



Clinical profile and management of patients of foreign body ingestion

Dr. Sajad Nazir Malla

Government Medical College Srinagar

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ABSTRACT:

The ingestion of foreign bodies (FB) is a common clinical scenario, particularly in pediatric and geriatric populations and patients with mental health disorders. This study conducted in Department of General surgery, Government Medical College Srinagar examines the clinical profiles of patients who ingest foreign bodies, discusses the diagnostic approaches, and presents various management strategies based on the nature of the ingested material and patient risk factors. Special emphasis is placed on the role of endoscopic techniques, surgical intervention, and preventative strategies.

Introduction:

Foreign body (FB) ingestion is a frequent and potentially serious clinical condition that brings a wide range of patients to healthcare facilities (1). It is commonly observed in pediatric and geriatric populations, as well as in individuals with mental health disorders or developmental disabilities. Its ingestion can result in a variety of symptoms and complications depending on the type and location of the ingested object. Objects range from coins, toys, batteries, hairpins, marbles in children to food bones and dental prosthetics in adults (1-5). The urgency and approach to management are dictated by the characteristics of the foreign body, the patient's symptoms, and associated risk factors such as age and underlying medical conditions.

Epidemiologically, foreign body ingestion is most commonly seen in young children, with an estimated peak incidence occurring between the ages of six months and three years. Children in this age group are naturally curious and often explore their environment orally, increasing the risk of accidental ingestion. However, ingestion is also frequently reported among elderly individuals, often related to cognitive decline or poor swallowing reflexes, and among patients with psychiatric disorders or developmental impairments who may deliberately or inadvertently ingest foreign objects.

Clinical outcomes vary significantly based on the type of foreign body and its location within the gastrointestinal (GI) tract. Small, smooth objects may pass through the GI tract without incident, while larger or sharp objects, such as fish bones or batteries, can lead to severe complications such as mucosal laceration, obstruction, or even perforation. Lithium batteries, in particular, pose a severe risk of tissue injury due to their electrochemical properties, necessitating urgent intervention.

Given the range of possible outcomes, a clear understanding of the clinical profile, risk factors, diagnostic options, and management approaches for foreign body ingestion is essential for optimizing patient outcomes. Management often involves a combination of observation, endoscopic retrieval, and, in some cases, surgical intervention. This study reviews the clinical characteristics of patients who present in our emergency with foreign body ingestion, describes effective diagnostic strategies, and outlines current evidence-based management practices to minimize morbidity and mortality in affected individuals. By examining these factors, healthcare providers can better identify high-risk cases and intervene appropriately to prevent complications.

Methodology :

This study was conducted as a prospective observational study over 15 months, in the Department of General surgery, Government Medical College Srinagar, aiming to evaluate the clinical profile and management of patients presenting with foreign body (FB) ingestion. The study was carried out in the emergency and gastroenterology departments of a tertiary care hospital, providing a broad dataset on presentation patterns, management strategies, and outcomes associated with foreign body ingestion.

Study Design

This is a prospective observational study, carried over a period of 15 months. The study included all patients who presented to the hospital's emergency department with a confirmed or suspected case of foreign body ingestion.

Study Population

The study population consisted of all patients, regardless of age, who presented with foreign body ingestion during the study period. Patients were enrolled based on specific inclusion and exclusion criteria to ensure the accurate capture of relevant data.

Inclusion Criteria:

1. All patients with a confirmed or suspected case of foreign body ingestion presenting to the hospital.
2. Both symptomatic and asymptomatic cases where ingestion was confirmed through clinical examination or imaging.

Exclusion Criteria:

1. Patients with foreign body aspiration.

Data Collection

All these patients were admitted in our department and proper history and examination was performed. Psychiatric evaluation of these patients was also done. Data were systematically collected by attending healthcare providers using a standardized data collection form. This form included the following information:

1. **Demographic Data:** Age, gender, medical history, and any underlying psychiatric or developmental disorders.
2. **Clinical Presentation:** Symptoms at presentation (e.g., pain, dysphagia, vomiting, drooling, respiratory distress, bleeding per rectum).
3. **Characteristics of Ingested Foreign Body:** Type of object ingested (e.g., coin, bone, hairpins, battery), size, shape, and material.
4. **Diagnostic Evaluation:** Initial physical examination findings, imaging results (X-ray, CT scan, ultrasound), and any endoscopic findings.

Management Approach

1. Observation for asymptomatic cases or when foreign bodies were deemed low-risk for complications and passed spontaneously.
2. Endoscopic retrieval for symptomatic cases, high-risk foreign bodies (e.g., sharp or battery ingestion), or if the object was lodged in the esophagus.
3. Surgical intervention for cases where endoscopic retrieval was unsuccessful, or in cases of perforation or obstruction.

Outcome and Complications: Data on the success rate of retrieval methods, length of hospital stay, and any complications (e.g., perforation, obstruction, re-ingestion) were recorded for each patient.

Data Analysis Descriptive statistics were used to analyze demographic and clinical characteristics of the patients. Quantitative variables such as age, duration of symptoms, and hospital stay were summarized using mean and standard deviation, while categorical variables like type of foreign body, symptoms, and outcomes were summarized as frequencies and percentages.

Ethical Considerations

Approval for the study was obtained from the hospital's ethics committee, and informed consent was acquired from all patients or their guardians. Confidentiality was maintained by de-identifying patient information throughout data collection, analysis, and reporting. This methodology provides a structured approach for analyzing the clinical profile and management strategies for patients with foreign body ingestion, helping to inform best practices for both diagnostic and treatment approaches in similar settings.

OBSERVATION AND RESULTS

A total of 60 cases of aerodigestive foreign bodies were seen comprising of 46 females and 14 males in a ratio of 3.2:1. Age ranged from 5 years to 50 years. The group most at risk of aerodigestive foreign bodies are those aged between 5 years and 20 years. Common foreign bodies were coins, hairpin, marble and bones. Among 60 patients, 40(66%) patients presented symptomless and 20 (33%) patients were admitted with symptoms. Most common symptom was pain abdomen. All these patients were admitted in our department. Most of these patients were managed conservatively (33 patients). 18 patients were managed with upper GI endoscopy and 8 patients underwent lower GI endoscopy. 1 patient underwent diagnostic laparoscopy with foreign body retrieval.

Table 1: Gender distribution of patients

Gender (percentage)	Male	Female	Total
	14 (23.33)	46 (76.67)	60

Table 2: Foreign body distribution by age

Age (years)	Number of patients (percentage)
1-5	0
5-10	4
10-20	32
20-30	15
30-40	7

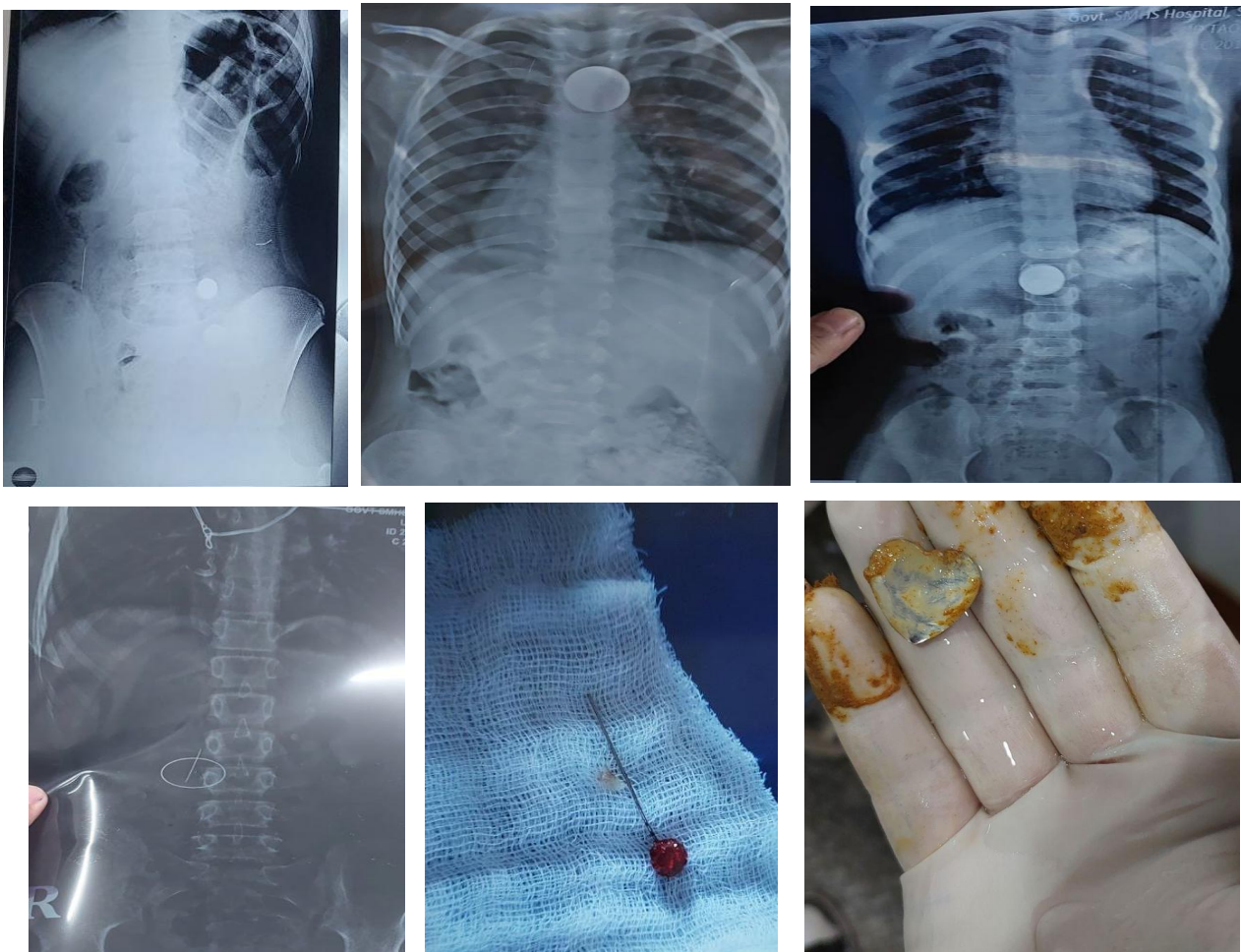
40-50	2
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Table 3: Procedures performed for retrieval of aerodigestive foreign bodies

Procedure	Frequency	Percentage (%)
Conservative (spontaneous passage)	33	55
Upper GI endoscopy	18	30
Lower GI endoscopy	8	13.33
Laparoscopy	1	1.67

Table 4: Nature of foreign bodies retrieved

Nature of foreign body	Frequency	Percentage (%)
Hairpin	32	53.3
Coins	22	36.67
Marbles	4	6.66
Bones	1	1.6
Batteries	1	1.6

INVESTIGATIONS (X-RAY ABDOMEN PELVIS)**Discussion :**

The ingestion of foreign bodies presents a different clinical scenario that requires a multidisciplinary approach for effective management. This study, conducted over 15 months, provides valuable insights into the clinical profiles of patients with foreign body ingestion, the diagnostic and therapeutic methods employed, and their respective outcomes. By exploring these elements, this discussion aims to contextualize findings within existing literature and highlight implications for future practice.

Clinical Profile and Demographics

Consistent with previous studies, this research confirmed that foreign body ingestion predominantly affects young children, with a secondary peak in older adults and individuals with psychiatric disorders. The high incidence in young children is likely due to their developmental propensity for exploring objects orally. Female were more affected than males.

Types of Foreign Bodies and Complications

This study found that coins, hairpin, batteries, food bones, and sharp objects were among the most frequently ingested items. While smooth, round objects such as coins often passed without complications, sharp or large objects, such as bones and batteries, posed greater risks. Batteries, in particular, were associated with high rates of mucosal injury and perforation due to their corrosive properties. These findings underscore the need for rapid intervention in cases involving high-risk foreign bodies, especially button batteries, which pose unique hazards through electrochemical burns and tissue necrosis.

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Authors

1. Dr. Waseem ul Rehman, Post Graduate Scholar, Department of Surgery Government Medical College, Srinagar (waseemurrahman100@gmail.com).
2. Dr. Sajad Nazir Malla (**corresponding author**), Post Graduate Scholar, Department of Surgery Government Medical College, Srinagar (irfannazir49786@gmail.com).
3. Dr. Asif Mehraj, Consultant, Department of Surgery
4. Dr. Sheikh Bisma Ramzan, Post Graduate Scholar, Government Medical College, Srinagar.
5. Dr. Maajid Kaleem, Post Graduate Scholar, Department of Radiology, Government Medical College, Srinagar