

Clinical Profile and Outcome of Gastrointestinal Foreign Body in Paediatric Age Group**Ahris Valavoor Fakruddin¹, Suhitha Gajanthody², Fahed Moideen³, Ashraf Ahmed^{4*}**¹*Assistant Professor, Department of General Surgery, Yenepoya Medical College, Mangalore, Karnataka, India*²*Assistant Professor, Department of Pediatric Surgery, Yenepoya Medical College, Mangalore, Karnataka, India*³*Junior Resident, Department of General Surgery, Yenepoya Medical College, Mangalore, Karnataka, India*⁴*Assistant Professor, Department of Pediatric Surgery, Yenepoya Medical College, Mangalore, Karnataka, India***Received: 15-06-2021 / Revised: 20-07-2021 / Accepted: 31-08-2021****Abstract**

Background: Foreign body (FB) ingestion is a commonly encountered problem in paediatric age group. The tendency to explore objects especially from six month to six years of age make this age group more susceptible to gastro-intestinal foreign body. The foreign body ingestion may be associated with serious complications based on nature of the ingested object. **Objective:** To study clinical profile and outcome of gastrointestinal foreign body in paediatric age group. **Materials and Methods:** In this retrospective study a total of 20 pediatric patients were included in the study who presented with foreign body ingestion (International Statistical Classification of Diseases and Related Health Problems; ICD-10 codes T18) treated in Yenepoya Medical College Hospital from January 2019 to October 2020. Patients attending the paediatric surgery department were included. Inpatient and outpatient department data was collected. Characteristic data, associated conditions, presentation of patient, anatomic region, type of foreign body, management, complications, and outcome data was evaluated. **Results:** Majority of the foreign objects those were ingested included safety pins, coins and magnets. Most of the patients presented on first day of ingestion. 90% of the patients did not require any interventions. The common site of lodgment of foreign body at time of presentation was in the stomach. 70% of the patients did not have any symptoms at time of presentation. 30% had presented with stomach pain. Majority of patients had passage of foreign body within a week of presentation. **Conclusion:** Small inanimate objects which have high propensity to be ingested by children should be kept away at places which cannot be accessed by the children. Regular follow up, x-ray examination, stool examination should be done till the passage of foreign body.

Key words: Foreign Body Ingestion, Pediatric Emergencies.

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Introduction

Foreign body ingestion in children is very common, and most of these emergencies occur in children between 0.5 to 3 years of age. Up to, 80%–90% of foreign bodies in the gastrointestinal tract are passed spontaneously without complications but around 10% to 20% are removed using endoscope and 1% may require open surgery secondary to complications.[1] Although most FBs in the gastrointestinal tract pass spontaneously without complications, endoscopic or surgical removal may be required in a few children. Thus, FB ingestion presents a significant clinical difficulty in pediatric gastroenterological practice. Parameters that need to be considered regarding the timing of endoscopic removal of ingested FBs in children are the children's age or body weight, the clinical presentation, time lapse since ingestion, time of last meal, type as well as size and shape of the FB, and its current location in the gastrointestinal tract.[2] Adverse events resulting from FBI range from nonexistent or minor symptoms to moderate injury and rarely may be fatal.[3]

The common objects ingested by children include magnets [4], button batteries, safety pins [5], coins [6] etc.

FB ingestion in children may lead to significant morbidity in patients in addition to considerable family anxiety. The morbidity for FB ingestion is dependent on the type of FB ingested. Disc batteries are notorious for esophageal perforation and tracheoesophageal fistula formation leading to significant morbidity and mortality.[7,8] Esophageal perforation was reported in 1% of children with disc batteries in the esophagus.[9] In Turkey, where hairpins were the most common FB ingested, surgery was indicated in 4% of children.[10]

In this study we evaluated clinical profile and outcome of gastrointestinal foreign body in paediatric age group.

Materials and methods

In this retrospective study a total of 20 pediatric patients were included in the study who presented with foreign body ingestion (International Statistical Classification of Diseases and Related Health Problems; ICD-10 codes T18) treated in Yenepoya Medical College Hospital from January 2019 to October 2020. Patients attending the paediatric surgery department were included. Inpatient and outpatient department data was collected. Characteristic data, associated conditions, presentation of patient, anatomic region, type of foreign body, management, complications, and outcome data was evaluated.

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Due informed consent was obtained from parents or guardians after explaining them the purpose of the study. This was done in their native language.

Source of data: Patients presented with complaints of foreign body ingestion will be obtained from the Medical Records Department

Inclusion Criteria

All patients who presented in the pediatric surgery department with complaints of foreign body ingestion will be included.

Exclusion Criteria

Patients with incomplete electronic data, toxic agent ingestion, foreign body not in the GI tract and patients who were more than 15 years old were excluded from the study.

Results

The minimum age of presentation was 6 months whereas maximum age of subject was 11 years. The median age of subjects was 4 years. Males constituted 55% of the participants whereas females were 45%. Majority of subjects presented within 6 hours of foreign body ingestion. Majority of subjects had passage within 7th day (85%). 2 subjects (10%) needed endoscopic intervention and surgery. Majority of ingested foreign body included safety pins and coins in 55% and 25% of participants, respectively. 70% of the patients did not have any symptoms at time of presentation. 30% had presented with stomach pain. 90% of the patients did not require any interventions.

Table 1: Age and demographics

Minimum age	6 months
Maximum age	11 years
Median age	4 years
Males	11
Females	9

Table 2: Time of presentation

Time to presentation	No of subjects	Percentage
Within 6 hours of ingestion	12	60%
6 hours to 24 hours of ingestion	6	30%
More than 1 day	2	10%

Table 3: Time to passage

Time to passage	No of subjects	Percentage
By 3rd day	11	55%
By 7th day	6	30%
More than 7 days	1	5%
Laparotomy and removal	1	5%
Endoscopically removed	1	5%

Table 4: Type of foreign body

Type of foreign body	No of subjects	Percentage
Safety pin	11	55%
Coin	5	25%
Magnet	2	10%
Steel clip	1	5%
Ring	1	5%

Table 5: Symptoms

Presenting complaint	No of subjects	Percentage
Stomach pain	6	30%
Asymptomatic	14	70%

Table 6: Site of foreign body at presentation

Site of lodgment	No of subjects	Percentage
Oesophagus	2	10%
Stomach	13	65%
Small bowel	3	15%
Large bowel	2	10%

Table 7: Treatment course

Treatment course	No of subjects	Percentage
Observation	18	90%
Endoscopic removal	1	5%
Diagnostic laparoscopy +Laparotomy+ Gastrotomy	1	5%

Discussion

In this study we evaluated clinical profile and outcome of gastrointestinal foreign body in paediatric age group. Majority of the foreign objects those were ingested included safety pins, coins and

magnets. Most of the patients presented on first day of ingestion. 90% of the patients did not require any interventions. The common site of lodgment of foreign body at time of presentation was in the stomach. 70% of the patients did not have any symptoms at time of

presentation. 30% had presented with stomach pain. Majority of patients had passage of foreign body within a week of presentation. Arana A et al.[11] during a 15-year period study, recorded 325 consecutive paediatric cases of accidental ingestion of foreign bodies. The foreign bodies that had to be removed were, in decreasing order of frequency: coins, toy parts, jewels, batteries, sharp materials such as needles and pins, fish and chicken bones, and "large" amounts of food. Only 54% of the patients had transient symptoms at the moment of ingestion, such as retrosternal pain, cyanosis and dysphagia. Orsagh-Yentis D et al.[12] noted that overall, boys more frequently ingested foreign bodies (52.9%), as did children 1 year of age (21.3%). Most children were able to be discharged after their suspected ingestion (89.7%). Among the types of objects ingested, coins were the most frequent (61.7%). Toys (10.3%), jewelry (7.0%), and batteries (6.8%) followed thereafter. Balekuduru A et al.[13] evaluated 120 pediatric patients with foreign body ingestion. Most common FB was coin (69%). The retrieved FBs were 83 coins, 13 batteries, 5 pins, 4 clips, 2 each of anklets, keys, marbles, and seeds, one each of spoon, blade, spanner, peanut, toe ring, and a pencil. One had trichobezoar. Esophagus was the MC site of location of FB (85/120). FB removal was successful by flexible endoscopy in 97.1%. Four (0.03%) cases were referred for rigid endoscopic/surgical removal by otolaryngologists/pediatric surgeon. They noted Endoscopic removal of FB is a safe procedure with excellent outcomes in a specialized gastroenterology unit. Limitations of the study included small sample size and lack of cost estimation due to foreign body ingestion as many of the patients present to our centre from lower to middle socio-economic strata of the society.

Conclusion

Small inanimate objects which have high propensity to be ingested by children should be kept away at places which cannot be accessed by the children. Children should be constantly advised against consuming inanimate objects and should be under adult supervision while playing with objects which can be potentially ingested. Regular follow up, x-ray examination, stool examination should be done till the passage of foreign body. Due medical care should be taken at the earliest as significant number of patients might need some intervention such as endoscopic removal for foreign bodies.

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