Calcified thyroid nodule masquerading as foreign body: pitfall of lateral neck X ray

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INTRODUCTION

Accidental ingestion of foreign bodies tops the list of emergencies referred to the ENT department. Accidental ingestion of foreign bodies is one of the commonest emergencies encountered in ENT practice. Lateral neck radiograph is a helpful and widely available screening tool for preliminary assessment of patients presenting with foreign body ingestion but may at times be misleading especially in cases of migrated foreign bodies or shadows caused by abnormal calcifications.

We present a case of calcified thyroid nodule casting a radio-opaque shadow against cervical esophagus in a lateral neck X-ray giving a false impression of an esophageal foreign body. To our knowledge, this is first such case report in the literature.

Case Report:

A 53 years old lady presented with severe odynophagia after accidental ingestion of fish bone. Lateral neck X ray revealed a triangular, subcentimeter radio-opaque shadow against 6th cervical vertebra representing a foreign body. Rigid esophagoscopy was negative for intraluminal foreign body.

A CT scan performed post operatively showed a large calcified thyroid nodule in the right lobe of thyroid adjacent to the esophagus, which could be correlated to the radio-opaque shadow on lateral neck X-ray.

Conclusion:

Radiological work-up is invariably required to demonstrate the presence and location of impacted foreign bodies. Lateral neck X ray is the first line investigation because of easy availability and cost effectiveness. Positive predictive value of lateral neck X-ray is between 66 and 72%. CT scan correlation is strongly recommended where plain X-ray alone shows confusing picture.

CASE REPORT

A 53 years old lady presented with severe odynophagia after accidental ingestion of fish bone. Lateral neck X ray revealed a triangular, radio-opaque shadow anterior to the 6th cervical vertebral body. There was no intraluminal foreign body. Radiography repeated intraoperatively showed persistence of the foreign body shadow at the same location. Considering possibility of extraluminal migration of fishbone the procedure was abandoned for further imaging.

Subsequently, an unenhanced CT scan of neck and thorax was performed which showed a large calcified thyroid nodule posteriorly placed in the right lobe of thyroid adjacent to the esophagus. On reconstructed coronal image, this could be correlated to the radio-opaque shadow on the lateral neck X-ray. There was no extraluminal foreign body. Patient was conservatively managed for esophageal tear and was discharged well on 5th postoperative day.

DISCUSSION

Accidental ingestion of foreign bodies tops the list of emergencies referred to the ENT department. In South-East asian population, fish bones comprise 86% of the foreign bodies. Habit of cooking fish as a whole and not deboning them prior to consumption is the main factor for this high incidence of fish bones ingestion locally. Majority of patients are treated in clinic settings but approximately 5% require rigid esophagoscopy or even neck exploration for foreign body retrieval.

Imaging is required when clinical examination fails to reveal the foreign body. Choice of radiography is based on patient's symptoms. Foreign body sensation felt above the sternum can be well assessed by a plain lateral neck soft tissue radiograph. CT scan has replaced Barium swallow as the investigation of choice at most of the centers when the foreign body is suspected to have passed into the thoracic esophagus. In busy emergency departments, lateral neck x-rays are ordered at the point of triage to screen all patients presenting with history of foreign body ingestion. Demonstration and localization by pre-ordered X-ray is particularly helpful to the ENT clinician in planning a strategy for expedient foreign body removal.

Lateral neck radiography, however has its own pitfalls in form of false positive or false negative results and is not considered very reliable. There is a wide range of values when it comes to sensitivity, specificity and positive predictive value (25 to 57%, 76-82% and 66 to 72.7% respectively 1, 2, 4). Lateral neck radiography and most articles advocate clinical examination to precede over imaging and reserve neck x-ray only for negative clinical examination.

Foreign bodies lodged in pyriform sinuses often present with false negative lateral neck X-ray as the shadow may not be discernible from the thyroid cartilage outline. Artifacts and spurious shadows mimicking a foreign body can confuse clinicians and may lead to unnecessary procedures. Ossification of posterior margin of cricoid lamina resembling a foreign body is a well-known confounding factor3. Wider availability of CT scans has been of help to the surgeons in accurately localizing and confirming presence of a foreign body. In our case, findings were highly suggestive since symptom onset was subsequent to fish bone ingestion. It was only after postoperative CT scanning that a diagnosis of calcified thyroid nodule was clinched and nature of radio opaque shadow became apparent.

REFERENCES

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