CASE REPORT

Esophageal Impaction of a Large Chicken Bone in a Patient with Schizophrenia

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Abstract : Esophageal foreign body impaction is a common clinical issue, particularly among individuals with psychiatric disorders. Although most cases are managed successfully with endoscopic intervention, sharp or large foreign bodies can lead to serious complications. We present the case of a middle-aged man with schizophrenia who accidentally ingested a large chicken bone, resulting in esophageal impaction that required extraction under general anesthesia. This case underscores the importance of heightened clinical awareness regarding altered pain perception and disordered eating behaviors in patients with schizophrenia. J. Med. Invest. 72 : 455-458, August, 2025

Keywords **:** *foreign body ingestion, esophageal impaction, pain perception, surgical extraction*

INTRODUCTION

Foreign body ingestion is a common presentation in emergency and gastrointestinal settings, with typical objects including food boluses, bones, dentures, coins, and various household items (1, 2). Patients with psychiatric disorders, particularly those with schizophrenia, are predisposed to atypical ingestion behaviors due to sensory processing abnormalities, impaired judgment, and impulsivity. While most foreign bodies can be removed endoscopically, sharp or large objects pose significant risks of perforation, hemorrhage, and infection, and may ultimately require surgical intervention (3-5). Herein, we report a case of esophageal foreign body impaction involving a large chicken bone that was successfully removed using endoscopic forceps under general anesthesia in a patient with schizophrenia.

CASE

A 54-year-old man with a 20-year history of schizophrenia presented to our hospital with fever, pharyngeal pain, odynophagia, and a sensation of sputum retention, 5 days after consuming deep-fried bone-in chicken. He had been receiving regular pharmacological treatment—levomepromazine (25 mg), risperidone (7 mg and 2 mg at separate times), clonazepam (1 mg), and carbamazepine (600 mg)—which had effectively stabilized his psychiatric condition.

The patient exhibited habitual eating behavior characterized by minimal chewing. After ingesting the chicken bone, he was only able to tolerate small amounts of soft food and liquids. Despite experiencing pharyngeal pain, odynophagia, and persistent sputum sensation, oral intake of limited liquid volumes remained possible.

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Three days before presentation, he developed a fever of approximately 38°C and visited the hospital on foot. He had quit smoking and alcohol consumption 10 years earlier. On examination, his height was 167 cm, weight 62 kg, blood pressure 124/78 mmHg, pulse rate 108 bpm, temperature 37.9°C, and peripheral oxygen saturation 95%. No abnormalities were observed in the tonsils or pharynx, and cardiopulmonary findings were unremarkable. He was alert, and his self-reported pain intensity was 2/10 on the numerical rating scale.

Contrast-enhanced computed tomography (CT) revealed a twisted, triangular, flat bone fragment located approximately 3 cm distal to the oral end of the esophagus. The patient was unaware of its presence. The sharp edge of the bone was deeply embedded in the esophageal wall, with surrounding localized submucosal edema and air bubbles (Figure 1).

Laboratory investigations indicated significant inflammation, with a white blood cell count of 14,100/μL and a C-reactive protein level of 30 mg/dL. Gastrofiberscopy showed swelling of the posterior pharyngeal wall and direct visualization of the bone fragment (Figure 2). Initial removal using endoscopic forceps was unsuccessful due to the fragment's firm embedding in the esophageal wall. The patient was therefore urgently transferred to a tertiary care hospital with otolaryngology services.

At the referral center, the foreign body was removed under general anesthesia via oral intubation. A straight Miller-type laryngoscope was used to expose the cervical esophagus. Preoperative three-dimensional CT imaging was used to assess the orientation of the bone fragment (Figure 3A). Endoscopy confirmed the CT findings, showing that the sharp edges were embedded in the esophageal wall (Figure 3B). Laparoscopic surgical forceps were employed to carefully dislodge the sharp tip from the esophageal wall while avoiding perforation (Figure 3C). The fragment was gently mobilized laterally and extracted, following a trauma-minimizing protocol. Ultimately, a chicken bone measuring 37 × 30 mm was successfully retrieved endoscopically without complications (Figure 3D). Postoperatively, the patient received intravenous antimicrobial therapy with sulbactam and ampicillin (12 g/day) for five days. Follow-up esophagography on postoperative day 5 revealed no evidence of esophageal perforation, and the patient was discharged without complications.

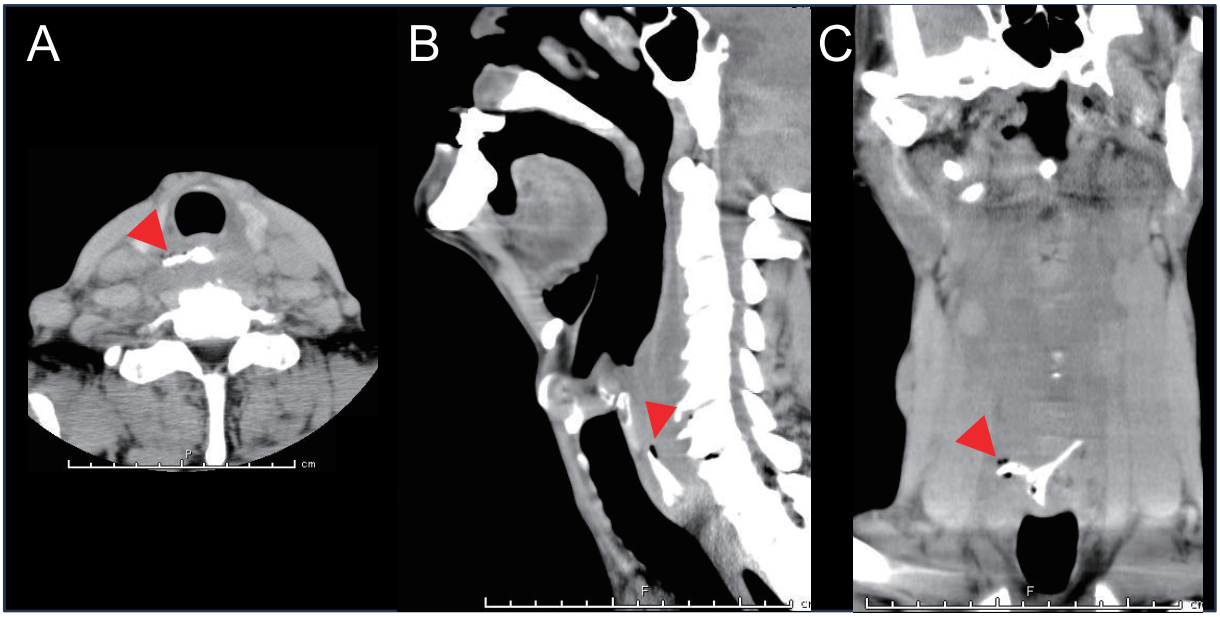

Figure 1. Contrast-enhanced computed tomography showing a twisted, triangular bone fragment lodged in the proximal esophagus. The sharp edge of the fragment is deeply embedded in the esophageal wall, with surrounding submucosal edema and air bubbles (arrow). Axial (A), sagittal (B), and coronal (C) planes.

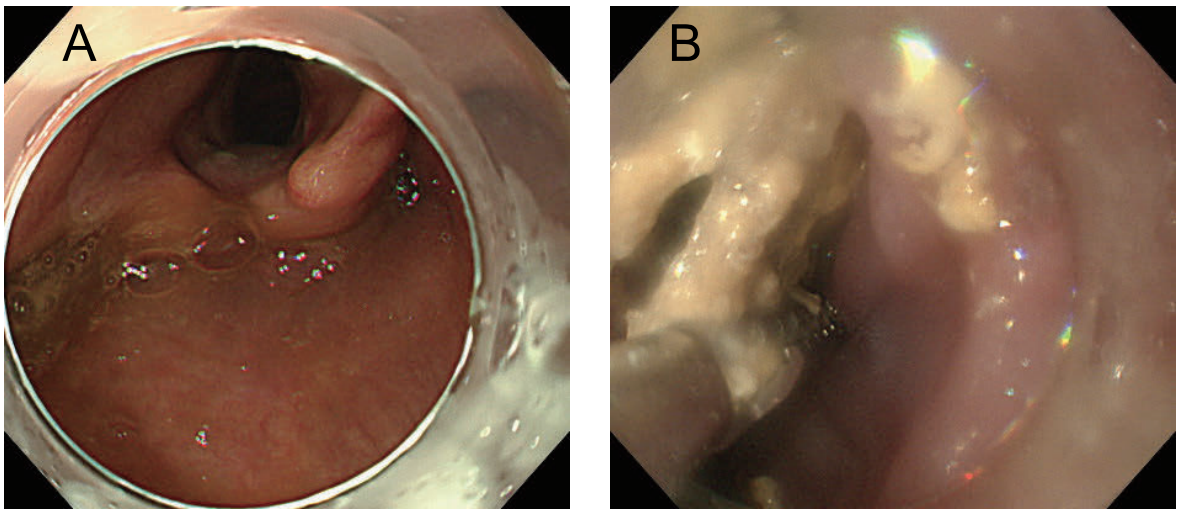

Figure 2. Gastrofiberscopic images showing posterior pharyngeal wall swelling (A) and direct visualization of the impacted bone fragment in the esophagus (B).

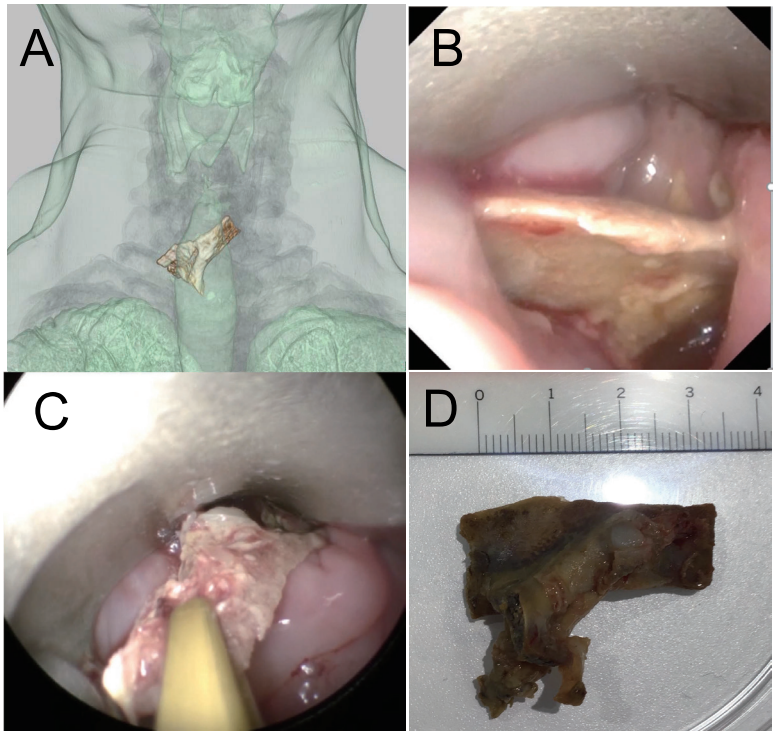

Figure 3. Three-dimensional computed tomography reconstruction demonstrating a flat, twisted, triangular bone fragment in the cervical esophagus (A). Endoscopic view showing the bone edges embedded within the esophageal wall (B). Laparoscopic surgical forceps used to carefully separate and extract the bone fragment (C). The retrived chicken bone measuring 37 × 30 mm (D).

DISCUSSION

Laryngeal and upper esophageal foreign body impactions are relatively uncommon but potentially life-threatening, particularly when they involve sharp or large objects (6). Chicken bones, in particular, pose a high risk of esophageal injury (1, 6). Most cases involve the ingestion of small fragments that typically pass through the gastrointestinal tract and are excreted in the feces without complications. However, large chicken bones can lead to serious complications such as perforation, airway obstruction, hemorrhage, and infection—including peritonitis and sepsis (7). Prompt removal is therefore essential in high-risk cases to prevent adverse outcomes (8).

Various cases of chicken bone ingestion have been reported in the literature. Regarding elongated bones, a 5.5 cm bone was removed from the jejunum (9), a 5 cm bone from the colon (10), and a 4 cm bone from the larynx (11). A 5 cm V-shaped xiphoid process bone was expelled per anus (12). A triangular chicken bone measuring 3.4 × 2.5 cm was impacted in the esophagus and successfully retrieved endoscopically, as described in our case (13). Notably, triangular bones tend to become lodged at physiological narrowings of the esophagus, making endoscopic removal feasible. Other extreme cases include the removal of 452 metal objects weighing 2,900 g from the stomach (14), and a 21.6 cm wrench extracted from the esophagus (2). Referral to psychiatry is essential in such cases.

Patients with schizophrenia are especially vulnerable to such complications due to aberrant eating behaviors such as pica, impulsive ingestion, and reduced awareness of risk (15, 16). Our patient exhibited habitual swallowing without adequate mastication. In this case, he was unaware of having ingested a bone during the consumption of fried chicken, likely due to deficits in sensory processing and impaired cognitive insight. Additionally, reduced pain perception, which is frequently observed in schizophrenia, may have contributed to his delayed presentation (17). Functional imaging studies have implicated hypofunction of the anterior cingulate cortex and insular cortex in the altered nociception observed in schizophrenia (17, 18).

Psychotropic medications may also contribute to foreign body ingestion (19). In the present case, the use of levomepromazine and risperidone—typical and atypical antipsychotics, respectively—could have caused dysphagia through extrapyramidal symptoms and sedative effects, which was not detected at the time of examination (20, 21). Clonazepam, a benzodiazepine, further increases the risk of aspiration due to its muscle relaxant properties (19). These drugs may have additive effects on swallowing dysfunction, and reduced oral sensation caused by antipsychotics may have prevented the patient from recognizing the presence of the chicken bone (19). Regular monitoring of swallowing function is therefore warranted in such patients.

To prevent accidental ingestion of foreign bodies, patients with psychiatric disorders should be instructed to take small bites and avoid rapid eating (22). It is also important to thoroughly educate cohabitants and caregivers (22). Dietary modifications are essential, such as avoiding bone-in chicken or fish, or ensuring that all bones are completely removed before serving (22).

Emergency endoscopy is indicated in cases involving sharp foreign bodies, complete esophageal obstruction, or button battery ingestion. However, even in the absence of these high-risk features, endoscopic removal within 24 hours is generally

recommended (8). Although flexible endoscopy is the first-line modality for foreign body removal, with success rates exceeding 95%, surgical intervention may be required when the object is large, firmly embedded, or associated with a risk of perforation (8, 23). Multidisciplinary collaboration among gastroenterology, surgery, and otolaryngology teams is particularly valuable in managing such complex cases.

In this patient with schizophrenia, aberrant eating behavior led to the ingestion of a large chicken bone, while reduced pain sensitivity contributed to a significant delay in seeking medical care. Clinicians should maintain a high index of suspicion for foreign body ingestion in patients with psychiatric disorders who present with atypical gastrointestinal symptoms, unexplained fever with signs of inflammation, or respiratory complaints.

DISCLOSURE STATEMENT

The authors have no conflicts of interest to declare for this case report.

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