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STUDY OF ENDOSCOPIC DIAGNOSIS OUTCOMES IN PATIENTS SUFFERED FROM DYSPHAGIA

Dr. Abhay Kumar[1], Dr. Nandani[2], Dr. Nipendra Kishore[3], Dr. Anil[4]
[1]Associate Professor, Dept. of General Surgery, Govt. Doon Medical College, Dehradun, Uttarakhand, India.
[2]Tutor, Dept. of Biochemistry, Govt. Doon Medical College, Dehradun, Uttarakhand, India.
[3]Assistant Professor, Dept. of Orthopaedic Surgery, Medhubani Medical College, Madhubani, Bihar, India.
[4]Associate Professor, Dept. of Biochemistry, Tirthankar Medical College, Moradabad, UP, India.

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Corresponding author: Dr. Anil
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Abstract

Swallowing problems (dysphagia) can occur at any point in the process of moving food, liquid, or saliva from the mouth through the throat (pharynx), into the esophagus and to the stomach. These problems may result in poor nutrition, dehydration or aspiration (accidental ingestion of food particles or fluids into the lungs). Dysphagia reduces quality of life. Swallowing disorders are often accompanied by voice impairment (dysphonia) as well. The central goal of the Clinic is to provide comprehensive evaluation and management of dysphagia and related disorders and improve quality of life. Hence based on above findings the present study was planned for Study of Endoscopic Diagnosis Outcomes in Patients Suffered from Dysphagia.

The present study was planned in Department of General surgery, Government Doon Medical College, Dehradun, Uttarakhand, India. The study was conducted from January 2017 to October 2017. In the Present study 50 cases diagnosed with the dysphagia were enrolled and evaluated. The diagnosis was confirmed by biopsy taken during endoscopy and sent for histopathological examination. Patients were treated accordingly.

The data generated from present study concludes that Squamous cell carcinoma of oesophagus was found to be the most common cause of dysphagia which can be due to rising incidence of gastro esophageal reflux disease or Barret's esophageous. Hence role of endoscopy is much valuable in detecting these premalignant conditions to prevent this manifestation.

Keywords: Dysphagia, Endoscopy, Carcinoma esophagus, etc.

Introduction

As typically defined, dysphagia is a condition in which disruption of the swallowing process interferes with a patient's ability to eat. It can result in aspiration pneumonia, malnutrition, dehydration, weight loss, and airway obstruction. The goals of dysphagia treatment are to maintain adequate nutritional intake for the patient and to maximize airway protection.

The term dysphagia, a Greek word that means disordered eating, typically refers to difficulty in eating as a result of disruption in the swallowing process. Dysphagia can be a serious health threat because of the risk of aspiration pneumonia, malnutrition, dehydration, weight loss, and airway obstruction, and it exerts a large influence on the outcome of rehabilitation (eg, length of hospital stay, mortality/morbidity). [2]

Dysphagia can be secondary to defects in any of the 3 phases of swallowing, which are as follows [3] : Oral phase: Which involves the oral preparatory phase and the oral transit phase; Pharyngeal phase; Esophageal phase. A number of etiologies have been attributed to dysphagia in populations with neurologic and nonneurologic conditions.

Dysphagia should be differentiated from disorders that prevent transfer of food to the mouth or beyond the stomach but that are not characterized by difficulty swallowing. For example, feeding disorder, which is the inability to get food to the mouth, and gastric outlet obstruction, which is the inability of food to pass from the stomach into the small intestine, are not types of dysphagia. On average, 10 million Americans are evaluated for swallowing disorders annually. Advances have been made in the treatment of swallowing disorders, especially with regard to dysphagia-related malnutrition, and with the available tests and management options for swallowing disorders, the prognosis for patients with dysphagia has improved.

An understanding of the anatomy and physiology of the areas of the body affected by dysphagia is of paramount importance in the diagnosis and management of swallowing disorders (see the image below). Early involvement of specialists such as nutritionists, gastroenterologists, general surgeons, speech-language

therapists, and ear, nose, and throat (ENT) surgeons offers a good prognosis for the management of swallowing disorders. Certain factors make dysphagia in children unique. Successful oral feeding and growth in infants and children depend not only on functional deglutition but also on a broad range of neurodevelopmental skills involving sensory systems, cognition, communication, and gross and fine motor behaviors. [4, 5]

Prematurity by itself and neurologic impairment (eg, cerebral palsy) are common causes of dysphagia in young patients. Children with cerebral palsy typically manage solid boluses more easily than they do liquid boluses and manage small liquid boluses more easily than large liquid boluses. Congenital structural lesions (eg, choanal atresia, cleft lip and palate, craniofacial syndromes) can interfere with normal anatomic transport of a bolus. [6] Prosthetic devices or adaptive feeding equipment may be necessary.

Gastroesophageal reflux disease (GERD) is a common problem in children. Choking, food refusal, and food "getting stuck" are nonspecific symptoms that may arise because of reflux and esophagitis. Childhood achalasia appears to be more common in boys than in girls. Regurgitation of food and dysphagia are the most common symptoms. In about 18% of patients, symptoms begin during infancy. Management of pediatric dysphagia requires a special approach. Cognitive, developmental, and behavioral issues can affect the treatment options. Treatment does not necessarily imply feeding therapy. Tone abnormalities, postural control, adverse behavior, and primitive reflexes should be managed. Hypoxemia can occur while a child with dysphagia eats, so pulse oximetry during mealtime can be useful. [7]

The prevalence of dysphagia increases with age, making dysphagia is a major health-care problem in elderly patients. Normal aging alters some aspects of the swallowing function; problems include increased oral and pharyngeal transit times, poor bolus control and coordination, increased magnitude and duration of pharyngeal pressures, and increased incidence of pharyngeal residue after swallowing. [8]

Deglutition is the act of swallowing, which allows a food or liquid bolus to be transported from the mouth to the pharynx and esophagus, through which it enters the stomach. Normal deglutition is a smooth, coordinated process that involves a complex series of voluntary and involuntary neuromuscular contractions and typically is divided into distinct phases: oral, pharyngeal, and esophageal. Each stage facilitates a specific function; if the stages are impaired by a pathologic condition, specific symptoms may result. The process of swallowing is organized with sensory input from receptors in the base of the tongue, as well as in the soft palate, faucial arches, tonsils, and posterior pharyngeal wall; this input is transmitted to the swallowing center, located within the pontine reticular system, through the facial (VII), glossopharyngeal (IX), and vagus (X) cranial nerves.

Information from the swallowing center then is conveyed back to the muscles that help in swallowing through trigeminal (V), facial (VII), glossopharyngeal (IX), vagus (X), and hypoglossal (XII) cranial nerves, with the trigeminal, hypoglossal, and nucleus ambiguus constituting the efferent levels. The act of swallowing usually interrupts the expiratory phase of ventilation, while the completion of expiration occurs when swallowing ends. In situations in which the swallowing is initiated during the inspiratory phase of ventilation, a brief expiration ensues after the completion of swallowing.

Stroke patients recover swallowing function gradually, and therapeutic interventions for dysphagia generally are successful. In a prospective investigation of 128 patients admitted because of acute stroke, a swallowing abnormality was detected in 51% on clinical examination and in 64% on videofluoroscopy at initial presentation. [9] At 6 months after stroke, 87% of patients had returned to their prestroke diet.

In conditions in which recovery is possible (eg, TBI, stroke), the normalization of swallowing may take from 3 weeks to approximately 6 months or longer. [10] Many patients tolerate normal oral caloric intake 9 months after a stroke, while some may require partial or nonoral caloric supplementation. In patients who have sustained a stroke, continued swallowing dysfunction after 6 months is associated with increased morbidity and mortality. In static or progressive conditions (eg, neuromuscular disorders, postpolio syndrome), periodic evaluation of swallowing disorders is mandatory, especially with the onset of new symptoms, and the appropriate strategies (the use of nonoral feeding techniques or new compensatory mechanisms) should be considered.

Pneumonia accounts for about 34% of all stroke-related deaths and represents the third highest cause of death during the first month after a stroke. Although not all of these cases of pneumonia are attributable to the aspiration of food, the early detection and treatment of dysphagia in patients who have sustained a stroke is nonetheless very critical. [11] In a study of 124 patients with acute stroke, 39% of them had failing results on initial swallow screening. [12] However, because of early management (eg, altered dietary texture) of their dysphagia, no patients developed aspiration pneumonia. Early swallow screening and dysphagia management in patients with acute stroke reduces their risk of aspiration pneumonia, is cost effective, and helps to ensure good-quality care with optimal outcomes.

Patients who have had a stroke are likely to decrease their dietary intake, which increases their risk of malnutrition or exacerbates existing malnourishment. [13] In an investigation of the nutritional status of patients with stroke who were admitted to a rehabilitation service, 49% had malnutrition, and 65% of those with dysphagia were malnourished. [14]

In another study, no differences were found in the nutritional parameters of patients admitted for stroke with or without dysphagia on admission. However, after 1 week, 48.3% of the patients with dysphagia were malnourished, compared with only 13.6% of those without dysphagia. Malnutrition is a risk factor for pneumonia because it renders the person susceptible to altered colonization in the oropharynx and reduced resistance to infection by depressing the immune system. Malnutrition may also lead to lethargy, weakness, and reduced alertness, all of which may increase the probability of aspiration. In addition, malnutrition may reduce the strength of cough and mechanical clearance in the lungs.

A study by Gourin et al indicated that dysphagia-associated malnutrition is a significant risk factor for health outcomes in patients with head and neck cancer. In a study of 93,663 patients treated with ablative therapy for malignant neoplasms of the oral cavity, larynx, hypopharynx, or oropharynx, the investigators found that dysphagia was the most significant of several factors related to weight loss in these patients. The study also indicated that an association exists between weight loss and increases in medical and surgical complications, as well as in length of hospital stay and hospital-related costs, in patients who undergo head and neck cancer surgery. [15]

Dysphagia can potentially lead to dehydration, while dehydration may itself be a risk factor for pneumonia for several reasons. First, it decreases salivary flow, which promotes altered colonization of the oropharynx; second, it may lead to lethargy, mental confusion, and increased aspiration; and third, it makes the person susceptible to infection by depressing the immune system.

Swallowing problems (dysphagia) can occur at any point in the process of moving food, liquid, or saliva from the mouth through the throat (pharynx), into the esophagus and to the stomach. These problems may result in poor nutrition, dehydration or aspiration (accidental ingestion of food particles or fluids into the lungs). Dysphagia reduces quality of life. Swallowing disorders are often accompanied by voice impairment (dysphonia) as well. The central goal of the Clinic is to provide comprehensive evaluation and management of dysphagia and related disorders and improve quality of life. Hence based on above findings the present study was planned for Study of Endoscopic Diagnosis Outcomes in Patients Suffered from Dysphagia.

Methodology:

The present study was planned in Department of General surgery, Government Doon Medical College, Dehradun, Uttarakhand, India. The study was conducted from January 2017 to October 2017. In the Present study 50 cases diagnosed with the dysphagia were enrolled and evaluated. The diagnosis was confirmed by biopsy taken during endoscopy and sent for histopathological examination. Patients were treated accordingly.

All the patients were informed consents. The aim and the objective of the present study were conveyed to them. Approval of the institutional ethical committee was taken prior to conduct of this study. Following was the inclusion and exclusion criteria for the present study.

Inclusion Criteria: Cases diagnosed with the dysphagia

Exclusion criteria: Diagnosed malignant cases and inflammatory conditions requiring antibiotics, surgical intervention, chemo or adiotherapy. Patients unwilling to participate.

Results & Discussion:

Dysphagia refers to difficulty in swallowing, as a result of disruption in the swallowing process. It may be caused by various upper GI pathologies. It is an alarming symptoms, and it need to be investigated on an urgent basis to establish a diagnosis early in the course of the patient management and to rule out any on going serious pathology such as a neoplastic process. A detailed medical history and clinical examination is the key to rule out various causes of dysphagia. [16] Upper GI endoscopy is an effective and an appropriate tool for the evaluation of patients presenting with dysphagia. Early UGIE should be considered, particularly in male patients > 40 years old with dysphagia which often leads to the therapeutic intervention even in quite frail subjects. [17]

Mechanical obstruction of the esophagus is classically with difficulty in swallowing for solids rather than liquids. Peptic stricture, carcinoma and a lower esophageal ring (Schatzki's ring) are the common obstructive causes. In patients with on and off difficulty in swallowing for solids, the cause will be an esophageal mucosal ring in most of the occasions. In eosinophilic esophagitis, the complaints will be difficulty in swallowing for solids only and the patient will be young in age. In patients with a progressive nature of difficulty in swallowing and weight loss in the narrow period of time suggests dysphagia due to malignancy. Patients with motility disorders commonly presents with difficulty in swallowing for both solid foods and liquids which is gradually progressive. Mechanical changes to swallowing related anatomical structures following surgery ,cancer, inflammation ,trauma are possible causes of dysphagia. Any anatomical

abnormalities in the oral or nasal cavity, pharynx, larynx, trachea or oesophagus that one is born with can also lead to dysphagia. Moreover, a variety of neurological impairments such as stroke, cerebral palsy, Parkinson's disease, general brain injury, trauma and insult commonly disrupt the neurophysiology of normal swallowing.

Table 1: Basic Details

Parameters	No. of Cases
Sex:	
Males	24
Females	26
Age:	
Less than 18 years	0
18 – 30 years	6
31 – 40 years	25
41 – 50 years	12
51 – 60 years	7
61 & above years	0
Socio Economic Status:	
Upper	
Middle	
Lower	
Total	50

Table 2: Endoscopic diagnosis

Endoscopic diagnosis	No. of Cases
Growth esophagus	13
Others	9
Stricture esophagus	7
Hiatus hernia	7
Normal study	4
Esophagitis	4
Gastroesophageal reflux disease	3
Stricture cricopharynx	2
Growth Stomach	1
Growth hypopharynx	0
Growth cricopharynx	0
Total	50

Table 3: Site of Lesion & Biopsy Results

Site of Lesion	No. of Cases
Upper esophagus	6
Lower esophagus	23
Middle esophagus	21
Total	**50**
Biopsy Results	
Adenocarcinoma	14
Squamous cell carcinoma	27
Benign lesions	9
Total	**50**

In a study conducted by Dutta et al, they also found the most common age group presenting with dysphagia was similar to findings of present study. The most likely factors contributing to this finding can be malnutrition, obesity, poor oral health, low intake of fresh fruits and vegetables, alcohol and tobacco consumption, smoking, red meat, hot tea drinking. [18]

We found out dysphagia to be more common in females as compared to males. A finding of present research was supported by Bhattacharyya on the prevalence of dysphagia among adults. [19]

Results of biopsy taken from the growth in esophagus, stomach and pharynx showed that the squamous cell carcinoma is most common type, followed by adenocarcinoma. Squamous cell carcinoma was mostly seen in mid esophagus, whereas adenocarcinoma was the predominant in distal esophagus and stomach. In a study conducted by cancer research United Kingdom, squamous cell carcinoma accounted for less than a quarter of all esophageal cancers while adenocarcinoma accounted for more than half in England. [20]

FEES is currently the first choice for dysphagia evaluation because it is easy to use, very well tolerated, allows bedside examination, avoids radiation hazards, and is economical. General practitioners and specialists in otorhinolaryngology, phoniatrics, neurology, neurosurgery, and so on are the usual base for ordering dysphagia evaluation. However, the use of FEES as a diagnostic procedure is not widely known or popular in multidisciplinary settings and is only in recent times trying to emerge as a standard procedure even within the subspecialty of laryngology. The classical FEES procedure is rather elaborate, labor intensive, and time consuming, and this may be one of the reasons for it being relatively little used.

In a study of 913 patients with dysphagia. Esophagus was abnormal in 678 cases (74%) and biopsies were taken in 428 patients (47%). Superficial esophagitis, Barrett's esophagus, esophageal cancer, and esophageal ulcer were main histological findings. [17]

A study conducted by Susan E. Langmore, et al [21] evaluated dysphagia patients by the fiberoptic endoscopic evaluation of swallowing (FEES) procedure, which is a comprehensive evaluation of the oropharyngeal phase of swallowing that can reveal the nature of the problem and guide management, improving efficacy and outcome. In addition, this technique can be used as a biofeedback tool in therapy. The FEES protocol, as established by Langmore et al., is a comprehensive evaluation of swallowing, including three major components: (1) structural movement, sensory status, and anatomic support for swallowing; (2) ability to swallow food and liquid; and (3) response to postural, dietary, or behavioural alterations to alter the path of the bolus or the way it is swallowed. The FEES has led to research that has uncovered some unique insights about normal and disordered swallowing because it has proven to be a valid, useful, cost-effective, reliable, and effective procedure for diagnosing dysphagia, for understanding the nature of the swallowing problem, and for guiding treatment.

Dysphagia needs to be investigated on an urgent basis to establish an early diagnosis, in the course of the patient management and to rule out any malignantpathology. A detailed medical history and clinical examination is the key to rule out various causes of dysphagia. Several diagnostic investigations are available to evaluate dysphagia, like upper gastrointestinal endoscopy, contrast imaging studies. Most patients with dysphagia referred to the surgical clinics have esophageal causes, and therefore, an endoscopic examination of the upper GI tract (Upper gastro intestinal endoscopy; UGIE) as first line examination will be required in these cases. [22]

Conclusion:

The data generated from present study concludes that Squamous cell carcinoma of oesophagus was found to be the most common cause of dysphagia which can be due to rising incidence of gastro esophageal reflux disease or Barret's esophageous. Hence role of endoscopy is much valuable in detecting these premalignant conditions to prevent this manifestation.

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