

## **INCIDENCE OF DYSPHAGIA EXPERIENCED IN TERTIARY CARE REFERRAL HOSPITALS IN BANGALORE CITY**

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### **ABSTRACT**

The study of the 307 cases of Dysphagia has led to the following conclusions. In all cases of Dysphagia a male predominance was observed except in Paterson, Kelly syndrome and Post cricoids cancers. Most of the patients were expressed to fifth and sixth decades. Ninety of the malignancies were associated with the consumption of alcohol tobacco and spicy food fifty seven percent of the cases of Dysphagia were due to malignancies and eighty seven point three were due to neuromuscular disorders like bulbar palsy and eleven point five three percent patients were due to foreign bodies in Aero digestive tract was fifty percent. Most of the cases presented of Dysphagia was within three months of the onset of symptoms. Almost ninety three percent of Dysphagia was for solids only and fifty percent of the patients with neuromuscular disorders had Dysphagia for liquids. Total fifty percent of the malignancies causing Dysphagia were in pyriform fossa, around twenty percent in base tongue and vellicula and thirteen percent is due to unclassified causes. The Coins were the most common foreign bodies in children and in adults bones/dentures were the commonest. They were at the level of cricopharynx which were endoscopic ally removed. Most of the cases of Dysphagia due to malignancies were presented in their advanced stage and they were treated with surgery and Radiotherapy. Most of the cases of Dysphagia due to malignancies were found to be Squamous cell carcinoma. Histopathology was found to belong to Grade III according to Broader's Classification

**KEYWORDS:** Squamous Cell Carcinoma, Dysphagia, Kelly Syndrome, Post Cricoids Cancers

### **INTRODUCTION**

Dysphagia, which means difficulty in swallowing, is common all age groups, especially in elderly, is caused by many factors, most of which are temporary and not threatening. People normally swallow hundreds of times a day to eat solids, drink liquids and swallow the normal saliva, and mucous that the body produces. The ability to swallow is a physiological function essential to the maintenance of life. In addition to nourishing the body, the swallowing provides pleasure and forms a key part of the most important aspects of social life. Patients with swallowing disorders have difficulty in feeding themselves. Many conditions, diseases or surgical interventions can result in swallowing problems. Dysphagia- mild or severe is a serious symptom and demands necessary investigations to know the cause. History provides a correct presumptive diagnosis along with clinical examinations in over 80% of the patients, management in any of the cases is difficult especially in malignancy, as most of our patients present late. A thorough understanding of the sequence of events occurring during the course of normal swallowing is necessary so that we may distinguish those factors responsible for its dysfunction. Dysphagia occurs when there is problem with any part of the swallowing process. Any condition that weakens or damages the muscles and nerves that are concerned with swallowing may cause dysphagia. In addition, cancer of the head, neck or oesophagus may cause swallowing problems. Sometimes the treatment for these types

of cancers can cause dysphagia. Injuries of head, neck and chest may also create swallowing problems. People born with abnormality of the swallowing mechanism may not be able to swallow normally.

## MATERIALS AND METHODS

The present study of aetiopathology of Dysphagia has been carried out in the ENT department – Bangalore Medical College, Victoria Hospital Bangalore Bowring and Lady Curzon Hospital Bangalore and cases was considered from outside set up. An average on an about 225 new cases were seen per day in the ENT department of which 5-10% constitute the cases of Dysphagia. Out of these 105 cases were selected at random for the present study. Some of the selected cases which are referred to radiology department, Victoria Hospital, Gastroenterology department Bowring & Lady Curzon Hospital, and Kidwai Memorial Hospital, Bangalore were followed with their assistance. Each case selected has been studied as per the proforma. First a detailed history was taken and a thorough ENT examination was done. After admitting the patient to the hospital, a thorough clinical examination was also done. Later, patients were subjected to various investigations like: Blood-Hb%, Tc, Dc, ESR, RBS etc; Urine examination for albumin and sugar; Stools for ova & cyst where necessary; Barium swallow X-Ray was taken where necessary; Plain X-ray, CT MRI where necessary: of Neck/Chest/Abdomen; Direct Laryngoscopy and Oesophagoscopy, Bronchoscopy, Fibrotic endoscopy, Oesophageal manometry, cinefluoroscopy, was done either under general or local anaesthesia to know and confirm the level, nature and type of lesion. Biopsy was taken where necessary and subjected to histological examination to confirm the diagnosis and after confirmation of diagnosis, each case was treated accordingly and later the patients were followed up, regularly for a period of a few months to one year. The condition and responses of the patients were noted where necessary and advice has been taken. In a few cases where personal follow was not possible, postal correspondence was made as long possible and necessary advise was given.

## RESULTS

**Pyriiform Sinus Carcinoma** : Age 29-83 years. Mean age 62.3 years. Median age 59 years. Male: female = 5.1. Mean duration of symptoms prior to diagnosis (1-32) 3.9m. 89% smokers and alcoholics. 67% T<sub>3</sub> or T<sub>4</sub>. 84% stage III or IV. Neck metastasis 69%. Radiotherapy with conservation surgery (survival 71%) was better than total laryngectomy (53%) or radiotherapy alone (27%). Cure rates were related to T stage T<sub>1</sub> + T<sub>2</sub> > T<sub>3</sub> + T<sub>4</sub> (28%). Neck metastasis reduced cure rate by 26% and N<sub>1</sub> > N<sub>2</sub>-N<sub>3</sub> additional 12%. Oropharyngeal carcinoma (N-213). Dysphagia was found in 78 patients. Tonsil 55%, Tonsil fossa and faucal pillars; 6%. Base of tongue 25%, Vallecula 6%. Posterior wall 6%, Soft palate 11.5%. Primary symptoms (minimum of 3 symptoms perpatient 213 patients sore throat 126 (59%), Dysphagia 78 (32%), neck node mass 52, Otagia 39, weight loss 13, hoarsenes 9, bleeding 7, others 17, no symptoms T<sub>1</sub>, 13%; T<sub>2</sub>, 51%, T<sub>3</sub>, 34%, T<sub>4</sub>, 2%, No 38% and N<sub>4</sub> 38%. Hypopharyngeal and cervical oesophageal carcinomas (N-26), Tonsillar acancers (N-171) 93.6% of the malignancies are squamous cell carcinoma. Stage III and IV 79%. Tonsil/sfaucial pillars 50%, base of tongue 20%, vallecula and lingual epiglottis 10%, posterior wall 5% and lateral wall 5%, squamous cell carcinoma 70%, Non Hodgkin's lymphoma 25%, salivary tumors 5%. Hypopharyngeal cancers (P.M. STELL 7 A.C. SWIFT). 97.5% are squamous cell carcinomas. Local control rates RT alone in Ca tonsil is 91% in T<sub>1</sub> and T<sub>2</sub>, and 80% in T<sub>3</sub> and this is better than that with cancer base tongue with 85% for T<sub>1</sub> and T<sub>2</sub>, and 54% for T<sub>3</sub>. In T<sub>4</sub> cases surgery combined with radiotherapy is better. In locally advanced head and neck cancers of stage III and IV surgery acombined with post-op radiotherapy is better. With surgery and postoperative radiotherapy for the pyriiform fossa cancer, survival is better.

The present study comprises of 307 cases of non-inflammatory causes of Dysphagia. The cases have been grouped as:

- 105 cases studied in the general ENT outpatient department.
- 202 cases of head and neck malignancies causing Dysphagia.

The observations made in this study are compared with the observations appearing in the chapter 'Review of Literature. Socio-economic status; 91.2% had monthly income under Rupees One thousand, most of the cases had an income ranging from Rs. Five hundred to Rs. Eight hundred.

84.63% were Hindus and 95% were from Karnataka.

**Table 1: Incidences on Gender Basis**

Incidence	Total	Number		Percentage	
		Male	Female	Male	Female
General ENT	105	70	34	67.1	34.9
	161	139	22	86.3	13.7
	16	10	6	66	34.0
	25	13	12	53	47.0

A male predominance was noted with malignancies with a ratio of 86:14. In Neuromuscular disorders it was 66:34 and in the postericoid malignancies it was 53:47. This is in consistence with the figures appearing in the review of literature.

**Table 2: Incidence of General ENT, Malignancies & Neuromuscular**

Years	General ENT		Malignancies		Neuromuscular	
	N-105	(%)	N-161	(%)	N-16	(%)
0 to 10	09	8.57	00	00	02	12.50
11 to 20	03	2.85	00	00	1	6.25
21 to 30	5	4.76	5	3.1	-	
31 to 40	12	11.42	12	7.61	2	12.50
41 to 50	34	32.39	48	30.2	5	37.50
51 to 60	25	23.81	55	34.1	4	25.00
61 to 70	11	10.48	29	18.1		
71 to 80	6	5.72	11	6.7	1	6.25
81 to 90	-		1	0.6		
<b>Youngest</b>	<b>1 Year</b>		<b>24 Years</b>		<b>7 Years</b>	

The fifth and sixth decades are most commonly affected commonly affected in more than 60% of the cases.

**Table 3: Risk Factors Head and Neck Malignancies Causing Dysphasia**

Sl	Risk Factors	No	%
1	No habits	18	11.18
2	Smoking	84	52.17
3	Alcohol & Smoking	43	26.70
4	Pan/Tobacco chewing	11	6.84
5	Smoking & tobacco chewing	03	1.87
6	Smoking, alcohol & tobacco chewing	01	0.62
7	Alcohol & tobacco chewing	01	0.62
<b>Total</b>		<b>161</b>	<b>100</b>

Tobacco and alcohol abuse was found in 89.8% of malignancies. This is in conformity in the study of literature of Spector et. al. Thyroid surgery was performed to treat toxic goitre. The patient had 25% improvement after one month treatment with administration of streptomycin and doxycycline for thinoscleroma. The patient with Motor neurone disease died after 6 month. Within two months of its onset, the patients with globus pharyngeus had a lump in the throat. One patient complained of food sticking intermittently and one male patient was suffering from psychiatric problems. These patients were young and swallowing worsened the symptoms. Both clinical and radiological examinations in these patients showed no abnormality and the patient with depression improved with antidepressant treatment. Hysteria was not associated with this condition. With a history of 2 months to 3 years, 4 patients presented Dysphagia and anaemia. One case of post cricoid webs of Paterson Kelly syndrome was found with anaemia. All the patients were women between ages of 35 and 53 years. The patients were treated with haematinics with reassurance. Only one patient returned for followup and had moderate improvement in symptoms. 4 patients with achalasia cardia presented with Dysphagia for liquids and cold food. Regurgitation and vomiting was also observed. They presented within 2-4 months of the onset of Dysphagia and they showed the typical radiological picture of the diagnosis. Those with Achalasia cardia were referred to general surgery for Hellers operation and the patient with systemic sclerosis gave history of remission and intermission. All the foreign bodies were found in the level of C<sub>6</sub> Veertebra. Of the 12 patients were children and 5 were adults. All the children were 3 or under 3 years of age and all had swallowed coins. The adults had swallowed bones/dentures. With a rigid endoscope the foreign bodies were removed under general anaesthesia. Except one stayed for longer duration & all others stayed for a day in the hospital. The patient who stayed longer had a parapharyngeal abscess secondary to the foreign body. X-rays helped in diagnosing the foreign bodies. The studies made here agree with and comparable to the studies made by William S Crysedale et.al.,

**Table 4: Dysphagia Distribution**

SI	Type	Malignancies		Neuromuscular	
		N-161	(%)	N-16	(%)
1	Solids only	148	91.98	7	43.75
2	Solids & liquids	113	8.07	6	37.50
3	Liquids		-	2	12.50
4	Aspiration		-	1	6.25

**Table 5: Duration of Dysphagia**

SI	Months	N-161	(%)	N-20	(%)
1	0-1	60	37.48	13	65.49
2	2 <sup>nd</sup>	42	26.65	03	13.29
3	3 <sup>rd</sup>	27	16.83	02	10.61
4	4 <sup>th</sup>	09	04.90	02	10.61
5	5 <sup>th</sup>	06	03.60		
6	6 <sup>th</sup>	14	08.76		
7	>10	03	01.78		

92% of the patients with malignancies had Dysphagia for solids. In neuromuscular disorders 12.5% of the patients had Dysphagia for liquids. Within three months of the onset of Dysphagia, 80% of the patients with malignancies complained of their problems. Patients with neuromuscular disorders who comprised 78%, presented within the first two months of the onset. The mean duration of symptoms prior to diagnosis was 3.9m in pyriform sinus cancers (Spector et.al., N-408). 1.7% had weight loss, articulatory difficulty, hot potato voice and mastication problems. 1.28% had haemoptysis

and trismus. These findings are comparable with the figures given by Johnson et.al. And McCrea and Dickie.

**Table 6: Associated Symptoms in Head and Neck Malignancies Causing Dysphagia**

Symptoms	Number	Percentage
Odonophagia	86	52.56
Change in voice	83	51.55
Neck mass	53	33.24
Otalgia	39	24.63
Stridor	24	15.24
Cough	16	09.93
Oral mass	07	04.62

**Table 7: Associated Symptoms in Neuromuscular Disorders**

Symptoms	Number	Percentage (%)
Dysarthria	7	36.3
Restricted tongue movements	6	34.60
Head ache	4	22.40
Motor limb weakness	4	22.40
Vomiting / regurgitation	3	15.00
Nasal regurgitation	3	15.00
Trismus	3	15.00
Aspiration into larynx	2	
Drooling of saliva	-	
Deviation of angle of mouth	-	
Hypertension	-	
Diabetes mellitus	-	

**Table 8: Site of Head and Neck Malignancies Causing Dysphagia**

Site	Number	Percentage (%)
Oral cavity	07	0.43
Oropharynx	47	29.48
Base tongue	33	20.50
Vellecul	27	16.67
Tonsil	21	13.25
Pharyngeal wall (lateral & posterior)	15	09.40
Hypopharynx	107	66.00
Pyriiform fossa	79	49.00
Post cricoid	16	09.80
Posterior Pharyngeal wall	12	07.26
Cervical Oesophagus I post Cricoid ca.	04	02.56
Laryngeal involvement in the above malignancies		36.75

## DISCUSSIONS

Pyriiform fossa was found to be involved in 50% of the head and neck malignancies causing Dysphagia. Base tongue and vellecula were involved in 20% of the cases and the tonsil in 13% of the cases. The findings are comparable with the studies of P.M. Stell, J.R.G. Nash and A.C. Swift (Scott Brown). **As Per Broaders's Classification** Squamous cell carcinoma; 84; Well differentiated- 05 Moderately differentiated -23 Poorly differentiated -43; Unclassified -13; Lymphomas (tonsil)- Parapharyngeal tumors ;Peripheral nerve sheath tumour -1; 64% of the squamous cell carcinoma are

poorly differentiated ones. 93% of the malignancies are squamous cell carcinomas. These findings are in conformity with the studies of P.M. Stell, J.R.G. Nash and A.C. Swift (Scott Brown), and Mizono et. al. TNM status of head and neck malignancies of dysphagia was ;T<sub>1</sub>-6 (3.70%) ;T<sub>2</sub>-29(18.00%);T<sub>3</sub>-72 (44.70%);T<sub>4</sub> -54(33.50%);N<sub>0</sub>-34 (21.22%)

Stage was documented ; I- 3 (1.9%); II-5(3.3%); III -38 (24%) IV-114 (70.75%). Total 70% of the malignancies presenting with Dysphagia were of stage IV The findings in this study are comparable with the figures of:Spector et.al. (Pyriiform Sinus Ca) stage III & IV 84% Mark et. al. (Oropharyngeal Ca) T2 36% & T3 42% Johnson et.al. (Oropharyngeal Ca) T2 51% & T3 34% Mizono et.al. (Cancer Tonsil) Stage III & IV 79% A combination of surgery and radiotherapy gave a better disease free survival than the use of radiotherapy alone in pyriform sinus tumours. Most of the Oropharyngeal tumours were treated with radiotherapy alone. Similar study reported by *Kumar et al* (N-76): In locally advanced head and neck cancers of stage III and IV surgery combined with post-operative radiotherapy is better. *Driscoll et al* reported With surgery and post-operative radiotherapy for the pyriform fossa cancer, survival is better. *Wang et al*: Local control rates RT alone in Ca Tonsil is 91% in T<sub>1</sub> & T<sub>2</sub>, and 80% in T<sub>3</sub> and this is better than that with cancer base tongue with 85% for T<sub>1</sub> & T<sub>2</sub> & 54% for T<sub>3</sub> & T<sub>4</sub> cases, surgery combined with radiotherapy is better and *Mark et al* .(N-89): For Pharyngeal wall cancers the treatment outcome, survival and tumour and nodal control were better for cases treated with a combination of radiotherapy and surgery.

## CONCLUSIONS

Most of the cases of Dysphagia is due to squamous cell carcinoma. Histopathology evidence was found to be positively correlated with Grade- III according to Broader's Classification. This study is helps to clinicians and private practitioners for know the spectrum of dysphasia.

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## REFERENCES

1. *Adolf Meiklke*. Historical Vignette Arc., *Otolaryngology*, 1968. 84:354
2. *Arthur C. Guyton*. Text Book of Medical Physiology. 8<sup>th</sup> edition
3. *Benjamin Gallagher*, Microendoscopy Laser diverticulotomy for Hypopharyngeal diverticulum. *Ann. Of Oto Rhin Lar.*, Sept 1993.
4. *Carl E Silver*. Surgery for Cancer of larynx and related structures, 1981.
5. *Chaurasia B.D*. Human Anatomy. 1<sup>st</sup> edn.
6. *Chrisholm etal*, A follow-up study of patients with postericoid webs. *Quarterly Journal of Medicine*. 1971, 40:421.
7. *Conrad Timon et al*. Globus phazryngeus; long term follow-up of prognostic factors. *Annoto Rhin. Lar*. May 1991 : 351.
8. *Dalley V.M*. Cancer of Laryngopharynx *JLO*, 1968, 82: 407

9. *David J Havorson*. Transmural cricopharyngeal myotomy with KTP laser in the treatment of cricopharyngeal dysmobility. *Ann of Oto Rhin. Lar* Mar. 1994.
10. *David S Soutar & Rammohan Tiwari*. Aexcision and Reconstruction in Head and Neck cancers. 1994.
11. *Driscoll et al*. Cancer of pyriform sinus. *Laryngoscope* May 1983, 556.
12. *Dollhman & Mattson*. Endoscopic operation for Hypopharyngeal diverticulum 71,744. *Arch of Otolaryngology*. 1960.
13. *Edward J Doolin*. Composite reconstruction of oesophagus and Hypopharynx after severe caustic injury. *Ann.Oto.Rhin.Lar*. Jan. 1994:36.

