

## ORIGINAL RESEARCH

**Case Series Of Oesophageal Foreign Body With A Rare Case Of Oesophageal Foreign Body Impaction In Previously Operated Type III Oesophageal Atresia With TEF****<sup>1</sup>Dr. Udit Kumar, <sup>2</sup>Dr. Anjali Jalan, <sup>3</sup>Dr. A . K Roy, <sup>4</sup>Dr. Mohd Ubais**<sup>1,2</sup>Department of General Surgery, <sup>3</sup>Professor, MCH Paediatric Surgeon, <sup>4</sup>Department of Paediatric, Era's Lucknow Medical College , Lucknow, India**Corresponding Author**

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**Abstract**

**Background:** Foreign body (FB) ingestion in children is very common, and most events occur in children between 6 months and 3 years of age. The present study was conducted to assess cases of oesophageal foreign body with arare case of oesophageal foreign body impaction in previously operated type III oesophageal atresia with TEF.

**Materials & Methods:** 20 Pediatric patients of oesophageal foreign body ingestion attending Pediatric Surgery OPD, ELMCH of both genders underwent complete history and examination. Radiological investigation such as chest x-ray PA and lateral view was done. Patient were then planned for foreign body removal.

**Results:** A total of 20 pediatric patients (12 boys, 8 girls) were recruited with the history or suspicion of foreign body ingestion during the study period of 6 months. The majority of patients belonged to 1-2 years of age ie 9 patients(45%). The youngest one was 9 months and the oldest was 6 years of age. The most common oesophageal foreign body removed were coin in 12 patients (60%) other foreign bodies were ring in 2 patients, button battery in 1 patient, organic food particle in 2 patients, safety pin in 1 patient and collapsable hollow plastic ball was found impacted in Previously Operated Type III Oesophageal Atresia With TEF. The difference was significant ( $P < 0.05$ ). The most common presentation was asymptomatic in 11 patients (55%) followed by dysphagia in 4 patients(20%), sore throat and pain in 2 patients each (10%), nausea in 1 patient(5%). The difference was significant ( $P < 0.05$ ). Site of impaction was upper oesophagus in 17, mid- oesophagus in 2 and lower oesophagus sphincter in 1 case. The difference was significant ( $P < 0.05$ ).

**Conclusion:** Children with oesophageal foreign body ingestion can be effectively treated, it is necessary to carefully consider the type of ingested, the children's age, expected complications, and emergency situations. Usual site of oesophageal foreign body is at upper end of oesophagus. One should be careful to remove a foreign body lodged at previous oesophageal anastomosis.

**Key words:** Children, Coin, oesophageal foreign body

**Introduction**

Foreign body (FB) ingestion in children is very common, and most events occur in children between 6 months and 3 years of age. Notably 80%–90% of foreign bodies in the

gastrointestinal (GI) tract are passed spontaneously without complications, 10%–20% are removed endoscopically, and 1% require open surgery secondary to complications.<sup>1</sup>

Most swallowed foreign bodies will harmlessly pass through the GI tract, but some will lead to health problems if they become lodged, traumatize the mucosa e.g. sharp object or cause caustic burn injury eg. button battery.<sup>2</sup>Coins are the most commonly ingested FB in children. Factors influencing the spontaneous passage are its location in the oesophagus, age of the child, and the size of the coin. Usually, the rate of spontaneous passage is approximately 30%.Button batteries can cause severe damage secondary to local hydrolysis and the action of hydroxide on the mucosa, caustic injury secondary to a high pH and minor electrical burns secondary to lithium.<sup>3</sup>

Sharp or pointed foreign bodies eg safety pins, associated with high morbidity and mortality.Delayed diagnosis and management increase the risk of serious complications like oesophageal ulceration and/ or perforation, trachea-fistula.Large or long foreign bodies Ingestion of large or long FBs is an issue of special concern.<sup>4</sup>These FBs must be removed within 24 hours because long (those >6 cm in length) or large FBs are unlikely to pass through the duodenum and the ileocecal valve.The aim of this study was to manage esophageal foreign body in pediatric patients with a rare case of Oesophageal foreign body impaction in previously operated type III esophageal atresia with Tracheo-esophageal fistula.<sup>5</sup>The present study was conducted to assess cases of oesophageal foreign body with arare case of oesophageal foreign body impaction in previously operated type III oesophageal atresia with TEF.

### Materials & Methods

The present study comprised of 20 Pediatric patients of oesophageal foreign body ingestion attending Pediatric Surgery OPD, ELMCHof both genders. Parents gave their written consent for the participation in the study.

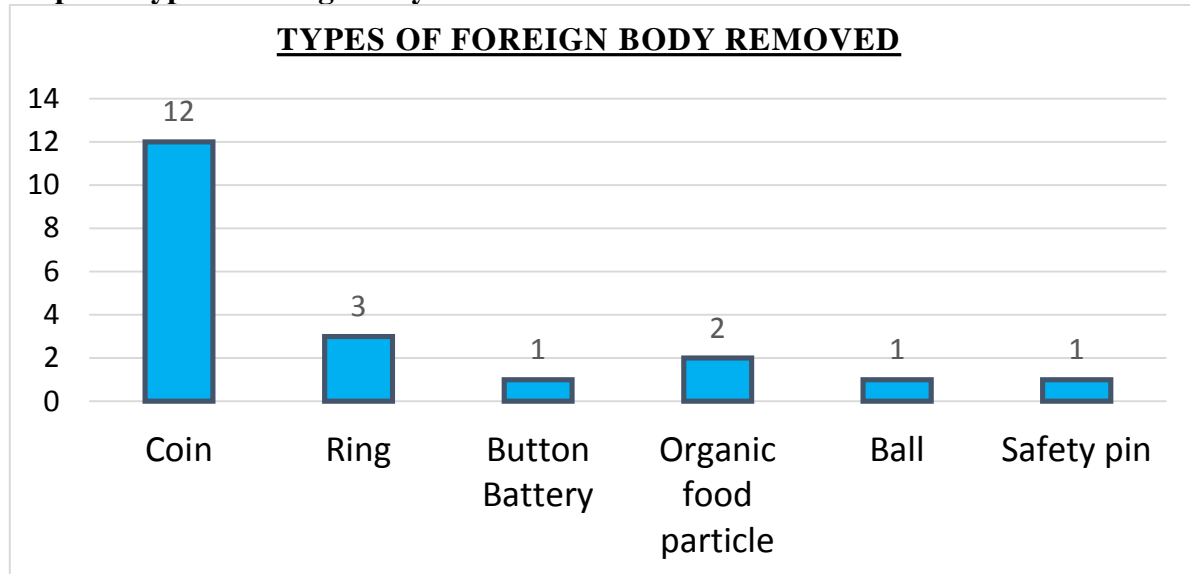
Data such as name, age, gender etc. was recorded. All patients underwent complete history and examination. Radiological investigation such as chest x-ray PA and lateral view was done. Patient were then planned for foreign body removal. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

### Results

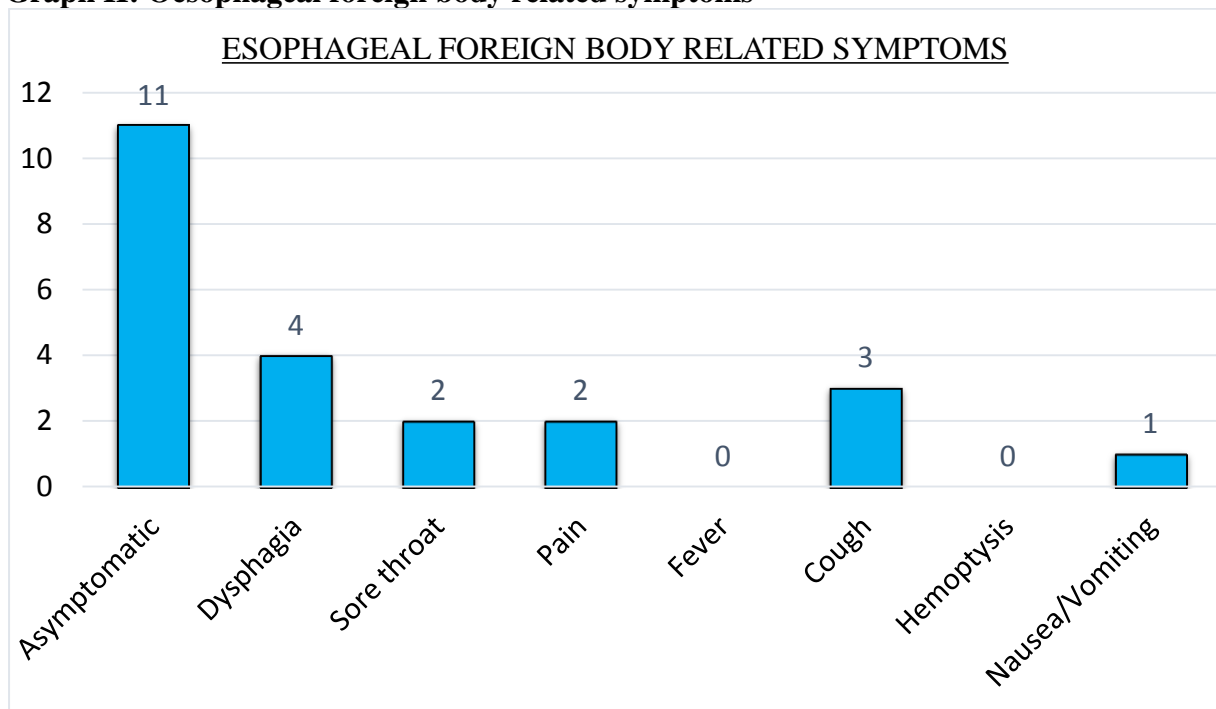
**Table I: Distribution of patients**

Age Group	Males	Females	Total (n=20)
<12 months	6	5	4 (20%)
1-2 years	3	1	9 (45%)
2-3 years	1	1	4 (20%)
3-4 years	2	0	2 (10%)
>4 years	0	1	1 (5%)

Table I shows that a total of 20 pediatric patients (12 boys, 8 girls) were recruited with the history or suspicion of foreign body ingestion during the study period of 6 months.The majority of patients belonged to 1-2 years of age ie 9 patients(45%).The youngest one was 9 months and the oldest was 6 years of age.

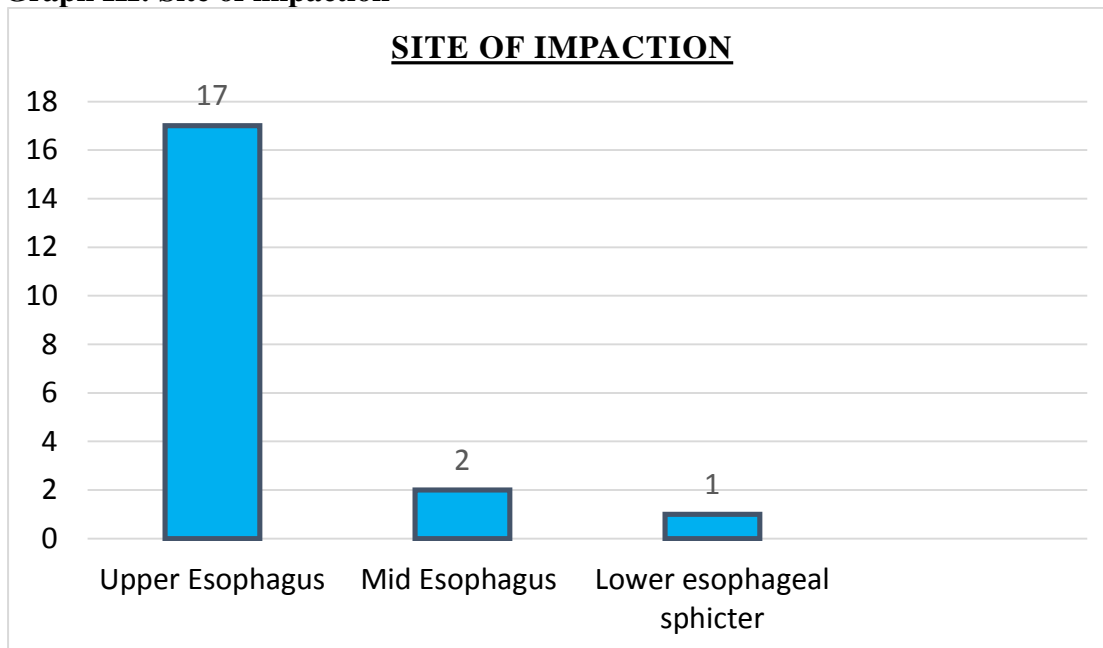
**Graph I: Types of foreign body removed**

Graph I shows that most common oesophageal foreign body removed were coin in 12 patients (60%) other foreign bodies were ring in 3 patients, button battery in 1 patient, organic food particle in 2 patients, safety pin in 1 patient and collapsible hollow plastic ball was found impacted in Previously Operated Type III Oesophageal Atresia With TEF. The difference was significant ( $P < 0.05$ ).

**Graph II: Oesophageal foreign body related symptoms**

Graph II shows that the most common presentation was asymptomatic in 11 patients (55%) followed by dysphagia in 4 patients (20%), sore throat and pain in 2 patients each (10%), nausea in 1 patient (5%). The difference was significant ( $P < 0.05$ ).

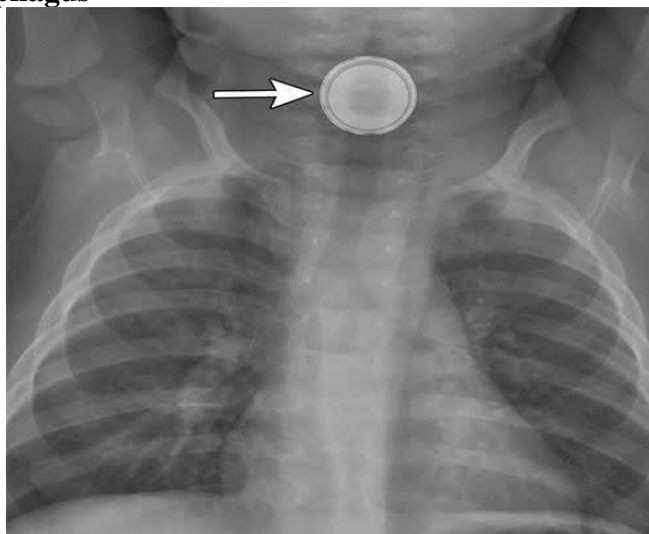
**Graph III: Site of impaction**



Graph III shows that site of impaction was upper oesophagus in 17, mid- oesophagus in 2 and lower oesophagus sphincter in 1 case. The difference was significant ( $P < 0.05$ ).

**Fig-I Intra-operative Picture of removal of Esophageal Foreign Body (collapsible hollow ball ) Impacted In Previously Operated Type III Esophageal Atresia With TEF**



**Fig- II Coin in oesophagus****Discussion**

Foreign-body ingestion is a common emergency. The diagnosis and management of foreign body ingestion in most children are a challenge because of the difficulty in communication and examination, when compared to adults.<sup>6</sup> Treatment of an oesophageal foreign body (FB) impaction is an urgent situation requiring interdisciplinary cooperation.<sup>7</sup> Approximate 80% to 90% of oesophageal FBs spontaneously pass and do not need treatment, while an estimated 10% to 20% are removed endoscopically and less than 1% require surgery. An impacted esophageal FB can cause severe complications if not removed in a timely manner. FB removal by surgery and endoscopy are standard.<sup>8</sup> The choice of an optimal treatment should avoid overtreatment (surgical removal when endoscopy is considered to be effective) and undertreatment (enforced endoscopic removal when surgery is a better choice). The optimal treatment should benefit the patients without adding financial burden.<sup>9</sup> The present study was conducted to assess cases of oesophageal foreign body with a rare case of oesophageal foreign body impaction in previously operated type III oesophageal atresia with TEF.

In our study we found esophageal foreign body ingestion were most common in 1-2 years of age group and the most common foreign body removed were coins. The most common presentation was asymptomatic followed by dysphagia and most common site for oesophageal foreign body impaction were upper oesophagus. Al-Quadach<sup>10</sup> observed that foreign body was removed in 93.8% and only 5.4% pushed down to the stomach. Sometimes an FB visible on an X-ray before the esophagoscopy passed to the stomach during procedure. It happened in 26 cases (13.5%).

Clinical symptoms accompanying EFBs depended mainly on the location, size, and time elapsed from the accident. Directly after ingestion strong cough was observed, sometimes with vomiting. Dysphagia occurred in eighty-three children (43%). Vomiting in case of lodged EFBs is dangerous, because the pressure may cause the rupture of the thin wall of the oesophagus. In Little's survey a sore throat and chest pain were essential and nagging symptoms. Pain may be the only sign of an FB that was ingested not witnessed. BakRomaniszyn<sup>11</sup> reported that in the literature review 7–35% of patients had no ingestion symptoms and finally esophagoscopy proved an impacted object.

Fang et al<sup>12</sup> in their study a total of 252 patients with esophageal foreign bodies were divided into 3 groups based on the treatment received: endoscopy, surgery converted from endoscopy, or surgery only. The diameter of the foreign bodies in patients treated by surgery converted from endoscopy was larger than that of those treated by simple endoscopy (5.2 cm vs 2.7 cm,  $P=0.0003$ ). The cervical or upper thoracic esophagus was the most common site of

foreign body impaction treated by surgery converted from endoscopy, while the foreign bodies removed by simple endoscopy were frequently lodged at the middle thoracic esophagus ( $P=0.021$ ). Bone-related foreign bodies and dentures were most likely impacted in patients treated with surgery converted from endoscopy. The factors influencing the choice of treatment included foreign body maximal diameter and location.

Lee et al<sup>13</sup> reported a man with direct injury to the azygos vein and a subclavian artery pseudoaneurysm due to a fishbone penetration at the upper esophagus that required treatment by surgical manipulation. Older children and nonimpaired adults may identify the ingestion and localize discomfort. However, the area of discomfort often does not correlate with the site of impaction. Frequently, symptoms occur well after the patient ingests the foreign body. Young children, mentally impaired adults, and those with psychiatric illness may thus present with choking, refusal to eat, vomiting, drooling, wheezing, blood-stained saliva, or respiratory distress.<sup>14</sup>

### Conclusion

Children with oesophageal foreign body ingestion can be effectively treated, it is necessary to carefully consider the type of ingested, the children's age, expected complications, and emergency situations. Usual site of oesophageal foreign body is at upper end of oesophagus. One should be careful to remove a foreign body lodged at previous oesophageal anastomosis.

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