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SURGICAL INTERVENTION IN FOREIGN BODY INGESTION IN CHILDREN

General Surgery

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ABSTRACT

BACKGROUND: Foreign body ingestion in children is the most common problem, but it seldom requires surgical intervention. The type of foreign body varies according to feeding habits and socio-cultural features of communities. Though asymptomatic, if not treated and acted timely, can lead to untoward events. **AIM OF THE STUDY:** To study the characteristics of foreign body ingestion in children. To evaluate and manage cases of foreign body ingestion. To identify those cases that may need surgical intervention. **METHODS:** Children with foreign body ingestion that may need surgical intervention admitted to the Department of General Surgery, ASRAM Hospital from September 2018 to September 2019, are included in the study. This study was done on 27 pediatric patients, from which four patients underwent surgical intervention. History of the case is documented after physical examination x-ray erect abdomen is done in all cases. Cases are kept under observation and followed by serial x-rays. Those cases that needed surgical intervention are posted for surgery after consent and pre-operative evaluation. Postoperatively children are managed and discharged. **RESULTS:** The highest age is 12 years, and the lowest in six months. The most common object is an open safety pin, and the least common and rare was betel nut ingestion. The duration of ingestion was highest in coin, and it was of 1 year. Twenty-five cases were asymptomatic, and only 2 cases had pain abdomen.

KEYWORDS

Surgical intervention, Foreign body, Children

INTRODUCTION:

Foreign body ingestion in children is the most common problem, but it seldom requires surgical intervention.

There is a greattendency for children between the ages of six months to seven years of age to have problems after placing objects in their mouths,

These events can cause serious complications depending on the type of object they have ingested, like a fishbone, coins, batteries, household items.

The most common foreign body ingestion in children is a coin.

However, in some places, batteries were commonly swallowed. Ingested foreign bodies can lodge anywhere along the gastrointestinal tract such as the proximal esophagus, distal esophagus, proximal duodenum.

Depending on the foreign body ingested and the lodging position in the gastrointestinal tract, the serious complication may occur.

The type of foreign body varies according to feeding habits and socio-cultural features of communities.

Though asymptomatic, if not treated and acted timely, can lead to untoward events.

AIM OF STUDY:

- To, study the characteristics of foreign body ingestion in children.
- To evaluate and manage cases of foreign body ingestion.
- To identify those cases that may need surgical intervention.

MATERIALS AND METHODS:

Children with foreign body ingestion that may need surgical intervention admitted in the department of General surgery, ASRAM Hospital from September 2018 to September 2019, are included in the study.

The history of the case is documented. After the physical examination, an erect x-ray abdomen is done in all cases. Cases are kept under observation and followed by serial x-rays.

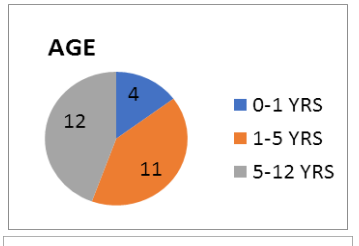
Those cases that needed surgical intervention are posted for surgery after consent and pre-operative evaluation. Postoperatively children are managed and discharged.

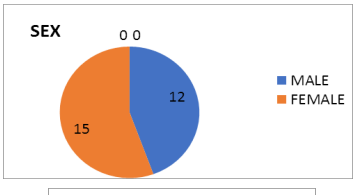
INCLUSION CRITERIA: Children between 6 months to 16 years of age.

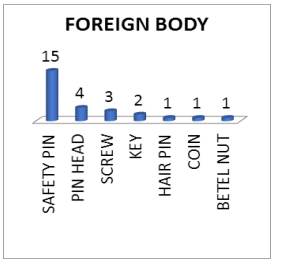
EXCLUSION CRITERIA: Above 16 years of age.

HISTORY:

Of 27 cases, surgical intervention was done in 4 cases.
Case 1: Open safety pin in the transverse colon.
Case 2: Hair pin in duodenum.
Case 3: Betel nut at ileocaecal junction.
Case 4: Open safety pin in the small bowel.







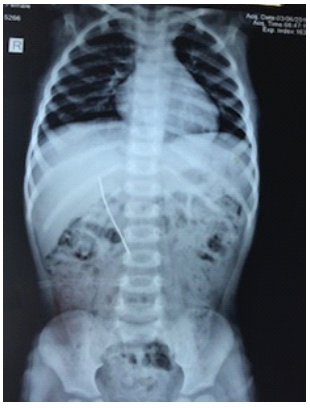


Figure shows - safety Pin

Figure shows – safety Pin

Figure shows - Coin

DISCUSSION:

Long and short blunt objects:

Ingestion of large or long objects is a special issue of concern in the management of patients Foreign body ingestion lodged in the esophagus requires removal within 24 hours.

If the diameter of the object is >2.5cm, however, it is unlikely to pass through the pylorus in younger children.

Objects greater than six cm in length are unlikely to pass through the duodenum. If they pass through the duodenum, they are unlikely to pass through the ileocaecal valve.

In adults, 80% of objects longer than 6 cm could not pass the pylorus by 48 hours after presentation.

For these reasons, large or long objects, even though they are blunt, should be removed from the stomach.

Endoscopically removed if longer than 6cm and proximal to the first portion of the duodenum if wider than 2.5cm.

If objects remain distal to the duodenum for more than one week surgically, it should be removed hours.

Coins are the most commonly ingested objects among children.

Factors that influence the spontaneous passage of foreign body include position in the esophagus, age of the child, and size of the coin.

Generally, spontaneous clearance of coins occurs in 30% of patients. Depending on the size of the coin and age of the patient, coins may clear the distal esophagus before endoscopic removal in sixty-five percent of patients.

Coins greater than 2.4 cm may likely to be impacted in younger children.

Initial management of suspected coin ingestion include serial radiographs to identify the location and size of the coin.

Besides, lateral films are extremely helpful in differentiating the "step-off.''

Between the positive and negative poles of a BB that will discriminate it from a coin.

Careful attention should be placed on the coin's edges to exclude the double halo sign of a BB, which may easily be mistaken for a coin.

Endoscopically removed if they remain longer than 12 to 24 hours in the esophagus and 3 to 4 weeks in the stomach in an asymptomatic patient.

Non endoscopic methods of coin removal have also been successfully used.

Sharp and sharp pointed objects:

Sharp objects were most commonly ingested foreign bodies at the beginning of 20 the century.

Safety pin and nail ingestions, 13% and 12%, respectively, accounted for the bulk of the sharp object ingestions. Incidence rates between 10% and 12% were reported from European and Asian Centers.

Depending on cultural and religious factors, different types of sharp foreign bodies are ingested fish bones are most frequently encountered in Asian countries where it is customary to introduce fish into the diet at a young age.

Pin ingestions are higher in ethnic groups that use pins to fasten clothing or religious or cultural beliefs.

Toothpick ingestions are more prevalent among older age groups.

Many sharp objects follow 'advancing points puncture, trailing do not" and often pass the GI tract uneventfully.

Before the advent of modern surgical and endoscopic techniques, however, morbidity and mortality for sharp objects' ingestion were reported as high as 30% and 25%, respectively.

A clear history or a suspicion of an ingested sharp foreign body necessitates urgent radiographic evaluation.

The positive predictive value of radiographs is 100% for metallic objects but is much lower for objects made of glass (43%), fishbone (26%), and wood, which is completely radiolucent.

If the x-ray is negative, there is high suspicion for a foreign body to proceed to endoscopic evaluation.

Alternatively, computed tomography scan, ultrasounds, magnetic resonance imaging and upper GI barium swallow have been used to identify radiolucent foreign bodies but may delay definitive treatment, especially if contrast is used.

In the esophagus, they constitute a medical emergency, and endoscopic

removal should be attempted in the stomach or duodenum. They require urgent endoscopic removal should still follow a radiologic examination with negative findings because many sharp pointed objects are not radiologically visible.

Surgery is indicated if the sharp foreign body beyond the duodenum fails to progress radiologically for 3consecutive days.

Magnets:

Ingestion of magnets is by no means a new occurrence in children. Cautions about the increased risk of injury with the ingestion of multiple magnets have been in existence for manyyears.

There is apotential risk for formation of enter enteric fistula between magnets in adjacent loops of bowel with associated perforation, peritonitis, and bowel ischemia/necrosis.

However, increased morbidity and mortality from these ingestions has been recognized among gastroenterologists and emergency personnel. Magnets within endoscopic reach are a reason for urgent endoscopy. And removal.

There is a clear consensus that urgent removal of multiple magnet ingestions is indicated, even in the asymptomatic patient, when the location is amenable to endoscopic retrieval by eitheresophago gastroduodenoscopy or colonoscopy.

The type of retrieval device used depends on the size and shape of the magnet ingested. However, retrieval nets are often the best choice for small, round magnet failure of magnets to move through the lumen on sequential radiographs. A location beyond endoscopic reach should prompt surgical evaluation.

Radiographic findings suggesting bowel entrapment or obstruction or perforation should prompt emergent surgical evaluation.

Disc batteries:

Although disk-shaped batteries have been used initially, battery ingestion leads to a fairly benign course in the gastrointestinal tract. Degradation of the battery's integrity may lead to caustic injury or increased mercury levels, leading to severe complications in the gastrointestinal tract.

The dramatic increase in morbidity and mortality is linked to increased diameter and change to lithium cells.

Increase in size of battery greater than 2cm leading to an increased chance of perforation, impaction of the battery in the gastrointestinal tract, and serious complications.

Emergent endoscopic removal is indicated for a suspected disk battery in the esophagus because proloned stay in the esophagus leads to perforation and further serious complications leading to mediastinitis. Exploratory laparotomy with removal should be considered if it appears that the passage of the battery in the bowel has been arrested.

CONCLUSION:

Despite the common occurrence of foreign body ingestion in children, the majority pass without surgical intervention.

Uneventful passage depends on the shape, size, and characteristics of the foreign body.

The mode of management in children should be selected according to the patient's condition, location, and type of ingested foreign body. The timely intervention of appropriate treatment is needed in children with foreign body ingestion to avoid untowardly events.

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