INTRODUCTION

A foreign body in the esophagus is a common otorhinolaryngological emergency. It commonly occurs at extremes ages. Adult persons may have loose posterior teeth and decreased gag reflex. So, they are more prone to foreign bodies esophagus. Meat bolus, sharp meat bone, fishbone, and dental prosthesis are more common foreign bodies among adults. 1 Foreign bodies frequently lodge in areas of the esophagus where there is physiologic or pathologic luminal narrowing. 2 The most common site of impaction is the upper esophagus just below the cricopharyngeal junction. Sometimes a sharp foreign body can penetrate the digestive tract mucosa and become extraluminal. Laryngeal structure undergoes ossification after the third decade of life which mimics the foreign body. 1 Here we present a case of 54-year female who presented with foreign body sensation, dysphagia, and odynophagia after eating chicken bone.

CASE REPORT

A female patient aged 54 years presented with throat pain and difficulty swallowing after ingestion of chicken bone at the Emergency Department of Gandaki Medical College on April 2021. There was no history of dyspnea, chest pain, cough, fever, painful neck movement, or voice abnormality. For the past 4 years, she has been taking medications for hypertension. There was no history of diabetes mellitus, hypertension, or any other genetic disease in other family members. She was non-smoker and non-alcoholic. On otolaryngological examination, there was mild tenderness in the left upper neck region. Her complete blood count and renal function test were within the normal limit and serology was non-reactive. An X-ray of the neck showed radio-opaque linear vertical shadow just anterior to the C3-C4 region(Figure 1).

Figure 1: X-ray soft tissue neck lateral view showing a radio-opaque shadow in front of C3-C4

ABSTRACT

Background: Foreign body ingestion frequently occurs in the extreme of ages. Meat bolus, fishbone buried in the food, and sharp bone are the common ingested foreign bodies among adults. The normal ligament and bony structure start to ossify after the third decade of life and mimic foreign bodies. Ossified thyrohyoid ligament, cricothyroid ligament, cornu of hyoid bone may be misdiagnosed as a foreign body in the aerodigestive tract.

Case presentation: We describe a 54 years female who presented with painful swallowing for two days after eating chicken bone at Emergency Department. X-ray soft tissue neck lateral view showed a radiopaque shadow in front of the C3-C4 region. The patient underwent rigid esophagoscopy, however, a foreign body could not be found at the pharynx. Computerized Tomography (CT) shows the same hyperdense shadow at the same location as seen in the x-ray. Furthermore, Magnetic resonance imaging (MRI) scan was done to localize the exact site of the foreign body, but the patient was a case of thyrohyoid calcification rather than foreign body in the esophagus.

Conclusion: Difficulty arises for the surgeons when a foreign body is not found during rigid esophagoscopy. It is important to reassess and locate the foreign body by imaging. The calcified ligament can mimic a foreign body in the neck. MRI confirms the diagnosis which may be misguided by X-ray and CT-scan.
Figure 2: Flexible nasopharyngolaryngoscopy-negative for foreign body

Rigid esophagoscopy under general anaesthesia (GA) revealed no foreign body at the esophagus. Repeat X-ray of the neck on next day was performed but showed similar foreign body shadow. Flexible Nasopharyngolaryngoscopy did not see the foreign body in the laryngopharynx (Figure 2).

Figure 3: CT scan Coronal(A) Sagittal(B), Axial (C) and 3D reconstruction(D) showing a hyperdense shadow at C3 – C4

A CT scan of the neck with 3D reconstruction revealed an obliquely oriented, well-defined hyperdense bony density shadow of 22 mm length anterior to the C3-C4 spine (Figure 3). Repeat rigid esophagoscopy didn’t show any foreign body. An exploration of the suspected site in the posterior pharyngeal wall was done. But the foreign body could not be found. Then, the patient was managed in the postoperative ward with Nil Per Oral Intravenous (IV) Fluids and IV antibiotics. On the second post-operative day, nasogastric feeding was started. MRI was performed on fourth post-operative day (POD) (Figure 4).

Figure 4: MRI Neck : (A)Hypointense T1 weighted image, (B) Hyperintense T2 weighted image

T1-Transverse spin-echo (TSE) weighted image showed hypointense and T2-TSE weighted image showed hyperintense shadow suggestive of the left lateral thyrohyoid ligament calcification which rules out the chances of foreign body. At tenth POD, oral feeding was started and patient was discharged on 12th POD. Follow-up was done at 1 week, 2 weeks, 1 month, 2 months and 6 months at the outpatient clinic. Patient did not show any signs and symptoms related to foreign body esophagus on follow up visit.

DISCUSSION

Cricopharyngeal junction is the common site of impaction of foreign body. Laryngeal cartilages and structures lying around larynx can mimic a foreign body when it is calcified. The common structure which mimics foreign bodies includes lamina of thyroid cartilage, Posterior lamina of cricoid cartilage, greater cornu of hyoid bone, triticeal cartilage, cricothyroid membrane, thyrohyoid membrane etc.\(^5\) We have to locate the exact location of foreign body before any intervention. X ray soft tissue neck is the most common imaging to see the foreign body. Depending on X ray, treatment of foreign body is planned by ENT surgeons at most of hospital. The most common procedure to remove the foreign body is rigid esophagoscopy under general anaesthesia Some center advocates to remove the foreign body by balloon catheter, and flexible upper gastrointestinal endoscopy.\(^6\) However, Balloon catheter is not suitable for sharp foreign body. Flexible esophagoscopy is not appropriate because of its long working length which might even lead to iatrogenic perforation as patient moves during the procedure.

If foreign body is not found in rigid esophagoscopy, we have to re-evaluate the patient with further radiological imaging. C-arm can be used to see the foreign body intra-operatively. It can used to locate the foreign body. In our case we explored the Posterior Pharyngeal wall under C-Arm guidance but the intraoperative findings were negative for foreign body. CT scan helps to locate the foreign body in three-dimensional (3D) view, although in some cases it is very difficult to differentiate and rule out foreign body. Calcification of Cricothyroid ligament, tritecal cartilage and lateral thyrohyoid ligament are difficult to differentiate even with CT scan. Calcified Cricothyroid ligament is observed in the soft tissues of the pharynx, positioned inferior to the greater horn of the hyoid bone and close to the upper border of the C4 vertebrae, whereas tritecal cartilage is located inferior to greater horn of hyoid bone and superior to thyroid cartilage at level C3-C4 which has oval or irregular calcification.\(^3,7\)

Furthermore, to determine the exact treatment of the patient, either MRI neck or exploration of Neck should be done. In our case, MRI neck was done which showed Hypointense T1 weighted image and Hyperintense T2 weighted image at the level of C3-C4. Considering, CT scan, Intra-operative and MRI Neck, it was suggestive of left Lateral Thyrohyoid calcification. The lateral thyro-hyoid ligament connects between the lateral edge of greater cornu of hyoid bone and the upper edge of the...
superior horn of the thyroid cartilage and which exist parallel to a spinal column normally. In our case, it was observed diagonally in spite of being parallel. Different variant of positioning hyoid bone and superior horn of thyroid cartilage that can lead to unusual positioning of the lateral thyrohyoid ligament location. One of the variations which was explained in this case may be the left greater cornu curved upward and left superior horn of thyroid cartilage curved medially which give diagonal view of left ossified thyrohyoid ligament.

CONCLUSION

Foreign body in the aerodigestive tract is a common otolaryngological condition. Common structure of laryngeal framework calcification might mimic foreign body. So, it can be very difficult to differentiate calcification form foreign body. Lateral thyroid hyoid ligament calcification is one of the rare conditions and can mimics foreign body which is not picked by X-ray and CT scan. MRI or neck exploration is last resort to rule out foreign body.

REFERENCES:


