

# Recurrent Intentional Foreign Body Ingestion: An Endoscopist's Dilemma

Dileep Atluri, MD  
Chandra Veluru, MD  
Anish Chopra, MD  
Kevin D. Mullen, MD

*Division of Gastroenterology, Department of Medicine,  
MetroHealth Medical Center and Case Western Reserve  
University, Cleveland, Ohio*

## Case Reports

### Patient #1

A 22-year-old African American male presented with abdominal pain and coffee ground vomitus after allegedly swallowing a pocketknife. The patient had been feeling depressed and had run out of his medications (duloxetine hydrochloride [Cymbalta, Lilly] and haloperidol) prior to the foreign body ingestion. His psychiatric history included major depression, borderline personality disorder, and bipolar disorder.

The patient underwent an upper endoscopy for removal of the object (Figures 1–3). The endoscope was inserted, and the pocketknife was found in the stomach. A snare was placed around the pocketknife and then closed. The pocketknife and endoscope were then carefully withdrawn together. There was no obvious trauma from the procedure.

The patient had had a similar presentation 3 weeks earlier when he had ingested 3 screws and 1 blade. At that time, he underwent an upper endoscopy for removal of the objects, which were lodged in his stomach. Since 2007, the patient has undergone 9 upper endoscopies and 2 colonoscopies at our institution as well as many more procedures at other hospitals. The patient has swallowed forks, bolts, screws, blades, steak knife blades, and pocketknives. He has also undergone multiple laparotomies for the management of foreign body ingestion since 13 years of age.

### Patient #2

A 25-year-old African American female presented after swallowing a ballpoint pen (Figures 4 and 5). An upper



**Figure 1.** An abdominal radiograph showing a pocketknife in the patient's stomach.

endoscopy showed a ballpoint pen in the distal esophagus, with the pointed end lodged proximally at 35 cm from the incisors. The pen was grasped with forceps and removed with the assistance of an overtube. The patient had multiple psychiatric disorders, including borderline personality disorder, bipolar disorder, bulimia nervosa, post-traumatic stress disorder, and pica.

The patient has had numerous episodes of compulsive foreign body ingestion since 5 years of age. Since 2004, she has undergone 64 upper endoscopies and 4 colonoscopies at our institution and many more procedures at other hospitals. She has also undergone multiple laparotomies for the management of foreign body ingestion.

## Discussion

Intentional foreign body ingestion is challenging to treat for emergency room physicians, gastroenterologists, and psychiatrists. The time since ingestion and type of ingested object are often unclear on presentation, mak-

Address correspondence to:

Dr. Chandra Veluru, Division of Gastroenterology, Department of Medicine,  
MetroHealth Medical Center, 2500 MetroHealth Drive, Cleveland, OH 44109;  
E-mail: cveluru@metrohealth.org



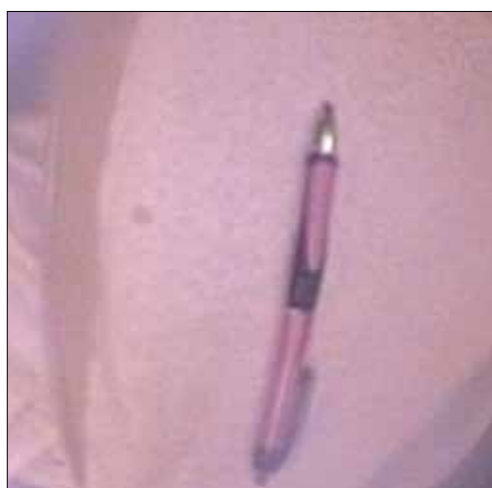
**Figure 2.** Endoscopic view of the pocketknife being retrieved with a snare.



**Figure 3.** The retrieved pocketknife.



**Figure 4.** Endoscopic view of the ballpoint pen found in the patient's distal esophagus.



**Figure 5.** The retrieved ballpoint pen.

ing it difficult for endoscopists to determine the optimal timing of upper endoscopy and the type of anesthesia necessary for the procedure. Gitlin and colleagues divided the behavior of these patients into 4 distinct diagnostic subgroups: malingering, psychosis, pica, and personality disorder.<sup>1</sup> Both of our patients had diagnoses of borderline personality disorder in addition to an Axis I disorder, such as major depressive disorder, schizoaffective disorder, or post-traumatic stress disorder.

Self-injurious behavior is fairly common in patients with severe personality disorders, post-traumatic stress disorder, and some psychotic disorders.<sup>2</sup> These patients often have histories of childhood deprivation, physical abuse, and/or sexual abuse.<sup>3</sup> In patients with personality disorders, intentional ingestion is a form of self-injury. These

behaviors are usually nonsuicidal and are considered to be parasuicidal in intent (ie, the ingestion is not done with the intention to die but due to a number of other psychological processes).<sup>1</sup> Self-injury can be an expression of rage toward oneself and/or caregivers, punishment for oneself and/or others, or a way to force others to provide care. Unlike other self-injurious behaviors, ingestion involves an element of secretiveness and control, as the ingestion is not overt to the naked eye. It is interesting to note the countertransference anger that the medical staff often experiences toward such patients, reflecting their sense of powerlessness and their feeling of being controlled by the patient. The patient may feel empowered by being able to frustrate and challenge his or her doctors and may therefore be motivated to indulge in additional ingestions.

In a study of intentional swallowing of foreign bodies conducted at Rhode Island Hospital, Huang and associates found that 33 patients were responsible for 305 cases of intentional ingestion over an 8-year period (2001–2009).<sup>4</sup> Ten percent of these patients were in prisons, 32% were in private homes, and 58% were in institutions; 79% of all patients were diagnosed with a psychiatric disorder. A variety of foreign bodies were retrieved, with the most common items being pens, batteries, knives, razor blades, metal objects, pencils, toothbrushes, spoons, and coins. The most common accessories used to extract the foreign bodies were snares (58%), rat-tooth grasping forceps (14.4%), retrieval nets (11.5%), overtubes (10.8%), and rubber hoods (4.6%). The estimated total cost to the hospital for treating these 33 patients was over \$2 million.

A study by Palta and coworkers at the University of Southern California, Los Angeles reviewed 262 cases of foreign body ingestion and found that 92% of cases were intentional, 85% of cases involved psychiatric patients, and 84% of cases occurred in patients with a history of prior ingestions.<sup>5</sup> The time from ingestion to presentation was more than 48 hours in 168 cases (64%). The overall success rate of endoscopic extraction was 90% (165/183 cases).

Flexible endoscopy is the first choice for management of this clinical emergency due to its efficacy, low morbidity, and low cost compared to surgical treatment. Management is influenced by the patient's age and clinical condition; the size, shape, and type of the ingested object; the anatomic location of the lodged object; and the technical abilities of the endoscopist. The American Society for Gastrointestinal Endoscopy recommends urgent endoscopic intervention when a sharp object or disk battery is lodged in the esophagus; in addition, urgent endoscopy is recommended to prevent aspiration when an ingested foreign object or food bolus impaction creates a high-grade obstruction and the patient is unable to manage his or her secretions.<sup>6</sup> For other objects in the esophagus, as well as long (>5 cm) or sharp objects in the stomach, endoscopic intervention can be delayed for 24 hours. Sharp, pointed, and long objects in the esophagus and stomach require endoscopic retrieval due to the increased risk of complications. Blunt objects that have passed into the stomach can be managed safely without endoscopy. Most objects pass through the gut within 4–6 days, although some objects may take as long as 4 weeks. While waiting for spontaneous passage of a foreign body, patients are usually instructed to continue a regular diet and to observe their stools for the ingested object. Although deaths caused by foreign body ingestion have been reported on rare occasions, mortality rates have been extremely low.<sup>7</sup>

There have been many case reports of intentional foreign body ingestion, but, unfortunately, very limited research has been conducted on appropriate treatment for foreign body ingestion in patients with borderline personal-

ity disorders. Various treatment modalities are used to treat patients with personality disorders who engage in general self-harming behaviors. Studies have shown that dialectical behavioral therapy decreases self-injury, hopelessness, and depressive features in this population.<sup>8</sup> Supportive therapy and other cognitive behavioral therapy approaches have also been shown to be helpful.<sup>9,10</sup> Pharmacologic interventions with agents used to treat alcohol and drug addiction (such as naltrexone and clonidine) have led to decreases in both the impulsive drive to self-harm and the frequency of self-injury, according to several studies.<sup>11,12</sup> However, there do not appear to be any studies that have specifically examined treatment for recurrent foreign body ingestion.

## Conclusion

Due to the need for potentially long hospital stays and repeat endoscopic and surgical interventions, patients with foreign body ingestion frequently utilize a large proportion of already scarce medical resources at institutions that often serve a low socioeconomic population. More prospective studies are needed to help develop better techniques for management and treatment of this unique group of patients, so that physicians can provide more efficient and effective treatment that will result in both better patient outcomes and reduced costs.

*The authors would like to acknowledge the consent and cooperation of the patients discussed in this paper.*

## References

1. Gitlin DF, Caplan JB, Rogers MP, Avni-Barron O, Braun I, Barsky AJ. Foreign body ingestion in patients with personality disorders. *Psychosomatics*. 2007;48:162-166.
2. Gerson J, Stanley B. Suicidal and self-injurious behavior in personality disorder: controversies and treatment directions. *Curr Psychiatry Rep*. 2002;4:30-38.
3. Santa Mina EE, Gallop RM. Childhood sexual and physical abuse and adult self-harm and suicidal behavior: a literature review. *Can J Psychiatry*. 1998;43:793-800.
4. Huang BL, Rich HG, Simundson SE, Dhingana MK, Harrington C, Moss SF. Intentional swallowing of foreign bodies is a recurrent and costly problem that rarely causes endoscopy complications. *Clin Gastroenterol Hepatol*. 2010;8:941-946.
5. Palta R, Sahota A, Bemarki A, Salama P, Simpson N, Laine L. Foreign body ingestion: characteristics and outcomes in a lower socioeconomic population with predominantly intentional ingestion. *Gastrointest Endosc*. 2009;69(3 pt 1):426-433.
6. Eisen GM, Baron TH, Dominitz JA, et al; American Society for Gastrointestinal Endoscopy. Guideline for the management of ingested foreign bodies. *Gastrointest Endosc*. 2002;55:802-806.
7. Bennett DR, Baird CJ, Chan KM, et al. Zinc toxicity following massive coin ingestion. *Am J Forensic Med Pathol*. 1997;18:148-153.
8. Koerner K, Linehan MM. Research on dialectical behavior therapy for patients with borderline personality disorder. *Psychiatr Clin North Am*. 2000;23:151-167.
9. Aviram RB, Hellerstein DJ, Gerson J, Stanley B. Adapting supportive psychotherapy for individuals with borderline personality disorder who self-injure or attempt suicide. *J Psychiatr Pract*. 2004;10:145-155.
10. Brown GK, Newman CF, Charlesworth SE, Crits-Christoph P, Beck AT. An open clinical trial of cognitive therapy for borderline personality disorder. *J Pers Disord*. 2004;18:257-271.
11. Roth AS, Ostroff RB, Hoffman RE. Naltrexone as a treatment for repetitive self-injurious behavior: an open-label trial. *J Clin Psychiatry*. 1996;57:233-237.
12. Philipsen A, Richter H, Schmahl C, et al. Clonidine in acute aversive inner tension and self-injurious behavior in female patients with borderline personality disorder. *J Clin Psychiatry*. 2004;65:1414-1419.

# Review

## Repeat Intentional Foreign Body Ingestion: The Importance of a Multidisciplinary Approach

Caren Palese, MD

Firas H. Al-Kawas, MD

*Division of Gastroenterology  
Georgetown University Hospital  
Washington, DC*

Foreign body ingestion is a problem frequently encountered by emergency room physicians and gastroenterologists. It is thought that 80–90% of ingested foreign bodies spontaneously pass through the gastrointestinal tract, with only 10–20% requiring endoscopic intervention and a mere 1% culminating in the need for surgery.<sup>1,2</sup> The swallowing of foreign bodies can be accidental or intentional. Unsurprisingly, the majority of accidental cases of foreign body ingestion are seen in children under 3 years of age. Conversely, most intentional swallowing is primarily seen in adults, usually presenting as a pattern of repetitive ingestion. Until recently, the medical and psychiatric literatures did not focus much attention on prevention of and therapy for the behaviors associated with repeat foreign body ingestion. Atluri and colleagues present 2 clinical scenarios of recurrent intentional foreign body ingestion that highlight the importance of a multidisciplinary approach for managing these often challenging cases.<sup>3</sup>

The management protocol for foreign body ingestion depends on several key factors: the type, shape, and location of the ingested foreign body; the patient's symptomatology; the elapsed time since ingestion of the foreign body; and any concurrent evidence of complications such as bleeding or perforation. In addition, medical, surgical, and psychiatric evaluations should be part of any examination of intentional and/or repeat foreign body ingestion.

Intentional foreign body ingestion is most commonly seen in adult patients with intellectual or mental disabilities, significant substance abuse, psychiatric disorders, or external motivations (such as avoidance of a jail sentence). Repeat foreign body swallowing may be part of a syndrome of self-mutilation and/or attention-

seeking behavior. Repeat swallows are often diagnosed with the psychiatric syndrome of factitious disorder or Munchausen syndrome. The association of a personality disorder with repeat ingestion of foreign objects, self-mutilation, drug abuse, and/or alcohol abuse was first described by Carp in 1950.<sup>4</sup> In 1982, James and Allen-Mersh reported on 5 patients with a personality disorder syndrome, substance abuse, and self-injury; the researchers recommended conservative treatment and avoidance of surgical intervention.<sup>5</sup> In 1991, Karp and coworkers reported a series of 19 prisoners who swallowed foreign bodies; 10 of these patients had suicidal ideation with command hallucination.<sup>6</sup> Notably, none of the patients had reported swallowing foreign bodies prior to imprisonment.<sup>6</sup>

Both prevention of and therapy for intentional foreign body ingestion require a multidisciplinary approach. Patients with intentional foreign body ingestion are usually seen by emergency room, psychiatry, anesthesia, surgery, nursing, and even security services. Consequently, the hospital and fiscal resources needed to treat these patients can be significant, as highlighted in a retrospective review by Huang and coworkers.<sup>7</sup> This study reviewed repeat foreign body ingestion treated over an 8-year period at Rhode Island Hospital and identified 33 different patients involved in 305 cases. The majority of patients (79%) were diagnosed with a concomitant psychiatric disease. Hospital and cost accounting systems estimated that the total cost of these cases over 8 years was \$2,018,073 (\$1,500,627 in hospital costs, \$240,640 in physician fees, and \$276,806 for security services).<sup>7</sup> The average inpatient length of stay (5.66 days) appeared to be primarily affected by the patient's psychiatric health (ie, the tendency for suicidal ideation, belligerence, and the inclination to repeat self-mutilating acts), as well as the need for substance abuse counseling. The length of stay was rarely affected by a delay in endoscopy or the presence of complications. Therefore, as the authors concluded, intentional foreign body ingestion should be managed on an outpatient basis if the patient's medical and psychiatric states allow this option.

Unfortunately, there are major limitations to the long-term treatment of these patients. Antipsychotic agents, antidepressants, and mood stabilizers are limited in their effectiveness, particularly in patients with Munchausen syndrome. Physicians can try to use behavioral therapies to reduce impulsive acts and self-mutilation attempts, but specific psychiatric protocols pertaining to the repeat ingester have not been adequately studied. The medical staff should be counseled on how to avoid countertransference anger, which can occur after being repeatedly challenged by the patient. Patients may be motivated by eliciting an anger response in their

Address correspondence to:

Dr. Firas H. Al-Kawas, Division of Gastroenterology, Georgetown University Hospital, 3800 Reservoir Rd NW, Washington, DC 20007; Tel: 202-444-1670; Fax: 202-444-8299; E-mail: [alkawasf@gunet.georgetown.edu](mailto:alkawasf@gunet.georgetown.edu)



medical team.<sup>3</sup> Psychiatric consultation is mandatory, and one-to-one supervision is usually necessary during hospital admission. Patients should return to their usual environment as soon as it is feasible in order to limit any secondary gain from hospital admission as well as to reduce the costs associated with hospitalization.

In addition, the avoidance of unnecessary endoscopic intervention may help prevent repeat foreign body ingestion.<sup>8</sup> A framework for making decisions regarding the need for endoscopic management and determining how best to perform that intervention can be found in the American Society for Gastrointestinal Endoscopy guidelines for the management of ingested foreign bodies.<sup>9</sup> The perceived risk of aspiration and/or perforation must be identified via patient symptomatology and/or imaging. Foreign body or food bolus impaction in the esophagus requires urgent intervention.<sup>10</sup> The best initial line of management is usually flexible endoscopy with airway protection and the use of an overtube and/or endotracheal intubation. Equipment for retrieval should be readily available to the endoscopist and should include baskets, Roth nets (US Endoscopy), polypectomy snares, rat-tooth forceps, and alligator forceps. The use of an overtube can enable repeat introduction of the endoscope into the esophagus as well as protection of the esophageal mucosa and airway. Identification of the type of ingested object (ie, sharp vs smooth, length, etc) via patient history and/or imaging can help determine the need, timing, and use of specific equipment during endoscopy. Surgical management is rarely needed.

## Summary

The management of a patient with recurrent intentional foreign body ingestion requires a team approach that incorporates endoscopic expertise and medical, surgical, and psychiatric support. Collaborative strategies across these disciplines may help prevent an issue that is costly and burdensome both for the healthcare system and, most importantly, for patients.

## References

1. Smith MT, Wong RK. Esophageal foreign bodies: types and techniques for removal. *Curr Treat Options Gastroenterol*. 2006;9:75-84.
2. Schwartz GF, Polsky HS. Ingested foreign bodies of the gastrointestinal tract. *Am Surg*. 1976;42:236-238.
3. Atluri D, Veluru C, Chopra A, Mullen KD. Recurrent intentional foreign body ingestion: an endoscopist's dilemma. *Gastroenterol Hepatol (NY)*. 2012;8:482-484.
4. Carp L. Foreign bodies in the gastrointestinal tracts of psychotic patients. *Arch Surg*. 1950;60:1055-1075.
5. James AH, Allen-Mersh TG. Recognition and management of patients who repeatedly swallow foreign bodies. *J R Soc Med*. 1982;75:107-110.
6. Karp JG, Whitman L, Convit A. Intentional ingestion of foreign objects by male prison inmates. *Hosp Community Psychiatry*. 1991;42:533-535.
7. Huang BL, Rich HG, Simundson SE, Dhingana MK, Harrington C, Moss SF. Intentional swallowing of foreign bodies is a recurrent and costly problem that rarely causes endoscopy complications. *Clin Gastroenterol Hepatol*. 2010;8:941-946.
8. O'Sullivan ST, Reardon CM, McGreal GT, Hehir DJ, Kirwan WO, Brady MP. Deliberate ingestion of foreign bodies by institutionalised psychiatric hospital patients and prison inmates. *Ir J Med Sci*. 1996;165:294-296.
9. Eisen GM, Baron TH, Dominitz JA, et al; American Society for Gastrointestinal Endoscopy. Guideline for the management of ingested foreign bodies. *Gastrointest Endosc*. 2002;55:802-806.
10. Chaves DM, Ishioka S, Félix VN, Sakai P, Gama-Rodrigues JJ. Removal of a foreign body from the upper gastrointestinal tract with a flexible endoscope: a prospective study. *Endoscopy*. 2004;36:887-892.