

## Silent Pneumomediastinum after Salmon Fish Ingestion - A Clinical Dilemma

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Esophageal perforation is a very rare occurrence because accidental swallowing of foreign bodies is uncommon in adults. Thus, perforation due to swallowing of a foreign body and subsequent development of pneumomediastinum is rarely encountered by physicians. We experienced such a case and described an adult male patient who had perforated esophagus after unintentional ingestion of a salmon fish bone [1]. The patient visited our emergency department complaining of difficulty in swallowing for 4 hours. A review of history revealed that he consumed a salmon fish 4 hours ago. A plain x-ray soft tissue neck revealed suspicion of mediastinal air tracking (Figure 1) and Computed tomography (CT) of neck confirmed the hyper dense concentric wall thickening of the upper esophageal lumen at the level of thoracic inlet and pneumomediastinum seen surrounding the trachea, bilateral hilar extending superiorly in to the neck, posterior to the right common carotid artery and inferiorly up to and surrounding the distal esophagus, also pneumomediastinum more pronounced around the level of aortic arch and below the thoracic duct. Conservative medical management was done with help of thoracic surgeon and discharged after 3 days with full recovery.

**Keywords:** Salmon Fish; Neck; Pneumomediastinum**Figure 1****Introduction**

Pneumomediastinum is a very fatal disease entity with high mortality and can occur after esophageal perforation following ingestion of a foreign body that is trapped and penetrates the esophagus. Iatrogenic injury of the esophagus from surgery or endoscopic procedure is the most common cause of perforation and ensuing pneumomediastinum, and injury from foreign body ingestion is a common cause of this serious medical condition. Esophageal perforation due to a foreign body usually occurs from swallowing sharp objects such as fish or chicken bones [1]. Although reports on salmon bone injured the esophagus without any interventions are sporadic, to date, reports on pneumomediastinum caused by esophageal rupture induced by salmon fish bone have not been published [2,3]. Time elapsed from the injury to initiation of treatment is the most significant factor that affects mortality after esophageal perforation [4,5].

In the present case, the patient visited the emergency 4 hours after ingestion of a salmon fish bone, which resulted in the perforation of the esophagus and pneumomediastinum. This is the first reported case, to our knowledge, of fishbone passage itself causing injury to thoracic esophagus and subsequent silent pneumomediastinum.

### Case Presentation

A 21 - year old young man presented to the emergency department with complaints of difficulty in swallowing 4 hours after he had ingested a salmon fish. On examination revealed body temperature of 36.8c, heart rate 86 bpm, respiratory rate 18 bpm, and blood pressure 116/75 mm Hg. Results of laboratory examinations were unremarkable. Indirect laryngeal examination showed normal, no pooling of saliva. Soft tissue neck lateral view radiography revealed air tracking to mediastinum and no evidence of foreign body. Computed tomography (CT) of neck confirmed no evidence of foreign body and the hyper dense concentric wall thickening of the upper esophageal lumen suggestive of sealed perforation of esophagus with intramural hematoma at the level of thoracic inlet and pneumomediastinum seen surrounding the trachea, bilateral hilar extending superiorly in to the neck, posterior to the right common carotid artery and inferiorly up to and surrounding the distal esophagus, also pneumomediastinum more pronounced around the level of aortic arch and below the thoracic duct (Figure 2-5). The patient had only difficulty in swallowing without any signs of pneumomediastinum. Patient advised strictly nil per mouth and managed along with thoracic surgeon. After two days of conservative medical management patient recovered completely and subsequently discharged home.



Figure 2



Figure 3



Figure 4

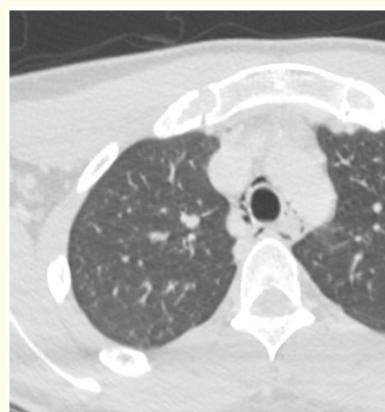


Figure 5

## Discussion

Most ingested fishbone can pass through the gastrointestinal tract without complication. However, some may impact or injure in the esophagus, mostly at the level of the cricopharyngeus muscle and the aortic arch in the cervical and thoracic esophagus. Perforation occurs in 1% to 4% of patients, and impacted fishbone must be removed as soon as possible [1,2]. In our scenario there was no impacted fishbone, but passage caused perforation of esophagus lead to pneumomediastinum which one of its rare condition in clinical practice. Although uncommon, fishbone penetration of the cervical esophagus may lead to abscess formation in the deep neck, thyroid, or epidural region [2,6,7]. Unusual vascular complications, including internal carotid artery puncture and internal jugular vein thrombophlebitis, have been described [2,8]. Fishbone penetration of the thoracic esophagus may cause mediastinitis or abscess, tracheoesophageal fistula, pneumomediastinum, pneumothorax, pericarditis, or cardiac tamponade [3,4,9]. To our knowledge, this is the first reported case of pneumomediastinum due to perforation of esophagus without fishbone impaction.

As seen in our case, fishbone can hardly be demonstrated on plain radiography because of the high kilo-voltage exposure [2,10]. However, as not revealed the fishbone, the presence of esophageal hematoma may have hampered definitive determination of whether the fishbone was located within the esophageal wall or the mediastinum.

## Conclusion

In summary, this report documents an unusual case of Esophageal abrasions secondary to ingested FB can often mimic impaction. FB sensations can persist for several hours even after the FB has passed the esophagus or has been removed endoscopically. In such cases, computed tomography (CT) can be a good alternative. If the FB penetrates the esophageal wall, a life-threatening pneumomediastinum can develop. Therefore, early and effective management by an otolaryngologist obviates fatal complications and the need for any major thoracic surgical intervention and procedure.

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