management of ingested foreign bodies. These include endoscopic retrieval of objects lodged in the proximal esophagus, especially if the patient is symptomatic. In adults, the guidelines recommend endoscopic removal of blunt foreign objects such as coins if they have not passed through the stomach in three to four weeks. However late onset of symptoms and incidental findings of ingested foreign bodies have been reported in adults. Guidelines are less clear on retrieval of foreign bodies under these circumstances. One of these cases reported the incidental discovery of an English penny in a 74-year-old patient during a routine colonoscopy with no attributable symptoms or pathology. It was highly oxidized suggesting it had been there for a long time. Similarly, our patient seemingly had no adverse effects secondary to the coin ingestion. She had no evidence of gastric outlet obstruction or narrowing, so it was unclear why the coins failed to pass onward into the duodenum. Another report by Wright et al., describes ingestion of souvenir coins from the 1998 World Cup, which were larger and heavier relative to the official U.S. Treasury coins. These coins were noted to be at the gastric outlet and were retrieved endoscopically. The authors speculate that the weight of the coins impeded their forward movement with peristalsis. In our patient, the stack of coins included four quarters and a nickel, a total of $1.05. The size of a penny, nickel and quarter are 19.05mm, 21.21mm and 24.26mm respectively per the U.S. Mint specifications of currently circulating coins. We could speculate along similar lines as Wright et al., that the coins being stacked together weighed more and had a bigger diameter, which precluded their forward passage through the stomach.

In the current era of scrutiny over healthcare costs, it is also interesting to reflect on the costs of mobilizing an advanced endoscopic procedure worth thousands of dollars to retrieve the ingested foreign bodies. A study by Arms et al., compared the cost effectiveness and safety of endoscopy versus bougienage as an alternative technique for foreign body removal from the upper gastrointestinal tract. Total calculated charges for an upper endoscopy for foreign body retrieval at our institution are approximately $3,000. The study by Arms et al., noted the hospital charges on average ranged from $1,884 for successful bougienage to nearly $6,000 for endoscopy. The conundrum lies in cases like ours when the coins are found incidentally, and patients have no overt symptoms attributed to them. The guidelines are not clear in these circumstances. Understandably, there are driving concerns both in the patient and the physician to be proactive despite the costs and retrieve the objects, which in our patient turned out to be worth $1.05. We need more guidelines addressing cases such as these that fall in the gray areas.

References:


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