

SAGITTAL ORIENTATION OF INGESTED FOREIGN BODY COIN IN OESOPHAGUS AT TERTIARY RURAL HEALTH CARE CENTER: A CASE REPORT.

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ABSTRACT

INTRODUCTION

The classic teaching has been that coins in the esophagus are oriented in the coronal plane projecting en face on frontal radiographs and tangentially on lateral views, whereas coins in the trachea are oriented sagittally and appear tangential on frontal radiographs and en face on lateral radiographs.

AIM & OBJECTIVES

Here we present a 13 year old male child who came to emergency department by his parents with alleged history of foreign body ingestion 1 day prior. On presentation patient was alert and oriented, haemodynamically stable. But patient was having retrosternal pain and increased salivation post ingestion of foreign body, a plain radiogram of neck was advised in both AP and lateral view. The foreign identified was coin and it typically had crossed the level of cricopharynx and presented at the level of arch of aorta or just above the carina and was lying in the Sagittal plane

RESULTS

Although an oesophageal coin lying in a Sagittal plane has been previously reported, It is also

likely that children with any anatomic oesophageal abnormalities or unsuspected, additional, radiolucent foreign bodies may also have varying appearance of retained coins on chest radiographs.

KEYWORDS

Sagittal Orientation of Ingested Foreign Body, Coin in Oesophagus, Sagittal Orientation Coin in Oesophagus

INTRODUCTION

Foreign body (FB) ingestion and food bolus impaction is a common occurring event in children in all age groups, however, the most common age is 6 months to 4 years. Older children with underlying psychiatric problems are more susceptible to ingest FBs[1]. Most of ingested foreign bodies pass spontaneously with no intervention and coins are one of the usual ingested objects in the children[2-3]. Emergency intervention usually is needed in the symptomatic patients mainly with drooling, chest pain, and stridor or other red flags including:

- Button batteries lodged in the esophagus.
- Large objects >6 cm long and/or wider than 2.5 cm.

- Magnet + metal object or >1 magnet ingestion.
- Lead based objects failing to transit through the stomach.
- High risk children: the previous GI surgery, tracheoesophageal fistulas or stenosing lesions¹.

In the absence of the above signs and symptoms and red flags, patient can be kept under observation for 12-24 hours for their spontaneous passage along the GIT [4]. Distal oesophageal coins are more likely to pass spontaneously than the proximal coins. Serial radiographs are obtained to localise the site of the FB in the conservative management protocol [5-6]. Coins in the oesophagus often oriented in the coronal plane (face on the frontal radiograph and edge on the lateral view), however tracheal FBs placement is more likely in the sagittal orientation [7].

CASE REPORT

A 13 year old male child presented to emergency department by his parents with alleged history of foreign body ingestion 1 day prior. On presentation patient was alert and oriented, haemodynamically stable. There were no episodes of vomiting or breathing difficulty. But patient was having retrosternal pain and increased salivation post ingestion of foreign body. The next step was to identify and locate the foreign body in the aero-digestive tract. So, a plain radiogram of neck was advised in both AP and lateral view. The foreign identified was coin and it typically had crossed the level of cricopharynx and presented at the level of arch of aorta or just above the carina and was lying in the Sagittal plane(Figure1). The patient was admitted in the ward and CT neck was advised which confirmed the presence of foreign body

in the cervical esophagus at the level of arch of aorta(Figure 2). The patient was taken up for Hypopharyngoscopy under SGA immediately in emergency OT, and the 5rs. coin was removed



with no post-op complications(Figure 3).

Figure 1: Preoperative plain Xray- neck, chest, abdomen- AP and Lateral view



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Report Name	KAMIL, CT SCAN	Date of Birth	27 Apr 2023
Patient ID	196676	Sex	M
Referring Dr.	DR. S. S. SURESH	Age	13 Yr
Study Date	27 Apr 2023	Exam Date	27 Apr 2023
Time	8:30 AM	Exam Time	07:58 PM

CT SCAN- THORAX (PLAIN)

PROTOCOL: Axial axial sections of the chest were studied from the apex of each lung to the level of the diaphragm without administration of contrast.

The lung parenchyma shows normal aeration.

No evidence of volume loss or collapse seen. No mass lesions or consolidations are seen.

No evidence of pleural effusion or thickening.

There is no evidence of significant mediastinal lymphadenopathy.

The heart is normal in size. No evidence of pericardial effusion.

Major vessels are normal - likely seen in normal cross-section at the level of arch of aorta.

Rest of the esophagus appears normal.

Visualized spine - the glands appear normal.

IMPRESSION:

- Coin in cervical esophagus, at the level of arch of aorta.
-
-

S.S. Suresh
 Dr. Suresh S Suresh
 MD

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Figure 2: Plain CT thorax report of the patient.

Figure 3: Intraop 5rs.coin after removal by Hypopharyngoscopy.

DISCUSSION

Although an oesophageal coin lying in a sagittal plane has been previously reported, It is also likely that children with any anatomic oesophageal abnormalities or unsuspected, additional, radiolucent foreign bodies may also have varying appearance of retained coins on chest radiographs. Although his intraoperative findings and history do not suggest it. Clinicians suspecting children with clinical presentations not suggestive of foreign body ingestion should be wary of making the diagnosis relying on single-view radiographic findings alone. When clinically reasonable, both anteroposterior and lateral chest radiographs should be ordered. Additional imaging, most notably computed tomography scanning or endoscopic/ bronchoscopic imaging, can help further localize swallowed coins when necessary. Ultrasound is less likely to be helpful, because of interference from the air in the trachea. Magnetic resonance imaging scan may be problematic because of metallic coins' interference with the magnetic field.

Most ingested coins pass through the gastrointestinal tract spontaneously. Most

common sites of impaction esophagus, most commonly at the thoracic inlet and mid esophagus at the level of the aortic arch or gastroesophageal junction. The majority of metallic objects are visible on on X-ray with the exception of aluminum. Imaging should be considered in suspected cases of button battery, magnet, radiopaque object, unknown object, high risk or symptomatic child [5-7].

Jackson C et al in 1936 reported 310 aspirated or ingested coins or coin like foreign bodies removed from the "air and food passages.". Only four objects were in the airway. Despite the authors' comment that "flat objects like coins always lie with their greatest diameter in the coronal plane in the oesophagus" and "in the sagittal plane in the trachea" two of the four airway coins had a coronal orientation [7] reported a child with an oesophageal coin that seen on sagittal orientation at anteroposterior chest radiograph and as a disc in the lateral view. These findings were typically associated with tracheal ingestion[8]. Seven of the eight cases lodged in the aortic arch level and another one coin was at the distal oesophagus below the aortic arch level (an atypical location). The average age was 7.8 years and only three of them were younger than 5 years. They explained that an ingested coin with an atypical sagittal orientation in the oesophagus may be misinterpreted as tracheal coin on a frontal chest radiograph. They concluded that as the ingestion of coins are more common than aspiration of coins, a sagittal coin on a chest radiograph is more likely to be within the oesophagus than trachea. A literature[9] reported an 8-year-old male with complain of having accidentally swallowed a coin. The child demonstrated no evidence of respiratory

distress, but regard to the coin's orientation on X-ray there was concern about tracheal location. The coin was oriented in a sagittal plane. However, on closer examination of both the lateral and A-P radiographs, it would be obvious that the coin was aligned alongside and outside of the tracheal air column [10].

CONCLUSION:

Our case reveals that the classic teaching that coins with a sagittal orientation on chest radiographs are in the trachea is usually not correct. A coin seen with a sagittal orientation on a chest radiograph will likely be within the esophagus.

DECLARATION

Conflict of Interest: There was no conflict of interest.

Ethical Approval: The study was approved by institutional ethics committee.

Consent: Written and informed consent were taken while doing the study. No human or animal was harmed in the study.

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