

Original Research Article

Challenges in treating patients with foreign bodies in hypopharynx and esophagus: our experience in a tertiary care hospital

Nambiar Sapna S.*, Swathilal S. A., Sunilkumar K. P., Soumya Aravind M. V.

Department of ENT, Government Medical College Kozhikode, Kerala, India

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***Correspondence:**

Dr. Nambiar Sapna S.,

E-mail: snambiar25@gmail.com

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ABSTRACT

Background: Foreign bodies (FBs) of the hypopharynx and esophagus are among the common otolaryngologic emergencies. Every new case poses a clinical challenge with need for optimal treatment strategy. The objective of our study is to highlight a few of the challenges faced while treating these patients.

Methods: A prospective study was done on all patients who reported to the ENT casualty, Government Medical College Kozhikode with history or suspicion of foreign body throat from January 2020 to January 2021. A total of 160 patients reported of which 48 (30%) patients required further evaluation with rigid endoscopy and foreign body removal in the operative room. A few challenges like migration of foreign bodies, dilemma in diagnosis with FB mimicking ossified cartilages on X-ray, FB removal in mentally challenged patients and treatment of esophageal perforation post rigid endoscopy are discussed.

Results: Only 48 (30%) patients of the total 160 patients required rigid endoscopy and foreign body removal in the operating room. The foreign body was obtained in 42 (87.5%) patients while 6 (12.5%) patients improved post rigid endoscopy though foreign body was not obtained. One patient with denture in the esophagus developed esophageal perforation requiring prolonged hospital stay.

Conclusions: A high index of suspicion among patients presenting with dysphagia, neck pain and sudden decrease in food intake is warranted. Early diagnosis with appropriate imaging modalities is essential for confirmation of diagnosis. Dentures are among FBs that necessitate more caution. Esophageal perforation, a rare but life-threatening complication must be diagnosed timely with appropriate surgical intervention.

Keywords: Foreign body (FB), Hypopharynx and esophagus, Rigid endoscopy

INTRODUCTION

Foreign bodies (FB) of the upper gastrointestinal tract mainly in the hypopharynx and esophagus are amongst the common emergencies that pose a challenge to the otorhinolaryngologist. Foreign body ingestion among adults is either accidental or purposeful which is observed anytime during the life. In adults' common foreign bodies are fish/ meat bones, meat bolus, dentures etc. The foreign bodies ingested get trapped in the cricopharynx or esophagus, narrowing the lumen and leading to anatomic

abnormalities. Fortunately, most of them pass through the gastrointestinal tract harmlessly.¹ However, 10-20% will require non-operative intervention and only 1% or less surgery.² In a few cases reported foreign bodies which have gone beyond the esophagus will pass uneventfully through intestinal tract in 70-80% cases.³ Ingestion of foreign bodies is common especially among the pediatric age group, whereas in adults it occurs more commonly among those with psychiatric disorders or mental retardation, prisoners and alcoholics.⁴ This further adds to the challenges faced in managing these patients.

Ingested objects if untreated shams various challenges in the form of complications like development of mucosal ulceration, esophageal perforation, mediastinitis, vascular trauma, aorto-esophageal fistula, pseudo aneurysm, para-esophageal abscess, tracheoesophageal fistula, pneumothorax, pericarditis, and other conditions.^{5,6} The management essentially includes early detection and removal of the foreign body thereby reducing likely morbidity and mortality. However, the wide range of likely foreign bodies with the differing clinical presentations can make the management not only difficult but also critical thereby requiring thorough knowledge and adequate expertise in dealing with the situation. The awareness of the likely challenges in treating these patients can help reduce the patient and surgeon frustration. It is imperative to know the various challenges likely while dealing with such patients which can keep one better prepared for any eventuality.

METHODS

The study is a prospective study done on all patients who reported to the ENT emergency casualty, Government Medical College Kozhikode with history or suspicion of foreign body from January 2020 to January 2021 after seeking permission from the institutional ethics committee. A total of 160 patients reported and each of them was subjected to a detailed history and complete ENT evaluation. The patients had X-ray soft tissue neck lateral view taken to confirm the presence of foreign body and its site. Among the total patients only 48 patients (30%) required further evaluation which is a rigid endoscopy and foreign body removal in the operative room.

The study included all patients with foreign body throat, diagnosis confirmed with radiological investigations and requiring surgical intervention for removal of the same.

Exclusion criteria: All patients who presented in the ENT casualty emergency with foreign body throat wherein no radiological confirmation was obtained, those where the foreign body was in the oropharynx or accessible region like the tonsil etc. where it could be removed in the procedure room itself and those where the symptoms improved with medications were excluded from the study.

The CT scan neck and thorax was done for patients with suspected dentures as foreign bodies, concomitant retropharyngeal abscess, delayed presentation etc. All our patients after foreign body removal were monitored in the ward and discharged after 2-3 days once they were asymptomatic and able to take feeds orally. We highlight 5 challenging situations among the cases; which include; intraluminal and extraluminal migration of foreign bodies, denture with perforation of esophagus, foreign body mimicking an ossified cartilage on radiology and foreign body in a mentally challenged individual.

Statistical analysis

Patient data collected for this study included all patients with foreign body throat seen in the ENT emergency casualty, Government Medical College Kozhikode over the mentioned one-year period satisfying the inclusion criteria. Data were analyzed for qualitative and quantitative variables and descriptive statistics were calculated.

RESULTS

The study included a total of 160 patients in the period from January 2020 to January 2021 who presented to the emergency casualty of the department of ENT, Government Medical College Kozhikode a tertiary care centre in northern Kerala. In view of the COVID-19 pandemic the total cases had reduced compared to the usual numbers in preceding years as referrals were curtailed. The patients who required rigid endoscopy and foreign body removal in the operating room included only 48 (30%) of these patients. The remaining patients included symptomatic patients who had no evidence of any foreign body clinically or radiologically, those with foreign bodies in either tonsil or other accessible areas that were removed in the out-patient department itself and cases where the foreign bodies got extruded by itself in the observation period. The 48 patients who required rigid endoscopy included 28 males (58.3%) and 20 females (41.7%) with the age distribution as shown in Table 1. The foreign bodies ingested included fish/meat bones in 30 (62.5%) patients, meat boluses in 12 (25%) patients, dentures in 4 (8.1%), coin in 1 (2.2%) and keychain in 1 (2.2%) patient as shown in Table 2. The common site of lodgment of foreign body in our study was the cricopharynx (C6 level) with others in either the pyriform fossae or esophagus. All the patients were taken up for rigid hypopharyngoscopy/esophagoscopy depending on the site of the foreign body. The surgery was done under local anesthesia in 31 (64.5%) patients and GA (general anesthesia) was given to the remaining 17 (35.5%) patients. The foreign body was obtained in 42 (87.5%) patients while 6 (12.5%) patients improved post rigid endoscopy but the foreign body was not obtained as shown in Table 2. It is most likely that in these patients the foreign body got dislodged and migrated onwards either post endoscopy or otherwise. All the patients were observed post procedure in the ENT ward for a minimum of 24-48 hours for recovery of symptoms and consumption of feeds orally. One patient with denture in the esophagus developed esophageal perforation post esophagoscopy and had a prolonged stay before discharge.

All patients were made to take X-ray soft tissue neck which confirmed presence of the foreign body and its site in 37 (77%) patients with 11 (23%) patients' requiring further investigation for the same. These patients underwent CT scan neck and thorax for confirmation and detection of site of FB which included patients with

ingested dentures; complications like retropharyngeal abscess or anticipated migration, delayed presentations and failed attempts at FB removal earlier. Among the challenges faced while dealing with patients with foreign bodies in the hypopharynx or esophagus, a common few include migration of the foreign body requiring neck exploration, impacted foreign bodies commonly dentures with esophageal perforation post-surgery the nightmare for the surgeon, dilemma in patients with foreign bodies mimicking ossified cartilages at the site of lodgment and dealing with mentally challenged patients having ingested foreign body where the difficulty begins with varied presentation in the absence of a definite history requiring a high index of suspicion always. The knowledge of likely varied clinical presentations and course of management can help an otorhinolaryngologist to be better prepared and equipped while treating them effectively, preventing likely morbidity and mortality.

Table 1: Age and sex distribution of patients with ingested foreign bodies of the upper digestive tract.

Age of the patient (years)	Male	Female	Total
13-30	8	3	11
31-50	10	9	19
51-70	7	6	13
71-90	3	2	5
Total	28	20	48

Table 2: Type of foreign body ingested by the cohort of patients.

Type of foreign body ingested	Total	Detected by scopy	Detection rate (%)
Fish/meat bones	30	25	83.3
Meat bolus	12	11	91.6
Dentures	4	4	100
Coin	1	1	100
Keychain	1	1	100
Total	48	42	87.5

Case 1

43-year-old female with history of accidental fish bone ingestion 10 days prior presented to our emergency casualty with persisting foreign body sensation, fever and dysphagia. The patient was seen at a nearby local hospital where she underwent a flexible upper gastrointestinal endoscopy with no evidence of any foreign body seen. She was sent home with medications; antibiotics and analgesics but symptoms persisted. After complete evaluation at our hospital, she underwent a contrast enhanced CT scan of the neck and thorax which revealed a foreign body abutting the esophageal wall piercing the lower pole of the thyroid gland on the right side (Figure 1A) The patient was taken up for foreign body removal under GA where a rigid endoscopy done did not reveal

any foreign body in the esophagus and hence, she required neck exploration. The foreign body had migrated extraluminally and was retrieved as mentioned adjacent to the lower pole of the thyroid gland on the right side (Figure 1B). Post operative period was uneventful, the drain was removed on day 3 and Ryle’s tube feeding continued for 72 hours. Once the patient was able to take orally, she was discharged.

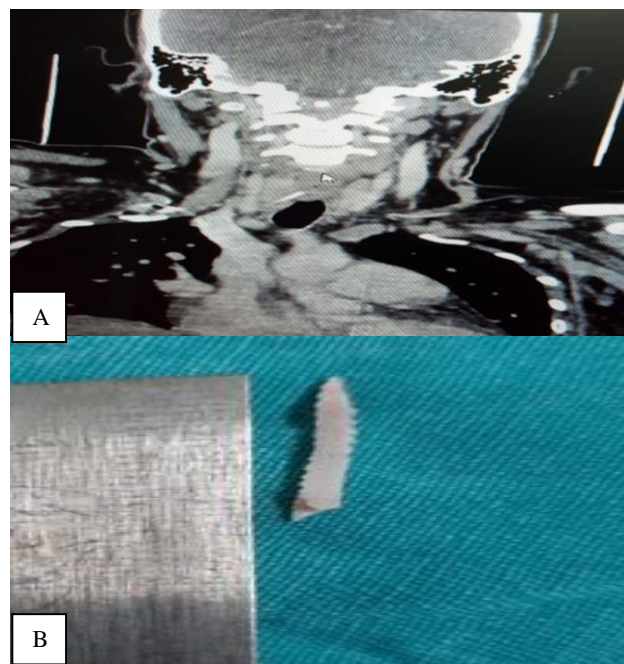


Figure 1 (A and B): CECT scan neck and thorax of the migrated FB with the tip in the esophageal wall piercing the lower pole of the thyroid gland on the right side with the fish bone retrieved on neck exploration adjacent to the lower pole thyroid gland.

Case 2

52-year-old female patient was referred from the orthopaedic department as she presented there with history of neck pain of 2 days, fever and dysphagia. She was a diabetic on insulin with worsening of symptoms noted suddenly. An X-ray soft tissue neck taken revealed a radio-opaque foreign body at level C4-C5 with retropharyngeal abscess (Figure 2) She was in diabetic ketoacidosis which required urgent medical management following which she was taken up for rigid endoscopy with abscess drainage and foreign body removal. However, pus was drained but foreign body could not be retrieved. A Ryle’s tube was inserted and a wide incision ensured enabling drainage of the collecting pus if any. A check X-ray taken did not show the FB as noted before (Figure 3A). Patient improved with the foreign body passed in stools on the morning post endoscopy (Figure 3B). The retropharyngeal abscess was treated and strict glycemic control ensured. Patient was discharged once she was able to consume well orally with insulin for diabetic control.



Figure 2: X-ray soft tissue neck lateral view revealing a FB at C4 level with retropharyngeal abscess.

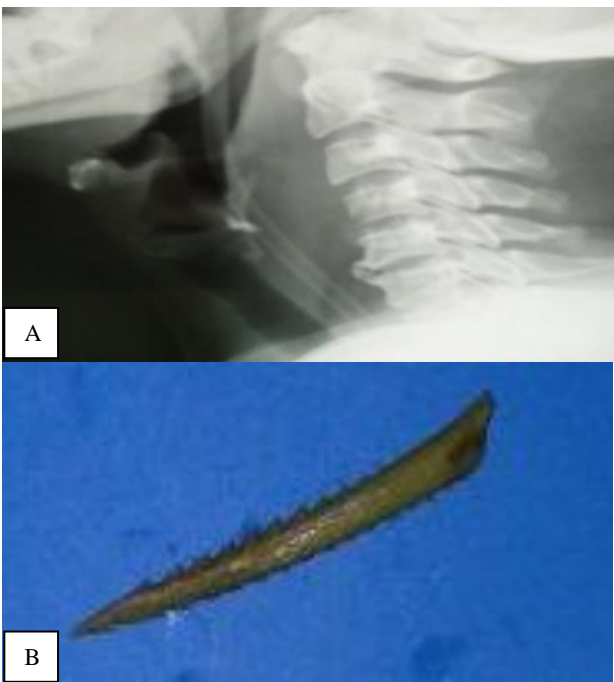


Figure 3 (A and B): Check X-ray post rigid hypopharyngoscopy showing no radiological evidence of the FB with a Ryle's tube inserted and resolving retropharyngeal abscess. The FB that migrated and was recovered by patient post endoscopy.

Case 3

48-year-old male patient with history of accidental ingestion of artificial denture presented to our emergency casualty. He was seen at a local hospital and flexible endoscopy was attempted there to remove the foreign body; which failed and he was referred for appropriate management. The CT scan neck and thorax revealed a hyper dense foreign body impacted in the proximal one third of the esophagus at D3 level (Figure 4). He was taken up for rigid endoscopy and foreign body removal under GA with cardiothoracic surgeon too informed in case of any eventuality. The foreign body though visualized was impacted and couldn't be manoeuvred and

removed. However, the effort taken to dislodge and then carefully retrieve it with manipulation was successful using the expertise of cardiothoracic surgeon who was present (Figure 5). A Ryle's tube was inserted and patient shifted to the ward with strict monitoring. The patient developed severe chest pain with radiation to the back suggesting a likely esophageal perforation which was confirmed by a CT scan that revealed lower esophageal perforation. Intercostal drain was inserted but as his condition worsened clinically the patient was taken up for exploratory thoracotomy and laparotomy. The perforation was visualized and a patch of omentum used for repair with a gastro jejunostomy done. The patient did improve slowly but required stringent monitoring in terms of nutrition and chest physiotherapy which was ensured. Once the chest expansion was complete and he clinically improved the intercostals drain was clamped and removed. He was kept on feeds via the gastrojejunostomy which needed a strict watch on his nutrition and also mental support so that he would remain motivated enough. Finally, after 3 weeks he was started on fluids alone and subsequently semisolids. He was discharged with counselling on hazards of ill-fitting dentures and never to use them again.

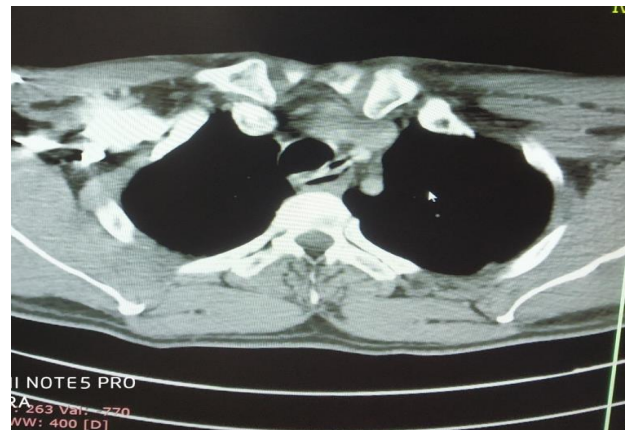


Figure 4: Hyperdense FB noted impacted in the proximal one third of thoracic esophagus at D3 level.



Figure 5: The denture retrieved on rigid endoscopy under GA.

Case 4

30-year-old male patient presented with a history of accidental foreign body ingestion with foreign body sensation of the throat. The clinical examination showed no evidence of foreign body and there was neither pooling nor features of inflammation in and around the hypopharynx. The X-ray soft tissue neck revealed a radio opaque shadow at C6 level (Figure 6) and patient was taken up for rigid endoscopy and foreign body removal under local anaesthesia. The hypopharyngoscope was passed well below the cricopharynx with no foreign body obtained. The patient had significant clinical improvement post-surgery and was better with no symptoms. The X-ray was discussed to rule out an ossified cartilage mimicking foreign body. However, a repeat X-ray was taken as advised on discussion with radiology department. The total absence of the previous shadow confirms it to be a foreign body which must have been displaced intraluminally and hence the clinical improvement. The patient was discharged and advised follow up with nothing to report for 6 months post the incident.



Figure 6: X-ray neck with radio-opaque shadow at C6 mimicking cricoid cartilage calcification.

Case 5

14-year-old mentally challenged male patient was brought to the emergency casualty of ENT with complaints of dysphagia and refusal to eat for one week. There was definite drooling with difficulty to swallow and tenderness in the neck. The patient was not very cooperative for examination but a high index of suspicion of an ingested foreign body was anticipated despite no definite history of the same obtained from the parents. The X-ray soft tissue neck and chest revealed a radio-opaque foreign body at C6-C7 (Figure 7A). The patient was taken for rigid endoscopy and foreign body removal under GA which was definitely challenging as the patient had severe scoliosis with skewed larynx thereby requiring endoscopic guided intubation. The foreign body was a key with the keychain which had luckily lodged just below the cricopharynx as patient would have instantly

choked to death had it been the laryngeal inlet (Figure 7B). The parents were totally taken by surprise and it was possible that the foreign body had remained there over a week. Post-surgery patient was monitored for 3 days wherein feeds were resumed slowly with adequate antibiotics and steroids to resolve the edema. Patient was discharged with parents well educated on having a high index of suspicion especially in case of sudden onset of any clinical symptom and worsening.



Figure 7 (A and B): X-ray neck AP and lateral view showing an unusual radio-opaque FB at C6. The removed FB was a key chain with stuck food materials.

DISCUSSION

Foreign bodies in the hypopharynx and esophagus are among the emergency cases that pose a challenge to an otorhinolaryngologist. However maximum chances of foreign bodies are noticed among pediatric age groups, followed by edentulous adults and psychiatric patients.⁷ Though the second peak is commonly observed in patients over 70 years; in pharyngeal and esophageal FB, the patients involved are from all the age groups.^{8,9} In our study 62.5% patients were below 50 years of age and 37.5% were over 50 years of age. We had one mentally challenged patient in our study wherein the high index of suspicion helped in early diagnosis. Preexisting physical or mental conditions predispose patients to esophageal impaction.⁴ In adults the common foreign bodies are fish or meat bones, meat boluses, dentures etc. FB in the upper digestive tract can cause mucosal injury, ulceration, inflammation and infection thereby resulting

in various fatal complications like para or retropharyngeal abscess, mediastinitis, empyema, perforation or rarely aorto-esophageal fistula.

A proper history taking and complete ENT examination is necessary for early diagnosis in patients with suspected foreign body throat or dysphagia. A high index of suspicion is required in case of mentally challenged patients, patients on psychiatric treatment, alcoholics, prisoners etc. The history of a sudden decreased intake of food with pain on swallowing must be considered a red flag sign with need to evaluate for any impacted foreign body in the digestive tract. In our study the 14-year-old mentally challenged patient (Case 5) and the 52-year-old diabetic lady with neck pain referred from the orthopedic department (Case 2) were both evaluated for suspected foreign body in upper digestive tract owing to a high index of suspicion which was beneficial in early diagnosis. Dentures used by patients definitely pose a threat for foreign body impaction in aero digestive tract especially in cases of poor fit of the denture at insertion, prolonged usage and failure of dental clinic follow-up evaluations especially when the denture becomes loose.¹⁰ The patient in our study with impacted denture in the esophagus (Case 3) had been advised to change his denture which was loosely fitting. Among the elderly this might be due to instability of the denture due to progressive remodeling of bone or alveolar ridge resorption resulting in poor stability of the denture over time with risk of denture impaction.¹¹ A radiological investigation; X-ray soft tissue neck lateral view is a very important diagnostic tool to help identify the foreign body and its location. However, it cannot be relied upon in case of radiolucent foreign bodies and with dentures wherein radiolucent materials are used in fabrication. Another limitation of the soft tissue neck X-ray is that the dentures may be impacted beyond the cervical esophagus, with dentures impacted in the mid-esophagus and lower esophagus, which is beyond the reach of cervical X-ray.¹² The neck is an anatomic region where the overlapping of soft tissues and bone structures is maximal, so the interpretation of lateral neck radiographs is often difficult.¹³ Normal ossification in laryngeal cartilage can easily be confused with FBs because the entire contours of cartilage are not always displayed on radiographs. Owing to its shape and position, cricoid cartilage ossification most often causes difficulties in differentiation from an FB. Two areas in the cricoid are easily confused: ossification of the superior margin and calcification of the posterior lamina. These two calcifications can be identified by their location at the expected level of the cricoid, but they never extend beyond its limits. By contrast, FBs are often irregular and typically extend beyond the limits of the cricoids.¹⁵ In our study the 30-year-old patient who presented with FB sensation throat (Case 4) had a radio-opaque shadow seen at level C6 but no foreign body was retrieved on rigid endoscopy. However, the patient significantly improved post procedure and was asymptomatic. A repeat X-ray soft tissue neck lateral view taken did not reveal the

previously seen shadow ruling out the possibility of an ossified cartilage or any other likely artifact mimicking a FB and also confirmed the dislodgement of the FB from the impacted site. The upper esophageal sphincter is the narrowest point of the gastrointestinal tract, with a diameter of around 14 mm.¹⁴ This area is located at C6 posterior to the cricoid cartilage and is the most common site of impaction. As the upper esophageal sphincter is the most common site of FB impaction, C6-C7 should be a “must read” area on lateral neck radiographs of patients with suspected FB ingestion. The radiographic signs associated with FB ingestion are visualization of the FB itself, soft-tissue (prevertebral) swelling and ectopic gas.¹⁵ Contrast enhanced CT scan neck and thorax is recommended in patients with complications, patients with high risk factors like uncontrolled diabetes or other immune compromised states, delayed presentation post ingestion of foreign body, patients reporting with failed attempt at removal of foreign body by either flexible or rigid endoscopy. In our study too CT scan was done only for patients with the above-mentioned indications. Despite its effectiveness in detecting FBs with a sensitivity rate of 100% and a specificity rate of 93.7%, computed tomography scanning (especially 3-dimensional reconstruction) may be cost inefficient in a routine emergency setting. A negative radiological investigation does not rule out the presence of a FB in the aero digestive tract and does not spare from endoscopy when the ingestion or the aspiration is strongly suspected.¹⁶

The effective treatment for FB in the hypopharynx or esophagus is early detection and rapid removal. The optimal means of treating FB is prompt removal, which ensures the maximum safety and minimum trauma to the patient. The removal of FB under direct visualization with a rigid endoscope is the most reliable method enhanced by recent improvements in endoscopic illumination and anaesthetic techniques.¹⁶ On the one hand, flexible endoscopy can be cost-effective because it is performed on an outpatient basis without general anaesthesia, but on the other hand, when sharp or penetrating FBs are in question, rigid endoscopy is required. At our hospital with most cases referred after attempted removal elsewhere we preferred a rigid endoscopy which was done either under LA or GA depending on clinical presentation, presence of complications, likely patient co-operation, attempted procedures earlier etc. However, in high-risk patients like in the mentally challenged patient in our study, rigid endoscopy under GA alone was possible with intubation itself being difficult in view of the scoliosis and general status owing to the delay in presentation itself. Migration of FB from the pharynx or esophagus can predispose the patient to further more catastrophic complications but this is not very common. In a case series of more than 2,000 esophageal FBs by Hsu et al 2 patients developed esophageal perforations requiring removal of the FB through an external approach.¹⁸ Pang et al reported a case in which an ingested FB migrated out of the esophageal

lumen and punctured the common carotid artery, causing a retropharyngeal hematoma.¹⁹ It was only after failure to retrieve the foreign body under general anaesthesia by rigid endoscopy that neck exploration is done with image guidance. In our study, in patient (case 1) the foreign body had pierced the esophageal wall and was found abutting the lower pole of the thyroid gland on the right side. The patient underwent neck exploration and the FB; fish bone was successfully retrieved with external approach. Expedient treatment of FB is key to minimizing secondary injuries, as there is evidence that increased time of impaction of FBs is related to increased risk of complications, including esophageal perforation, extra luminal migration, mediastinitis, abscess, and vascular injury.²⁰ Even if the FB is not retrieved successfully, at times the rigid endoscopy can be helpful in dislodging an impacted foreign body which then on intraluminal migration can be expelled from the body as seen in our patient (Case 2). The efficient treatment of retropharyngeal abscess along with control of comorbidities like diabetes mellitus, electrolyte imbalance is significant in early recovery and reduction of morbidity. The failure of rigid endoscopy is generally due to non-visualization of the FB which is either too distal or due to over-riding of the rigid scope over the FB. It can also fail if the FB either migrates extraluminally or is dislodged intra-luminally. The surgical approach then required would vary according to the location of the foreign body. Serious complications caused by rigid endoscopy are extremely rare; 1.3% in the series by Hariga et al and include iatrogenic esophageal perforation, perioesophageal abscess or mediastinitis, which must be controlled by antibiotics and if necessary, by incision with drainage.¹⁶ In our study one patient with an impacted denture in the esophagus developed oesophageal perforation (Case 3) in the immediate post operative period. Early diagnosis and timely intervention; exploratory thoracotomy and laparotomy helped save the life of the patient. The patient recovered but required prolonged hospital stay before discharge. Patients with a suspected esophageal perforation post endoscopy should be regarded as critically ill and an aggressive diagnostic approach must be adopted to confirm diagnosis and initiate treatment. Nil per mouth, intravenous fluids, appropriate pain treatment, broad-spectrum antibiotics intravenously must be started and oxygen saturation should be monitored. Appropriate observation and management of these patients usually requires the resources of an intensive care unit along with careful and close surgical guidance and post-surgery surveillance.²¹ While most surgical diseases of the oesophagus are treated by gastroenterology surgeons or thoracic surgeons, depending on the country and institution where the patient is being treated, the attending surgeon should be familiar with basic treatment principles and with the interventions that should be considered depending on the individual presentation. It is key to determine the need for acute surgery or for alternative interventions in a timely manner.²²

CONCLUSION

Foreign bodies of the hypopharynx and esophagus are among the common emergencies seen by an otolaryngologist. Every new case poses a clinical challenge with want of sufficient evidence to support surgical decision-making. Migration of FBs, FBs in mentally challenged patients, alcoholics, FBs mimicking ossified cartilage with difficulty in diagnosis and those with esophageal perforation post endoscopy; are among the few challenges faced that are highlighted in this study. A high index of suspicion among patients presenting with dysphagia, neck pain and sudden decrease in food intake is warranted. Early diagnosis with appropriate imaging modalities is essential for confirmation of diagnosis and site of the FB. Dentures are among FBs that necessitate more caution with need for multi-disciplinary approach where deemed necessary. Rigid endoscopy still has its place as a reliable therapeutic option especially among high-risk patients, those with complications and with previously failed attempts at removal of FB. Every otolaryngologist must be sufficiently trained in early recognition of suspicious symptoms and signs of esophageal perforation that is crucial for prompting the appropriate diagnostic steps. The timely diagnosis and choice of optimal treatment strategy, whether surgical or non-surgical in managing patients with esophageal perforation; a life-threatening complication post endoscopy is critical in reducing the mortality and morbidity. Patient education and prevention with advice on immediate medical attention on suspicion of FB ingestion and avoidance of ill-fitting dentures would reduce the prevalence of complications and likely morbidity.

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REFERENCES

1. Singh BH, Kantu M, Har-El G, Lucente FE. Complications associated with 327 foreign bodies of the pharynx, larynx and esophagus. *Ann Otol Rhinol Laryngol.* 1997;106:3014.
2. Nandi P, Ong GB. Foreign body in the esophagus: review of 2394 cases. *Br J Surg.* 1978;65:5-9.
3. Kumar AGN. Foreign bodies in esophagus: our experiences. *Int J Otorhinolaryngol Head Neck Surg.* 2019;5:83-7.

4. Webb WA. Management of foreign bodies of the upper gastrointestinal tract: update. *Gastrointest Endosc.* 1995;41:39-50.
5. Ambe P, Weber SA, Schauer M, Knoefel WT. Swallowed foreign bodies in adults. *Dtsch Arztebl Int.* 2012;109:869-75.
6. Peng A, Li Y, Xiao Z. Study of clinical treatment of esophageal foreign body induced esophageal perforation with lethal complications. *Eur Arch Otorhinolaryngol.* 2012;269:2027-36.
7. Bonadio WA, Jona JZ, Glicklich M, Cohen R. Esophageal bougienage technique for coin ingestion in children. *J Pediatr Surg.* 1998;23:917-8.
8. Iwata S, Mishima Y, Nishimura T. 615 cases with foreign bodies in the oesophagus and bronchotracheal tree during the last 10 years-as statistical analyses gathered from the departments of ENT of seven universities in the Tokai area in Japan. *J Jpn Bronchoesophagol.* 1996;47:510-25.
9. Pak MW, Lee WC, Fung HK, Hasselt CA. A prospective study of foreign-body ingestion in 311 children. *Int J Pediatr Otorhinolaryngol.* 2001;58:37-45.
10. Nwaorgu OG, Onakoya PA, Sogebi OA. Esophageal impacted dentures. *J Natl Med Assoc.* 2004;96(10):1350-53.
11. Agrawal D, Lahiri TK, Parmar A, Sharma S. Swallowed partial dentures. *Indian J dent Sc.* 2012;4(2):7-12.
12. A.A. Adeyemo and S.A. Ogunkeyede. Denture impaction in the oesophagus: correlation of site and duration of impaction with sequelae. *Ann Ibadan Postgraduate Med.* 2019;17(1):65-70.
13. Wu IS, Ho TL, Chang CC, Lee HS, Chen MK. Value of lateral neck radiography for ingested foreign bodies using the likelihood ratio. *J Otolaryngol Head Neck Surg.* 2008;37(2):292-6.
14. Anderson KL, Dean AJ. Foreign bodies in the gastrointestinal tract and anorectal emergencies. *Emerg Med Clin North Am.* 2011;29(2):369-400.
15. Senar AC, Dinu LE, Artigas JM, Larrosa R, Navarro Y, Angulo E. Foreign Bodies on Lateral Neck Radiographs in Adults: Imaging Findings and Common Pitfalls. *Radio Graphics.* 2017;37:323-45.
16. Hariga I, Khamassi K, Zribi S, Amor MB, Gamra OB, Mbarek C et al. Management of foreign bodies in the aerodigestive tract. *Indian J Otolaryngol Head Neck Surg.* 2014;66(1):220-4.
17. Pinto A, Muzj C, Gagliardi N, Pinto F, Setola FR, Scaglione M et al. Role of imaging in the assessment of impacted foreign bodies in the hypopharynx and cervical esophagus. *Semin Ultrasound CTMR.* 2012;33:463-70.
18. Hsu WC, Sheen TS, Lin CD. Clinical experiences of removing foreign bodies in the airway and esophagus with a rigid endoscope: A series of 3217 cases from 1970 to 1996. *Otolaryngol Head Neck Surg.* 2000;122(3):450-4.
19. Pang KP, Tan NG, Chia KH, et al. Migrating foreign body into the common carotid artery. *Otolaryngol Head Neck Surg.* 2005;132(4):667-8.
20. DePietro J, Devaiah A. Endoscopic removal of esophageal foreign body and drainage of thyroid abscess. *Am J Otolaryngol.* 2013;34(2):151-3.
21. Sepesi B, Raymond DP, Peters JH. Esophageal perforation: surgical, endoscopic and medical management strategies. *Curr Opin Gastroenterol.* 2010;26:379-83.
22. Søreide JA, Viste A. Esophageal perforation: diagnostic work-up and clinical decision-making in the first 24 hours. *Scand J Trauma Resusc Emerg Med.* 2011;19:66.

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