

Original article:

Foreign body injection in children: clinical feature, management and outcome study in western India

Dr S.Lakhwani¹, *Dr B.Patel²

Assistant Professor, Department of Pediatrics, RKDF Medical college Bhopal

Assistant Professor, Department of Pediatrics, AIIMS Bhopal*

Corresponding author *

Abstract:

Ingestion of a foreign body is a common clinical scenario among the pediatric population. Foreign body aspiration (FBA) in the paediatric age group is not only associated with considerable morbidity and mortality but also psychological distress for both the children as well as the parents.

Introduction:

The majority of foreign body ingestions occur in the pediatric population, with a peak incidence between the ages of 12 months and 3 years.¹ Foreign bodies (FBs) in the digestive tract are an important cause of morbidity and mortality in paediatric age group, and pose diagnostic and therapeutic challenges.^{2,3[1,2]} (a17) a peak incidence in children between 1 and 3 years.^{3,4[2,3]} (a17) Fortunately, most foreign bodies that reach the gastrointestinal tract pass spontaneously. Only 10 to 20 percent require endoscopic removal, and less than 1 percent require surgical intervention^{5,6,7} [1,5,9]. (a20)

Common foreign bodies — Commonly ingested objects include coins, button batteries, toys, toy parts, magnets, safety pins, screws, marbles, bones, and food boluses.^{7,8,9,10,11} [2,7,9,12,13].(a20)

Symptoms can vary considerably according to the site of the foreign body in the airways. When the foreign body is trapped in the larynx or trachea, respiratory distress or stridor are immediately suggestive of the diagnosis. However, in the great majority of cases (75 to 94% of cases), the foreign body migrates to the bronchi and clinical signs are much less constant.^{12,13,14} [4,6,7].(a5)

removal techniques will vary according to the composition of the foreign body. Animals (for example, ants, moths, flies, etc) are the most common foreign bodies in the adult ear and often require immediate attention as they cause pain and agitation in the patient.^{15,9} (a19) They should generally be killed before attempted removal, which then becomes less urgent. Vegetable matter (for example, paper, beans, peas, and cotton buds) tend not only to cause an inflammatory reaction, but also to swell in moist conditions resulting in further impaction and difficulty in removal. The most commonly inserted mineral foreign bodies include beads, rubber erasers, and small toy parts.^{16,10} (a19) Penetration of orbit by foreign body (FB) is a relatively rare type of injury. FBs may be organic or inorganic, and may remain asymptomatic in orbit or may lead to serious morbidities such as cellulitis, optic neuropathy and ocular dismotility.^{17[1]} (a2) Over recent years, as a result of prevention campaigns and regulations concerning products designed for children, the infantile mortality rate from asphyxiation has decreased significantly.¹⁸ [3].(a5)

Material & methods:

This was a retrospective study done at a tertiary care hospital in Western part of India . All the children admitted or outpatient (whose records were available) who presented with complaint of foreign body ingestion or aspiration in last two years were included. Type of foreign body and area/site of lodgement of foreign body along with demographic profiling, clinical features, investigations done, intervention required and outcome was studied.

Result:

TABLE NO 1 :-Clinical profile of foreign body ingestion/ aspiration

CLINICAL SYMPTOM	N=40	%
Cough	18	45
Abdominal pain	15	37.5
Foreign body sensation	20	50
Hematemesis	1	2.5
Respiratory discomfort	12	30
Cyanosis	4	10
Wheezing	12	30
Fever	4	10
Vomiting	23	57.5
Chest pain	1	2.5
Stridor	1	2.5
Hoarseness	4	10
Halitosis	1	2.5
Asymptomatic	18	45
Pulmonary examination	N=15	%
Asymmetry in breath sounds	12	80
Normal	1	6.66
Wheezing	8	53.3
Asymmetric breath sound with wheezing	8	53.3

Among the 40 patients, there was a predominance of males (28)

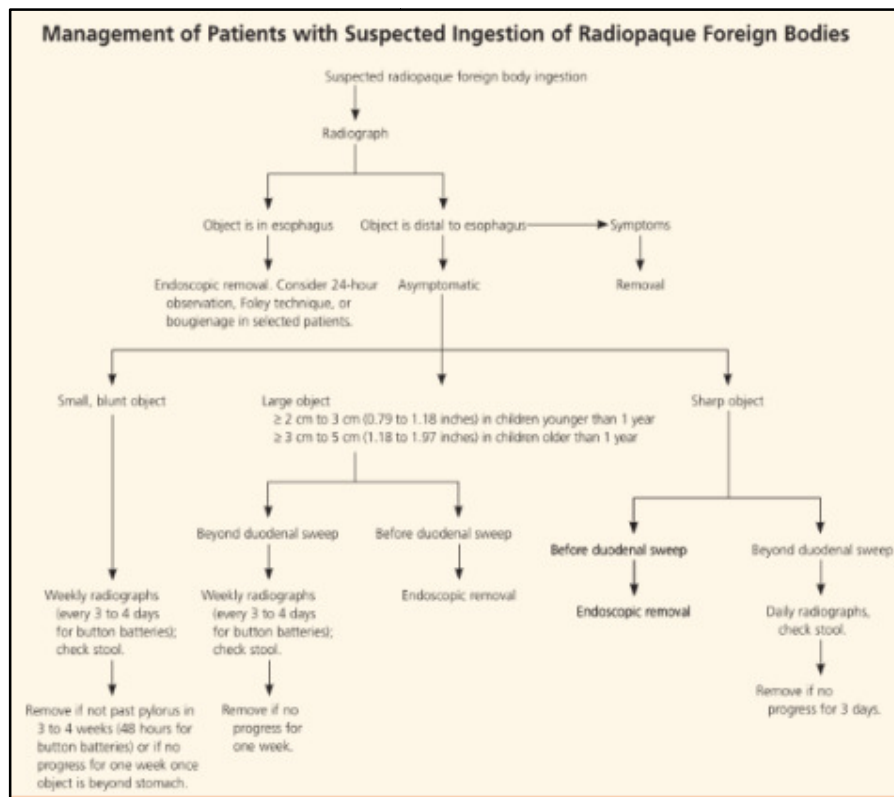
TABLE NO 2:

FOREIGN BODY	N=40	%
Bean	2	5
Peanut	4	10
Plastic pen cap	1	2.5
Earring	1	2.5
Fruit seed	2	5

Stone	3	7.5
Safety Pin	1	2.5
Plastic toy	1	2.5
Hair pin	1	2.5
Metal piece	1	2.5
Metallic pen tip	1	2.5
Nail,screw	1	2.5
Hair clip	1	2.5
Earring back	1	2.5
Coins	4	10
batteries	3	7.5
buttons	2	5
Wooden piece	1	2.5
wheat	3	7.5
chana	1	2.5
Slate pen	4	10
Steel ring	1	2.5

MANAGEMENT:

Management of Ingested Foreign Bodies Suggested approaches for identification and management of ingested foreign bodies are given in Figures 1^{19,20,21} and Figures 2^{19,21,22,23} 2,4 and 2.1,3,4,6(a11)



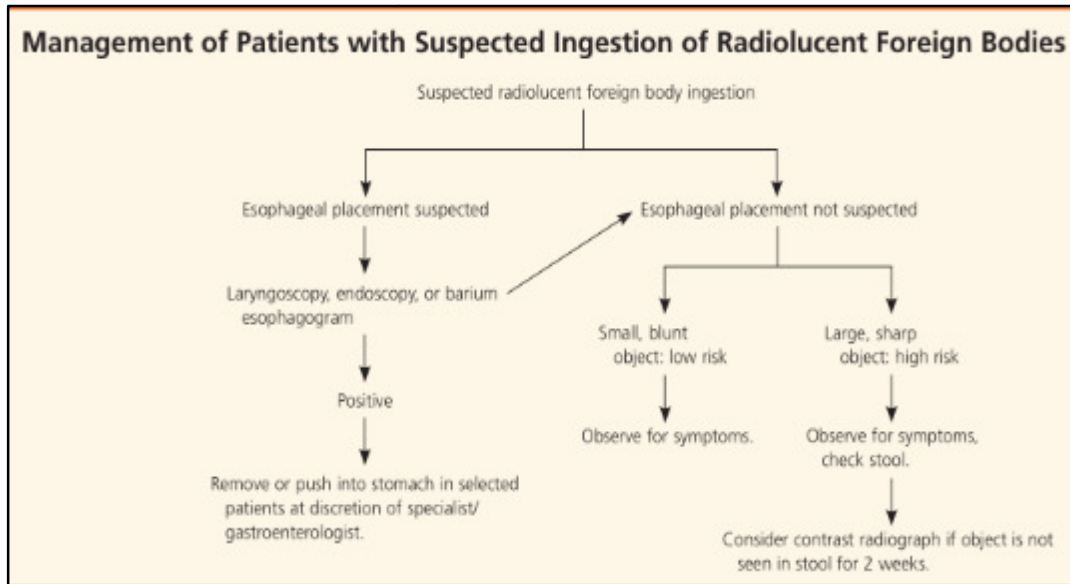


Figure : Distribution of patients according to the time at presentation to the hospital

Discussion:

The fact that the highest prevalence of FB injuries is reported for children between 0 and 3 years of age depends primarily on the fact that young children explore objects using their mouth, are not able to distinguish edible objects from non-edible ones, their teeth are physiologically lacking (they have incisors to tear food, but not cuspids, with consequently difficulties in reducing food in a smooth bolus) and have poor swallowing coordination (compared to older children and adults). Additionally, FB injuries in pre-schoolers can be related to distractions (e.g. eating and playing at the same time)²⁴ 1.(a13)

Delayed diagnosis is associated with increased incidence of complications.²⁵⁻²⁸ 6-9 A complication rate of 64% was reported to occur if diagnosis was made within 4-7 days and 95% if it was delayed for more than 30 days from the aspirating event.²⁷ 8 Early diagnosis associated with prompt successful treatment is therefore mandatory for the management of foreign body inhalation(a12)

Foreign body ingestions are a public health issue due to their high frequency, especially in children and older patients. Foreign body ingestions are a public health issue due to their high frequency, especially in children and older patients.²⁹ (6)A3

Gender distribution showed slightly male predominance. These findings are consistent with other reports such as the ones of Adhikari and other authors regarding age and gender distribution. These findings are consistent with other reports such as the ones of Adhikari and other authors regarding age and gender distribution [7, 8].a3^{30,31}

Our study included a great variety of swallowed objects, ranging from coins to magnets and unidentified plastic objects. We found that the most frequently ingested objects were coins, which were reported in 26.23% of the patients, with similar results being reported by Rybojad et al. ³⁰[12].

Medical therapy for objects that cannot be reached with endoscopic devices depends on the presentation type and complications; prokinetic agents and laxatives may be an alternate approach, with a 100% success rate before any surgical intervention ²⁹[6] Early recognition of foreign body ingestions and appropriate management can significantly reduce morbidity due to complications. We agree with Palta et al.'s report that an increased

awareness of the parents and people involved in the institutional care settings (nurs-eries, kindergartens, centers for children with neuromotor disabilities, and child psychiatry services) along with an active surveillance during daily activities is essential in order to establish protective rules that help to keep hazardous materials out of the children's reach [21].³¹

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