

## Original Research Article

# Clinical profile of cases of dysphagia presenting in ENT department: a study from rural tertiary care center

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## ABSTRACT

**Background:** Swallowing is a complex motor reflex requiring coordination among the neurologic system and muscles of the oropharynx and oesophagus. Disorders both benign and malignant may interfere with the process and cause dysphagia. We hereby undertake a study in a rural tertiary care centre to study the clinical profile of cases of dysphagia and to find the relative incidence of various etiologies of dysphagia.

**Methods:** A prospective study was conducted upon both out and indoor patients coming to Department of Otorhinolaryngology from January 2016 to January 2017 with predominant symptom of difficulty in swallowing for both solids, liquids or either. Detailed history & examination was done. Further endoscopy, barium swallow, fine needle aspiration cytology (FNAC) & biopsies were done as required. A total of 140 cases were taken into consideration.

**Results:** The mean age was 52.5 years with 60% patients males and 40% females. The commonest etiology of dysphagia was Gastroesophageal reflux disease (GERD) occupying 28.57% of cases. Among them 65% were females majority in the age group of 45-55 years. The 2<sup>nd</sup> common cause of dysphagia was growth pharynx 18.5% of cases. Among them 19 cases were diagnosed as growth oropharynx and 7 cases as growth supraglottis extending to hypopharynx. 88.46% were males and all were smokers. The 3<sup>rd</sup> common etiology of dysphagia was obstructive oesophageal causes which included oesophageal malignancies, oesophageal webs, strictures and diverticula in the frequency of 16%, 3%, 3% and 6% respectively. Oesophageal malignancies were mainly adenocarcinoma, all males who were chronic smokers.

**Conclusions:** Dysphagia is a commonly encountered clinical problem & limited studies exist regarding the prevalence of dysphagia etiologies. It is an alarm symptom, malignancy should be ruled out, and warrants early intervention.

**Keywords:** Dysphagia, Endoscopy, GERD

## INTRODUCTION

Swallowing involves coordination of sequence of activation & inhibition for more than 25 muscles of mouth, pharynx, larynx & oesophagus.<sup>1</sup> These include intrinsic & extrinsic group of tongue muscles, pterygoid muscles, supra & infra hyoid muscles, velopharyngeal

closure muscles, muscles of pharyngeal wall & temporo mandibular joint. Thus, oral cavity, pharynx & oesophagus are the main areas involved in the act of swallowing.

The normal swallow in humans was originally described with a three-stage sequential model. The swallowing process was classified into oral, pharyngeal, and

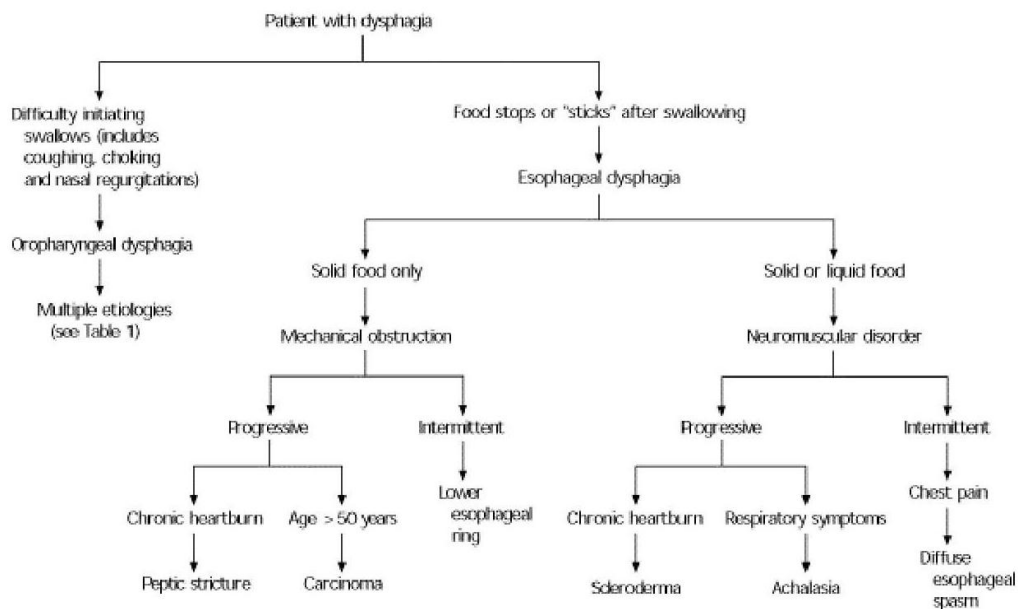
oesophageal stages according to the location of the bolus.<sup>2,3</sup> The oral stage was later subdivided into oral preparatory and oral propulsive stages, and the four stage model was established. Studies based on the four stage model adequately describe biomechanics and bolus movement during command swallows of liquids. However, this model cannot represent the bolus movement and the process of eating of solid food. Therefore, the “Process Model of Feeding” was established to describe the mechanism of eating and swallowing of solid food.<sup>4,5</sup> The extent and pattern of movement of the hyoid bone & the epiglottis during swallowing were different according to etiology of dysphagia.<sup>6</sup>

Swallowing is a complex motor reflex requiring coordination among the neurologic system, the oropharynx and the oesophagus. A number of disorder both benign and malignant, interfere with the swallowing

process and cause dysphagia. Patients with dysphagia suffer significant social and psychological burden associated with their symptoms of difficulty with swallowing, including anxiety with meals or avoidance of eating with others.

The diagnosis and subsequent treatment of dysphagia is important because of the associated morbidity and mortality. Untreated dysphagia can lead to dehydration, malnutrition, respiratory infections and death. The elderly with symptoms of dysphagia are at increased risk of the complications of dysphagia, including aspiration pneumonia. Several studies have identified the elderly as being at risk for the development of dysphagia.<sup>7,8</sup>

Classifying dysphagia as oropharyngeal or oesophageal and obstructive or neuromuscular symptom complexes leads to a successful diagnosis in 80 to 85 percent of patients (Figure 1).



**Figure 1: Etiological classification of dysphagia.**

Based on the patient history and physical examination, barium oesophagram and/or gastro-oesophageal endoscopy can confirm the diagnosis. Special studies and consultation with subspecialists can confirm difficult diagnoses and help guide treatment strategies.

We hereby present a result of prospective study on patients of dysphagia, presenting in ENT department.

## METHODS

This study was conducted upon both out and in patients coming to department of ENT from January 2016 to January 2017 with predominant symptom of difficulty in swallowing for both solids, liquids or either. Detailed history regarding onset, duration, severity, progression was undertaken. They were specifically asked for habit of

smoking, alcohol intake and tobacco chewing. Patient’s general health information was also reviewed including long term illnesses (Diabetes Mellitus, Hypertension) and current medications. The general physical examination & focused organ or symptom specific examinations based on the patients history was done. Detailed Head & Neck examination with special emphasis on oral cavity, oropharynx and laryngoscopy was done. Neurological examination was done to rule out central nervous lesion. The findings were noted in the proforma.

To identify the etiology of dysphagia barium swallow and upper gastrointestinal endoscopy was done. A barium study (oesophagram) was the first step in evaluating patients with dysphagia, especially if an obstructive lesion is suspected. It identified intrinsic and extrinsic structural lesions but lacked precision in identifying the

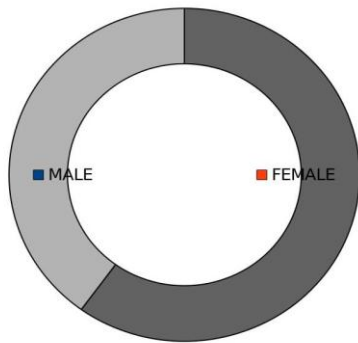
nature of obstructive lesions. Barium sulphate is the metallic compound used for barium swallow. Patient was asked to take low fiber diet for 2 to 3 days prior to barium and was kept nil orally after midnight on the previous day. About one and a half cup of barium preparation was given to patient and X-ray films were taken immediately after swallowing then after 1, 5 and 10 min later.

Gastro-oesophageal endoscopy was done, as it provides the best assessment of the esophageal mucosa, allows undertaking biopsy of suspicious looking lesion. Direct laryngoscopy was particularly useful in evaluating patients with oropharyngeal dysphagias to identify any obstructive mass and take biopsy. Fine needle aspiration cytology of any neck swelling and biopsy, if required were done. Computed tomography (CT) & Magnetic resonance imaging (MRI) were done wherever required.

A total of 140 cases above 18 year of age and presenting with complaint of dysphagia were taken into consideration. Below 18 year of age, coming with complaint of dysphagia were not included in the study to avoid cases of foreign body ingestion and craniofacial anomalies. Also not included in the study were patients with neurological cause of dysphagia and globus pharyngeus..

**RESULTS**

Out of the total 140 patients 84 were males (60%) and 56 were females (40%), (Figure 2).

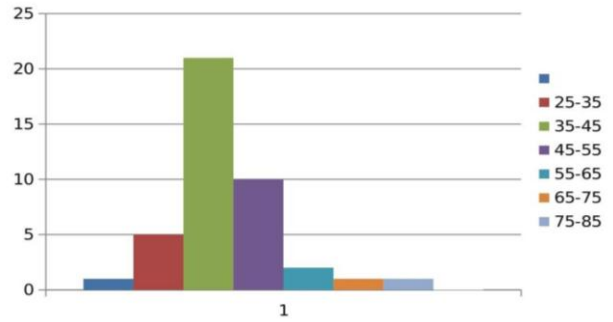


**Figure 2: Gender ratio in patients of dysphagia.**

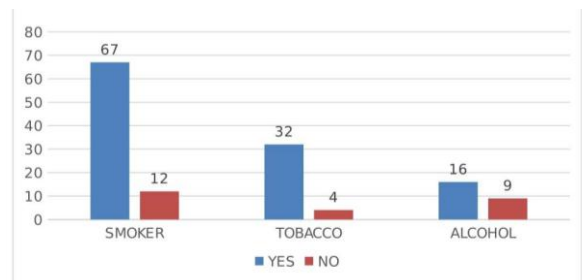
Maximum cases of dysphagia were seen in age group of 35-45 years (Figure 3). Second most common were 45-55 years.

76 patients were smokers (Figure 4). Among them 70 were males and 6 were females. History of tobacco chewing was positive in 69 patients. Among them 54 were males and 15 were females. History of alcohol

intake was observed in 55 cases. Among them 50 were males and 5 were females.

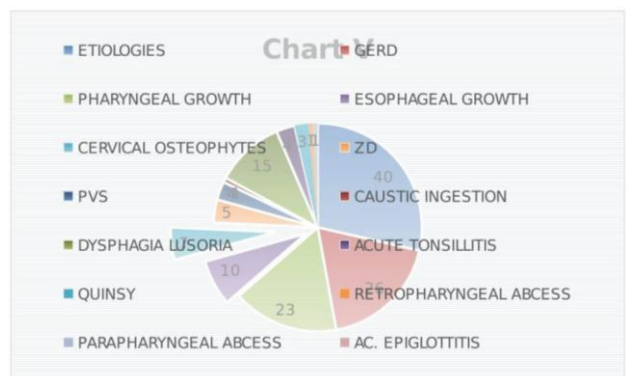


**Figure 3: Age wise distribution of patients of dysphagia.**



**Figure 4: Showing personal habit of tobacco and alcohol usage in patients of dysphagia.**

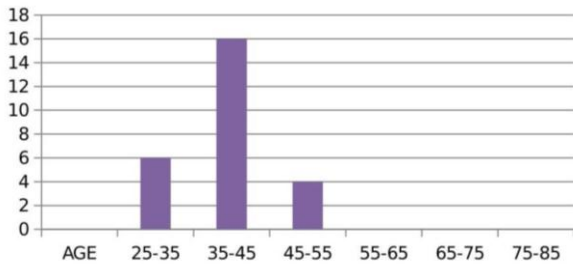
45 patients were addicted to all three that is smoking, alcohol and tobacco chewing. Among males smoking was the commonest and among females tobacco chewing was the commonest personal habit in our study. Only 5 males and 30 females were not involved in any of the three addictions.



**Figure 5: Showing etiology of dysphagia in our cases.**

We divided the different etiologies of dysphagia into pharyngeal and oesophageal causes (Figure 5). The former occupied 35.71% cases and the later 64.28% of cases. Among the pharyngeal causes 26 cases of growth pharynx were observed (18.5%). Among them 88.4% of cases were males.

The age group commonly involved was 45-55 years (Figure 6). 19 cases were diagnosed as squamous cell carcinoma of oropharynx region and 7 cases were diagnosed to have squamous cell carcinoma supraglottis extending to hypopharynx.



**Figure 6: Showing age wise distribution of malignant cases of dysphagia.**

The inflammatory causes involving the pharynx were seen in 24 cases (17.14%). Maximum cases were attributed to acute tonsillitis 15 cases. We observed quinsy 4 cases, retropharyngeal abscess 3 cases, para pharyngeal abscess and acute epiglottitis 1 case each.



**Figure 7: Barium swallow showing growth in lower oesophagus.**

Among the oesophageal causes malignancy occupied 23 cases (16.4%) and the non-malignant causes occupied 67 cases (47.85%). Among the malignant causes adenocarcinoma of lower one third of oesophagus was commonest in our study (Figure 7).

Among the non-malignant causes GERD was commonest seen in 40 cases (28.57%). There was a predominance of female patients (65%) in this etiological group. GERD was commonly seen in the age group of 35-45 years.

Dyphagia attributed to cervical osteophytes was noted in 10 cases (Figure 8).



**Figure 8: X-ray soft tissue neck lateral view showing anterior osteophyte pressing onto pharynx.**

Zenker's diverticulum was held responsible in 7 cases (Figure 9).



**Figure 9: Barium swallow showing pharyngeal diverticulum.**



**Figure 10: Barium swallow showing benign stricture middle oesophagus.**

Features of Plummer Vinson Syndrome (PVS) were noted in 5 cases. Dysphagia because of corrosive caustic ingestion was noted in 4 patients (Figure 10).

Dysphagia lusoria as one of the etiologies was noted in one case.

## DISCUSSION

Dysphagia is a commonly encountered clinical problem & limited data exist regarding the prevalence of dysphagia etiologies.<sup>7</sup> It is considered an alarm symptom, raising the question of stricture or malignancy and an indication for early endoscopy.<sup>8</sup>

In our study a total of 140 patients were taken into consideration and the mean age of the patients included in the study was 52.5 year with 51% of patients being men. A study on temporal trends in dysphagia etiologies found mean age of the patients to be 53.5 years with 43% of patients being men.<sup>9</sup>

Gastroesophageal reflux disease (GERD) is a clinical manifestation of the excessive reflux of acidic gastric contents into the esophagus causing various degree of symptomatic irritation or injury to the esophageal mucosa.<sup>10</sup> Typical symptoms of GERD include heartburn, regurgitation and dysphagia.<sup>11</sup> In our study the etiology of dysphagia was attributed to GERD in 40% of cases. This is similar to the study conducted by Kidambri et al where commonest cause of dysphagia was GERD.<sup>9</sup>

The majority of patients in our study of dysphagia because of GERD were females. In a study conducted on dysphagia in gastroesophageal reflux disease, had 58.73% of female patients.<sup>12</sup>

Another study concluded that dysphagia is common in patients with erosive oesophagitis but is not a reliable clinical predictor of severe erosive oesophagitis.<sup>13</sup> They revealed that dysphagia is common in uncomplicated reflux disease. Dysphagia was reported by more than one third of the 11,945 patients with reflux-associated erosive oesophagitis enrolled. Most of the patients were male (57%–62%), with average ages ranging from 45–47.4 years.

Devault KR in their study found that non obstructive dysphagia related to GERD was diagnosed by the exclusion of oesophageal stricture and response of dysphagia to treatment of acid reflux with proton pump inhibition (PPI).<sup>14</sup> This is in accordance to our study, where the diagnosis of GERD was made after carefully excluding obstructive pathology and such patients responded well to PPI treatment.

In our study, 2<sup>nd</sup> most common cause of dysphagia was growth oropharynx. Among the oropharyngeal causes, growth supraglottis extending to hypopharynx was the leading cause occupying 21% of cases &

majority being males & smokers. This could be attributed to the fact that our study was conducted on patients presenting primarily to ENT out and in patient department, in a rural tertiary care hospital.

The study conducted on multidisciplinary evaluation and management of dysphagia concluded that majority of patients of dysphagia were referred by otolaryngologists, endoscopic evaluation was normal for 28% of them & pooling was the most frequent abnormality encountered.<sup>15</sup> Most common etiologies were Laryngopharyngeal reflux (LPR) (22%) & malignancy (21%).

In our study, 3<sup>rd</sup> most common cause of dysphagia was obstructive oesophageal causes which included oesophageal malignancies, oesophageal webs, strictures and diverticula, 16%, 3%, 3% and 6% respectively. Oesophageal malignancies were found in 16% cases mainly adenocarcinoma & nearly all of them were males and this is similar to previous studies.<sup>14</sup> All the males were chronic smokers.

In our study oesophageal web was found in 3% of cases and it was found in combination of other symptoms of Plummer Vinson Syndrome. Plummer-Vinson or Paterson-Kelly syndrome presents as a classical triad of dysphagia, iron deficiency anemia and oesophageal webs. The dysphagia is usually painless and intermittent or progressive over years, limited to solids and sometimes associated with weight loss. Symptoms resulting from anemia (weakness, pallor, fatigue and tachycardia) may dominate the clinical picture. Additional features are glossitis, angular cheilitis and koilonychia. Most of the patients are white women, in the fourth to seventh decade of life but the syndrome has also been described in children and adolescents.<sup>16,17</sup> The rapid fall in prevalence of the syndrome in the latter part of the 20th century has paralleled an improvement in nutritional status, including widespread addition of iron to flour.

Dysphagia caused by anterior cervical osteophytic hypertrophy was found in 10% of our cases in our study. Anterior cervical hyperosteoehyptosis (ACH) describes the excessive formation of osteophytes along the ventral spine. Dysphagia due to ACH is considered an uncommon entity described mainly in case reports. Symptomatic ACH has been attributed to multiple etiologies including diffuse idiopathic skeletal hyperostosis (DISH), trauma, postlaminectomy syndromes and cervical spondylosis.<sup>18,19</sup>

In a study on dysphagia due to anterior cervical hyperosteoehyptosis, it was concluded that DISH and spondylosis are the most common etiologies accounting for ACH-induced dysphagia. Majority of patients were male, and the mean age was 65.1 years.<sup>20</sup> In contrast to the above study, there was female preponderance that too in the middle age group for this cause of dysphagia in our study.

Corrosive oesophageal injury causing strictures was found in 3% of our cases in our study with female preponderance which presented with dysphagia after 2-3 weeks of ingestion. All 4 cases were suicidal attempts. Increase in incidence has been found because of introduction of strong alkalis and cleaning agents.<sup>21</sup>

In a study on seventeen patients who ingested liquid caustics, 12 complained of dysphagia. They were reviewed for location, extent, severity, and outcome of the mucosal injury.<sup>22</sup>

The majority of caustic acid ingestions in adults was associated with suicide attempts and usually involves strong acids.<sup>23,24</sup>

Zenker's diverticulum (ZD) is an uncommon but highly treatable cause of dysphagia. It is more prevalent in men than in women and typically presents in the seventh and eighth decades of life. ZD is a pulsion diverticulum through a dehiscence at Killian's triangle between the oblique and transverse fibers of the inferior pharyngeal constrictor. The transverse fibers are also called the cricopharyngeus, which is the primary muscle comprising the upper oesophageal sphincter. Dysphagia and regurgitation are the most common symptoms of ZD, with an incidence of 80% to 100% and 57% to 78%, respectively. The definitive diagnosis of ZD is made with a radiologic study demonstrating the diverticulum in the appropriate location filled with contrast material.<sup>25</sup>

Pharyngeal diverticula causing dysphagia was found in 6% of cases. In the United Kingdom, the incidence of ZD is about 2 per 100,000 people per year.<sup>25</sup> Notably, these data reflect symptomatic patients, so the number of asymptomatic patients with ZD is unknown. Symptoms may be present for weeks to years before a diagnosis is made. Although a plethora of symptoms have been ascribed to ZD, 80% to 90% of patients complain of dysphagia.

Dysphagia caused by dysphagia lusoria was found in 1% of our study & was due to aberrant subclavian artery. Focken et al conducted endoscopy for various reasons & found lusorian artery in 0.4% cases.<sup>26</sup>

A tuberculous retropharyngeal abscess is a very rare condition and can be the cause of oropharyngeal dysphagia.<sup>27</sup> Retropharyngeal abscess primarily occurs in children, but it can also be seen in adults, although it is quite rare. It is usually associated with direct extension from adjacent structures, penetrating trauma, granulomatous disease and cervical spine spondylodiscitis.<sup>28</sup> The retropharyngeal space is a potential space bounded anteriorly by the pharyngeal muscles and their investing fascia and posteriorly by the alar layer of the prevertebral fascia. It extends from the skull base into the mediastinum, whereas laterally, it is bounded by the carotid sheath. This space contains 2 vertical paramedian chains of lymph nodes that drain

lymph from the oropharynx, teeth, maxillary sinuses, and ears and regress by the age of 6 years.<sup>29</sup> Acute retropharyngeal abscess is seen in children caused by spread of infection and suppuration of these nodes.<sup>30</sup> In adults, it may arise as a result of a direct infection caused by some penetrating injury or foreign body. Chronic retropharyngeal abscess is usually seen in adults and is caused by a tuberculous infection of the cervical spine as pus spreads directly through the anterior longitudinal ligament.<sup>31</sup> Alternatively, it may be due to tuberculous process involving the retropharyngeal lymph nodes. The classic symptoms of patients with retropharyngeal abscess are dysphagia, odynophagia and airway obstruction.<sup>31</sup> In more severe cases, external neck swelling or neck rigidity may be present. Sometimes, hoarseness and stridor may also develop either due to anterior displacement of the posterior pharyngeal wall by the abscess or secondary laryngeal edema.<sup>32</sup> It was found in 2% cases in our study.

Peritonsillar abscess remains the most common deep infection of the head and neck. The condition occurs primarily in young adults 20 to 40 years of age, most often during November to December and April to May, coinciding with the highest incidence of streptococcal pharyngitis and exudative tonsillitis.<sup>33</sup> A peritonsillar abscess is a polymicrobial infection, but Group A streptococcus is the predominate organism. Symptoms generally include fever, malaise, sore throat, dysphagia and otalgia. Physical findings may include trismus and a muffled voice "hot potato voice".<sup>34</sup> Peritonsillar abscess causing dysphagia was found in 2% cases in our study.

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