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Original article

## Management of fish bone impaction in throat – Our experiences in a tertiary care hospital of eastern India

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## ABSTRACT

**Objective:** To find out prevalence of accidental ingestion of fish bones and its management in a tertiary care hospital of eastern India.

**Materials & methods:** This is a prospective observational study. Three hundred thirty patients with complains of fish bone in throat who presented to the out patients department of Otorhinolaryngology and the emergency department of a Medical college between January 2008 to December 2015 were short-listed for study. Followed by conventional examination, most were subjected to endoscopic examination and removal. The parameters analyzed were age and sex distribution, clinical presentation, duration of symptoms, location of impaction, conventional and endoscopic removal techniques.

**Result:** Among three hundred thirty patients, no foreign body was found in eighty patients. Patients in age group of 21–30 years were affected mostly with almost equal sex distribution. Most patients presented with foreign body sensation in throat of short duration with precise finger point localization. Both conventional and endoscopic methods were employed with successful results but with definite advantage of endoscopic method.

**Conclusion:** Fish bone in throat is a common occurrence in Otorhinolaryngological practice. Fish bone impaction is a common foreign body in the pharynx. Endoscopic removal is distinctly more helpful than the conventional ones.

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### 1. Introduction

Fish bone is a common foreign body seen in upper digestive tract encountered at outpatient department of Otorhinolaryngology and emergency room.<sup>1</sup> Accidental ingestion of fish bone (Fig. 1) and its impaction in pharynx is very common among the fish eating communities in this coastal belt of eastern India. The common fish consumed in this belt are Rohu (Labeo rohita), Bhukti (Latus calcarifer), Hilsa (Tenuosa ilisha) besides others. If fish bone is not removed timely, it may lead to significant morbidity and complications like deep neck infection, mediastinitis, perforation of oesophagus, retropharyngeal hematoma, pyopneumothorax and even death.<sup>2</sup> All are having poorly radio-opaque bones and are therefore likely not to be seen on X-ray. The base of the tongue

pushes a bolus of food posteriorly during the act of swallowing and any sharp object hidden in that bolus may become embedded in the tonsil, the tonsillar pillar, the pharyngeal wall, or the tongue base itself. The correct diagnosis is best done with the help of fiber optic laryngopharyngoscope or rigid endoscope. Availability of rod lens telescope, video-endoscopy, varieties of forceps and safer anesthesia facility has facilitated removal of fish bone in throat. All patients who complain of a fish bone stuck in the throat should be taken seriously as a fish bone can perforate the oesophagus in only a few days leading to several complications. All possible fish bone in throat patients need to be subjected for endoscopy to avoid complications and morbidity. This study analyses the fish bone ingestion in our region and find out the safe and easy method to take out fish bone from throat at out patient department (OPD).

### 2. Material and methods

All the three hundred thirty patients presenting with complains of a pricking sensation in their throat or sharp pain in throat with a history of ingestion of fish in the Out patients department(OPD) of

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Fig. 1. Fish bone extracted from the patient.

Otorhinolaryngology and emergency department were included in this study between January 2008 and August 2016. This study was approved from the competent authority of our Institutional Ethics Committee. Patient's prescription tickets and case records were collected from the Medical Records Section and the data were entered in a prepared database and were analyzed. The parameters analyzed in this study were age and sex distribution, history of duration of complains symptoms and signs, diagnostic investigations, location of foreign body, removal techniques, removal on initial & subsequent visits. Removal of fish bone in throat was done in Outpatient department as a standard procedure under local anesthesia. In some cases however removal was done after investigations and under general anesthesia.

### 3. Results

Impaction of fish bone in throat most commonly seen in the age group of 21–30 years (48%), however fish bone was also found in throat in children as young as 1–10 years (4%) and in older people in the age group above 50 years (9%) (Table 1). Out of 250 patients with fish bone, 130 (52%) are males and 120 (48%) are females (Table 2). A *t*-test was compared between male and female cases of fish bone foreign body (FB). It was revealed that  $p = 0.8457$  which was statistically insignificant. Thus fish bone FB equally distributed in both gender. Early presentation is within 24 h irrespective of sites of fish bone impaction (Table 3). Most of the patients presented with foreign body sensation with finger point localization (87%) followed by pain in throat (74%) and pain during swallowing (58%) (Table 4). Foreign body lodged in oral cavity and tonsillar region in the oropharynx are easily diagnosed by careful

clinical examination under a good light source whereas pharyngolaryngoscopes are very much helpful in detecting foreign bodies in the tongue base and valleculae and some cases of cryptic fish bones in the tonsils (Table 5). Most fish bones are found to be lodged in the tonsillar region (31.6%) followed by tongue base (20.4%) and valleculae (18.4%) (Table 6). Conventional methods using head light, tongue depressor and different forceps helped to remove fish bones lodged especially in oral cavity (7.2%), tonsils (17.6%), but endoscopic removal is more convenient in cases of cryptic foreign bodies in tonsillar pillar region (10.4%) and tongue base (15.2%) as well as vallecular area (13.6%) (Table 7). For fish bone impaction at tonsils and below, the comparison of two techniques of conventional and endoscopic methods with *t*-test was carried out. It was revealed  $p = 0.03$  which is statistically significant. Thus endoscopic method is more effective in comparison to conventional technique. Out of 250 cases of fish bone impaction, 221 foreign bodies were removed on initial visit (88.4%) and only in 29 cases fish bones were removed on subsequent visit (Table 8). In total, 250 cases of fish bone FB identified out of 330 suspected cases with prevalence 75.75%.

### 4. Discussion

Impaction of fish bone at upper digestive tract is a common clinical problem in Otorhinolaryngology practice. The most common foreign body in upper digestive tract is fish bone.<sup>3</sup> Accidental ingestion of fish bone is very common in fish eating communities and usually the swallowed bone is small and sometime passes down the gut without consequences. Often fish bone if found to be stuck mostly in the throat or penetrating the mucosa of pharynx. In rare cases it may penetrate oesophagus or stomach<sup>4</sup> causing retropharyngeal abscesses,<sup>5–7</sup> or even penetrating the pericardium causing cardiac tamponade.<sup>8</sup> Hence careful inspection and endoscopic review should be followed in all cases. The common locations for fish bone lodgment are palatine tonsils, base of tongue and vallecula. Sharp foreign bodies like fish bone when ingested, often cause abrasion to pharyngeal mucosa and may cause perforation to the wall of the oesophagus.<sup>9</sup> The patient should be thoroughly examined with a complete visual inspection of the oral cavity, oropharynx and hypopharynx. Out of a total of three hundred thirty cases who attended the hospital with complains of fish bone in throat, in eighty patients (24.2%) no foreign body was found and their symptoms settled. In 80% of these cases this had occurred by 48 h. It is likely that their symptoms were due either to minor abrasions to the mucosa which healed rapidly and spontaneously or possibly an undetected fish bone passing down without any harm.<sup>10</sup> In this study, 24.2% of patients presenting with symptoms of an impacted fish bone had no demonstrated pathology, and their symptoms resolved in 48 h where as 76.8% per cent did have an impacted fish bone, and 56% of these were easily identified and removed on initial visit by endoscopic method and rest were removed by conventional methods. In our study, fish bone

Table 1

Table showing fish bone by site and age group.

Site	1–10 years	11–20 years	21–30 years	31–40 years	41–50 years	Above 50 years	Total
Oral cavity		11	5		2		18 (7.2%)
Tonsil	4	11	41	14	6	3	79 (31.6%)
Tonsillar pillar		3	20	14	3	1	41 (16.4%)
Pharyngeal wall			8	4	1		13 (5.2%)
Tongue base		7	27	15	2		51 (20.4%)
Vallecula			19	17	7	3	46 (18.4%)
PYRIFORM SINUS						1	1 (0.4%)
Oesophagus						1	1 (0.4%)
Total	4 (1.6%)	32 (12.8%)	120 (48.0%)	64 (25.6%)	21 (8.4%)	9 (3.6%)	250 (100%)

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