

Intentional Razor Blade Ingestion: A Case Study Analysis on Management, Treatment, and Psychiatric Components

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Abstract

Context: Over 80 percent of foreign body ingestion cases are intentional and connected to underlying psychiatric illness. The type of object that is ingested may often determine the interventional approach and treatment. Nearly all cases will require a multidisciplinary team and ongoing psychiatric intervention.

Methods and Results: In this case study, a gastroenterologist was consulted for endoscopic intervention and retrieval of the razor blades that were ingested. Additionally, a psychiatric team was brought into this patient's long term care plan to get her treatment in an inpatient setting followed by close outpatient care.

Conclusions This case study addresses the importance of a multidisciplinary team approach to intentional razor blade ingestion in a patient with longstanding psychiatric illness. Other topics that are highlighted include multiple management strategies and possible complications within the team dynamic.

Introduction

Foreign body ingestion is deemed intentional in 80-90% of cases. 10-20% of these cases require endoscopic intervention and 1% require surgical intervention¹⁻⁵. As expected, the majority of accidental foreign body ingestions are seen among children while the majority of intentional ingestions, approximately 79%, are seen among adults

with a concomitant psychiatric disorder⁶⁻⁹. Patients experiencing a psychotic state, post-traumatic stress disorder, or who have a personality disorder are at higher risk for intentional ingestion of foreign bodies. The same patients often have a history of physical, sexual, or psychological abuse^{6,7}. Blaho *et al.* found auditory hallucinations to be a common underlying reason for ingestion of objects⁸.

The most common motives for foreign body ingestion include suicidal ideation and manipulation of the medical system. Patients who repeatedly and intentionally ingest foreign objects may suffer from attention seeking and or syndromes related to self-mutilation¹. Evans *et al.* found patients with recurrent and repetitive ingestion of objects suffered from more severe psychiatric illnesses and, as such, prevention should be focused on early and aggressive psychiatric intervention¹⁰.

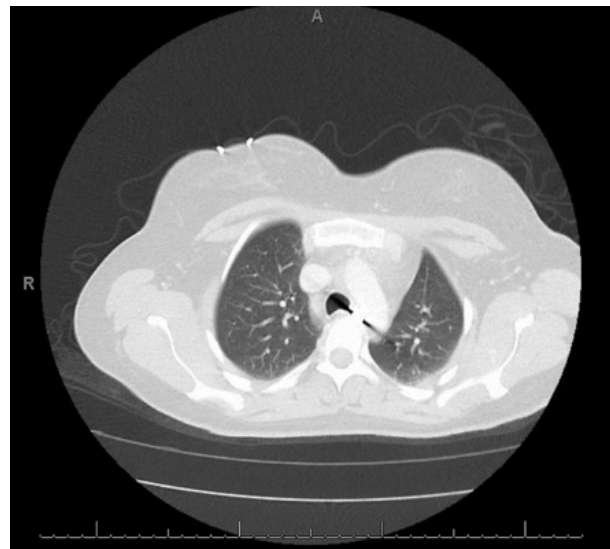
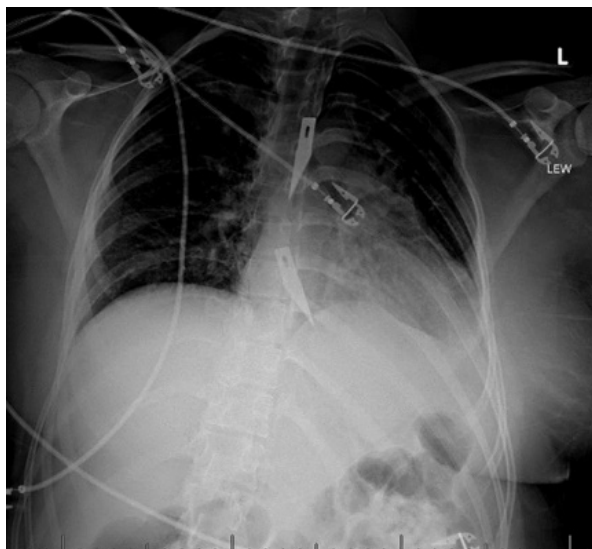
While treating patients who suffer from severe psychiatric illness and who have ingested sharp objects, emergency physicians may encounter problems with acute stabilization and initiation of workup. Once stabilized, the emergency physician begins consulting gastroenterology and surgery. A multidisciplinary approach is highly important, and good communication is essential. This approach helps to avoid complications, provide the care needed to help prevent recurrences, and prevent lack of

follow up; it is crucial in the patient's long term outcomes^{1,6,7,11}. This patient will likely attempt suicide again and possibly succeed without the involvement of multiple specialties¹².

Case Report

A 25-year-old female was brought to the emergency department by emergency medical services (EMS) after she called for an ambulance. The patient reportedly told EMS responders she had ingested two razor blades and over one-hundred anti-depressants in an attempt to commit suicide. After ingesting the razor blades and pills, she started experiencing chest pain and called for an ambulance to take her to the hospital.

On arrival at the emergency department, she was very lethargic but still able to respond to basic questions. Physicians discovered she had been previously seen in the same emergency department for prior episodes of foreign body ingestion. Her chart also revealed she had an ongoing history of



Figures 1 & 2. Figure 1 (left) - A chest x-ray showing two razor blades in the patient's esophagus. Figure 2 (right) - Computerized tomography (CT) of the chest.

bipolar disorder and suicidal ideation. During questioning, she was very slow to respond and her mood was depressed. She was hypotensive and her ECG showed sinus bradycardia without QTc prolongation. A chest x-ray was ordered and the razor blades were found in two locations in her esophagus as seen in Figure 1. Initial imaging suggested the presence of two blades. Computerized tomography (CT) of the chest (Figure 2) and pelvis was obtained to assess for any active bleeding or perforation possibly causing the prolonged hypotension. The patient became increasingly lethargic and bradypneic. As a result, she was emergently intubated to secure her airway. Additionally, a central line was placed in the right femoral vein to gain vascular access if vasopressors were required.

Procedure

A gastroenterology consult was obtained for evaluation and possible removal of the razor blades. An endoscope was passed through the mouth and directly visualized one razor blade in the mid-portion of the esophagus and a second at the gastroesophageal junction. While assessing the best method for foreign body extraction, it was determined that an overtube should be used to protect the overlying esophageal mucosa. The overtube

provided a solid protective surface circumferentially around the esophagus to prevent additional damage to the esophageal wall during attempts at removal of the razor blades (Figure 3). The endoscope was placed into the overtube and inserted into the patient's esophagus. Direct visualization of the lumen and foreign bodies was achieved by using the endoscope to guide the overtube as it was advanced toward the stomach. Once the overtube was in place and adequate visualization achieved, endoscopic snares were advanced down the esophagus toward the first razor blade. When the first razor blade was directly visualized with the endoscope, two razor blades were seen stacked on top of each other (Figure 4) in addition to another razor blade located inferiorly toward the gastroesophageal junction, as seen in Figure 5.

When an attempt was made to grasp the set of stacked razor blades, the lower blade dislodged from the upper one and moved inferiorly down the esophagus. The first blade was successfully removed without any additional damage to the surrounding structures. An additional attempt was made to access and remove the blade that became detached. This blade was relocated and



Figures 3, 4, 5. Endoscopic images showing (left) The overtube, (middle) two razor blades seen stacked on top of each other, (right) an additional razor blade located inferiorly,

successfully grasped using the forceps and cleared from the esophagus.

The last blade was located just superior to the gastroesophageal junction. It appeared as though the tip of the razor blade had punctured the esophageal mucosa and blood was surrounding the razor blade tip. On removal from the mucosa, minimal bleeding was noted. However, the grasping forceps lost hold of the blade and it lodged into the stomach.

From there, the blade was repositioned and removed using the snare and overtube. Once the blades were removed and the patient was stable, a psychiatrist was consulted and met with the patient and her family. They informed the patient would be placed on a mandatory 72 hour hold in the inpatient psychiatric hospital and highly encourage regular follow-up in an outpatient program.

Discussion

We recommend an inter-specialty and team approach to prevent recurrences, excess use of resources, and cost to the patient, healthcare team, hospital, and taxpayers. This approach should include emergency physicians, an Intensive Care Unit (ICU) team, general surgeons, a gastroenterologist, a psychiatrist, a therapist chaplain, and a social worker. Not all members have to play an active and time-consuming role, but all members should be informed of the patient's status and possible solutions should be developed as a team. One of the common errors in medicine is miscommunication between providers, which can be avoided by quality patient-hand offs and brainstorming solutions as a team.

Another screening method which has been recommended is the use of handheld metal detectors to screen for suspected foreign body ingestion which may involve metal objects. Handheld metal detectors are affordable and can be easily implemented as an emergency department screening tool to save cost and time to both the patient and healthcare providers. Previous studies have found hand-held metal detectors successful in identifying metallic objects in 94% of patients. The location of the metallic foreign body was positively identified in 100% of those cases by simply correlating the position of the metal detector with knowledge of normal anatomy¹³. This technique helps decrease unwarranted use of X-rays and CT scans^{13,14}. Radiographic imaging is highly recommended in patients with a positive screening test or in patients who exhibit a high level of clinical suspicion. CT can be delayed unless the object is thought to be radiolucent (plastic, wood), and some radiolucent objects still go undetected. Additionally, surgery should be delayed unless obstruction or perforation is suspected^{8,10}.

The majority of ingested objects can be treated with expectant observation. However, intubation and ACLS should always be considered and revisited as necessary throughout the observation period. This is especially important because extensive use of imaging tools, such as the endoscope, overtube, and snares, can possibly compromise the integrity of the patient's airway. Endoscopy should be employed if the object is located in the esophagus. Attempts to retrieve objects in the stomach or beyond the Ligament of Treitz via laparotomy or endoscopy should be avoided unless

perforation is of concern. Enemas and stool softeners may be considered however evidence shows little success with these techniques^{7,8}.

Once the patient is medically stable, psychiatry should be consulted. One of the most common adult patient populations for ingested objects are patients with pre-existing psychiatric illnesses^{1,6,7,10}. A short term, involuntary hold should be strongly considered in addition to transferring the patient to an inpatient psychiatric hospital. This step is deemed necessary since patients are considered a risk to themselves due to suicidal ideations. Once admitted to an inpatient psychiatric hospital, the patient can receive care from both a psychiatrist and therapist. This type of care has shown great potential in decreasing the rate of reoccurrence and failure to follow up. The patient can be placed on a long term involuntary hold, if needed, to ensure they are no longer a danger to themselves upon discharge. This also gives the therapist a chance to intervene with cognitive behavioral therapy and help reduce repeat occurrences. Although duration is unclear, cognitive behavioral therapy and dialectical behavioral therapy have both been shown to reduce recurrences^{7,9,11,15}. Upon discharge, the patient can transition to an outpatient treatment plan with the support of a designated primary care physician, out-patient psychiatrist, and out-patient therapist.

When a multidisciplinary team treats a patient with foreign body ingestion, potential disagreements regarding who composes the primary team may arise. For example, the team may disagree about who is ultimately responsible for the patient's treatment: intensive care, surgery, emergency medicine,

and psychiatry may all be involved. As seen in previous studies, successful outcomes require a multidisciplinary approach, but all members of the team must maintain an active role in the patient's care at various points in time^{1,6,7}.

Additionally, countertransference of the patient's actions may result in decomposition of the healthcare team and elicit an unwanted emotional response by the team such as frustration and anger. Conversely, by eliciting these emotions between the providers, the patient may gain a sense of control over the healthcare team, enticing the patient to continue their behavior in the future. Patients may be motivated and feel a sense of accomplishment when they have elicited an anger response within the team^{1,6}.

Conclusion

With a national average of approximately one ingestion per month per hospital, this case is not an uncommon presentation and physicians will likely encounter a similar presentation at some point in their career⁸. This case involves multiple members of the healthcare team assuming various roles in the patient's care. In some instances, a foreign body ingestion may be as simple as careful observation while waiting for the foreign body to exit the gastrointestinal tract. However, in a case of deliberate ingestion with the intention of suicide, many healthcare providers need to be involved in the care of the patient. Team members may include the attending physician, nurses, the psychiatry team, the ICU team, if the patient is unstable, a chaplain care team to talk with the family, and psychiatric social workers. With medical advancements providing more promising treatments and intervention, foreign body

removal has become more successful, but it is the interdisciplinary teamwork between the hospital healthcare professionals that help facilitate the definitive treatment of the patient.

Works Cited

1. Palese C, Al-Kawas FH. Repeat intentional foreign body ingestion: The importance of a multidisciplinary approach. *J Gastroenterol Hepatol*. 2012;8(7):485-6.
2. Eisen GM, Baron TH, Dominitz JA. American society for gastrointestinal endoscopy: Guidelines for the management of ingested foreign bodies. *Gastrointest Endosc*. 2002;55(7):802-6.
3. Losanoff JE, Richman BW, Jones JW. Razor blade “ingestion” – look behind the film. *J Clin Gastroenterol*. 2003;37(2):194-5.
4. Grimes IC, Spier BJ, Swize LR, Lindstrom MJ, Pfau PR. Predictors of recurrent ingestion of gastrointestinal foreign bodies. *Can J Gastroenterol*. 2013;27(1):e1-4.
5. Bekkerman M, Sachdev AH, Andrade J, Twersky Y, Iqbal S. Endoscopic management of foreign bodies in the gastrointestinal tract: a review of the literature. *Gastroenterol Res Pract*. 2016;2016:8520767.
6. Atluri D, Veluru C, Chopra A, Mullen K. Recurrent intentional foreign body ingestion: an endoscopist’s dilemma. *J Gastroenterol Hepatol*. 2012;8(7):482-4.
7. Gałczyński A, Cieplińska E, Konturek A. Habitual intentional foreign body ingestion – A literature review. *PJS*. 2016;88(5):290-7.
8. Blaho KE, Merigian KS, Winbery SL, Park LJ, Cockrell M. Foreign body ingestions in the emergency department: Case reports and review of treatment. *J Emerg Med*. 1998;16(1):21-6.
9. Gitlin DF, Caplan JP, Rogers MP, Avni-Barron O, Braun I, Barsky AJ. Foreign-body ingestion in patients with personality disorders. *Psychosomatics*. 2007;48(2):162-6.
10. Evans DC, Wojda TR, Jones CD, Otey AJ, Stawicki SP. Intentional ingestions of foreign objects among prisoners: a review. *World J Gastrointest Endosc*. 2015;7(3):162-8.
11. Poynter BA, Hunter JJ, Coverdale JH, Kempinsky CA. Hard to swallow: a systematic review of deliberate foreign body ingestion. *Gen Hosp Psychiatry*. 2011;33(5):518-24.
12. Choi JW, Park S, Yi KK, Hong JP. Suicide mortality of suicide attempt patients discharged from emergency room, nonsuicidal psychiatric patient discharged from emergency room, admitted suicide attempt patients, and admitted nonsuicidal psychiatric patients. *Suicide Life Threat Behav*. 2012;42(3):235-43.
13. Sacchetti A, Carraccio C, Lichenstein R. Hand held metal detector. Identification of ingested foreign bodies. *Pediatr Emerg Care*. 1994;10(4):204-7.
14. Ross SP, Letta F. Successful use of a metal detector in locating coins ingested by children. *J Pediatr*. 1992;120(5):752-3.
15. Perseus KI, Ojehagen A, Ekdahl S et al. Treatment of suicidal and deliberate self-harming patients with borderline personality disorder using dialectical behavioral therapy: the patients’ and the therapists’ perceptions. *Arch of Psychiatr Nurs*. 2003;17(5):218-27.