DYSPHAGIA - AETIOLOGY AND INCIDENCE IN YOUNG ADULTS

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ABSTRACT

Objectives: The Study was conducted at Combined Military Hospital Rawalpindi, to identify cases of dysphagia in both genders, to see sex predominance, to find the aetiology in our population and to compare it with the literature.

Patients and Methods: Study was conducted on 54 cases of dysphagia 32 male and 22 female, from outpatient department of CMH Rawalpindi.

Results: 31.45% were cases of foreign body esophagus, 16.66% were case of Carcinoma esophagus, 9.25% were of leiomyoma esophagus, 11.11% were of Carcinoma pyriform fossa hypopharynx, 7.40% were of peptic stricture esophagus, 3.7% were of globus pharyngeus, 3.7% were of Plummer Vinsons disease, 1.85% of Zenker's Diverticulum. All the esophageal pathologies have equal sex involvement. 14.81% were of postcricoid carcinoma female predominance.

Conclusion: Our results were compared with the literature. Some esophageal pathology values were matched with the results and some were contrary what we saw in the literature.

Keywords: Foreign body, carcinoma, leiomyoma, postcricoid, pyriform fossae, stricture, globus, diverticulum

INTRODUCTION

The intake of food is an essential necessity of life. Any interference with the ability to swallow quickly leads to apprehension arising various questions in the minds of the patient whether there is some foreign body [1] stuck or there is some growth [2] leading to difficulty in swallowing. Early diagnosis and treatment can give a better life to the patient and can prevent morbidity and mortality. Undiagnosed cases of dysphagia can lead to a lot of complications affecting the quality of life of the patient. A good clinical acumen can bring relief and comfort to the patient. The selection of the topic of the study is to create a study population of young adults that is of Armed Forces Personnel (Army, Air Force, Navy) and their families during one year study period from August 2001 to August 2002 reporting to ENT OPD CMH Rwp. The aetiology here meaning causes of dysphagia identified in these young adults of both genders and the incidence meaning number of patients reporting during one year period. The data collected by recording the questionnaire proformas issued to the patients. Commonly occurring diseases leading to dysphagia in the young adults of Armed Forces (Army, Air Force & Navy). The purpose of study included not only to identify the number of patients, but also to study the number and causes occurring in males and females. The sex predominance will also be recorded. The study aims to identify the causes of dysphagia in both sexex of young adults in our population and then comparing them with various causes with sex predominance as mentioned in literature.

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PATIENTS AND METHODS

Study population (N) = 54 patients

Male Cases (n) = 32 patients

Female Cases (n) = 22 patients

Inclusion Criteria

- Age 19-40 years
- Both sexes included
- Only Pakistan Armed Forces (Army, Air Force & Navy) personnal and their families included.
- Patients identified and recorded only during the one year period i.e. Aug 2001- Aug 2002.
- For diagnostic evaluation all patients were issued three proformas:
    - History questionnaire
    - Clinical examination record
    - Investigation record

Chi-square test was used to check the significant sex, predominance using SPSS version 10.0. P-value <0.05 was considered significant.

RESULTS

Referring to (table 1 – 7) the detailed results are as follows:

Seventeen patients 31.45% were cases of FB oesophagus mean age being 33 years showing negative plain x-ray neck & chest confirmed on endoscopy showing chicken bones at cricopharyngeus level. There were 11 males and 6 females. There was no significant sex predominance (p>0.05).

Nine patients 16.66% were cases of carcinoma oesophagus mean age being 35 years confirmed on barium swallow as rat tail appearance and endoscopy with biopsy showing well differentiated squamous cell carcinoma of the midthoracic region. In 4 cases computerized tomography thorax confirmed the extent of growth of oesophagus. There were 6 males and 3 females, but the sex predominance was statistically significant (p>0.05).

Five patients 9.25% were cases of benign tumour of midthoracic region of oesophagus mean age being 36 years confirmed on barium swallow and endoscopy with biopsy showing leiomyoma. There were 3 males and 2 females, with no significant sex predominance (p>0.05).

Eight patients 14.81% were cases of postcricoid carcinoma of hypopharynx confirmed on barium swallow and endoscopy with biopsy showing well differentiated squamous cell carcinoma. There were predominantly 8 females with no case identified in males which is statistically significant (p<0.05).

Six patients 11.11% were cases of carcinoma of pyriform fossae hypopharynx mean age being 38 years confirmed on plain x-ray neck lateral view of soft tissue and final confirmation on barium swallow and endoscopy with biopsy showing well differentiated squamous cell carcinoma. There were six males and no females. Sex predominance is statistically insignificant (p>0.05).

Four patients 7.40% were cases of peptic stricture mean age being 36 years confirmed after barium swallow and endoscopy with biopsy revealing benign peptic strictures of oesophagus in the lower third of known GERD patients. There were 4 males and no females (p>0.05). One case 1.85% age 35 years male was of Zenker's diverticulum confirmed on barium swallow and endoscopy. There was no significant sex predominance (p>0.05).

Two cases 3.70% mean age being 34 years a male and other a female of 30 years of Globus pharyngeus. There was no significant sex predominance. All investigations including laboratory tests and barium swallow were normal, however endoscopy showing oesophagitis.

Two cases 3.70% mean age being 29 years both females were of Plummer Vinson's disease diagnosed on laboratory tests showing iron deficiency anaemia with on barium swallow revealing post cricoid web upper oesophagus confirmed on endoscopy. This being a disease of female predominance ($p>0.05$).

DISCUSSION

Our study compared with the literature showed the importance of various diagnostic methods for the evaluation of dysphagia. Out of 54 patients 17 patients 31.48% were cases of FB oesophagus mean age being 33 years showing negative plain x-rays neck and chest. These were confirmed on endoscopy showing chicken bones, mutton, beef bones, and soda bottle caps.

Twelve cases showing pieces of bones mostly seen in persons closed to pantry or working in party, they were mostly cooks, waiters and dishwashers of different army battalions. They usually have easy access to meat products coming for daily messing and dinner nights. However there were all sorts of bones chicken, mutton and beef seen in endoscopy but chicken bones being the commonest.

Three cases were of dates seen during endoscopy during month of Ramazan, due to prompt ingestion of dates during Iftar.

Two cases of unit canteen workers dealing with soda bottles were in the habit of opening the bottles with their teeth and ended up soda caps lying in the oesophagus.

In the literature 1500 to 2750 individuals die annually in the USA following ingestion of foreign bodies. 80% of FB is seen in children who frequently swallow coins or toy parts among other objects. Adults ingest FB mostly mentally impaired, psychiatric or prisoners who can put anything in their mouth, there is no sex predominance, elderly showing mostly denture in their oesophagus [1].

Nine cases 16.66% were of carcinoma oesophagus mean age being 35 years confirmed on barium swallow as rat tail appearance, endoscopy with biopsy revealed well differentiated squamous cell carcinoma in mid thoracic region. There being 6 males and 3 females. Endoscopic ultrasonography can be used to stage local tumour (T) and lymph node (N) in oesophageal cancer [2].

Columnar lined oesophagus develops intestinal metaplasia with factors like reflux, alcohol consumption, leading to Barrett's oesophagus confirmed on endoscopy [3].

Epidermoid carcinoma oesophagus can also occur in patients mean age being 58 years (38-77) with male predominance [4].

Cases seen in our study belong to lower socio-economic group with lot of nutritional deficiencies in their dietry habits keeping in view the daily allowance of various nutrients like vitamins and minerals. In addition smoking being the next important factor involved, particularly in young males. A study carried out in Africa in 1998 showing effect of diet, minerals, vitamins, tobacco and alcohol in causation of squamous cell carcinoma. A predominantly maize based diet high in linoleic acid precursor of gastric prostaglandin leading to reduced acid secretion, lowering oesophageal sphincter pressure with reflux in dysplasia leading to local squamous cell carcinoma [5].

This is in contrast to the study carried out in France in April 1999 revealing increased number of patients coming up with male predominance mean age being 55 years of adenocarcinoma arising in preexisting Barrett's oesophagus. The cases were mostly smokers and with increase intake of alcohol [6].

In Pakistan carcinoma of oesophagus rank as the 5th commonest tumour in females and 9th in males. In PMRC Research Centre and department of Surgery Jinnah Post Graduate Medical College Karachi Pakistan in 1995, showed 98% cases having squamous cell

carcinoma and only 2% occurrence being adenocarcinoma secondary to Barrett's oesophagus [7]. Incidence of lower oesophageal adenocarcinoma increasing in UK, studied in a series of 44 cases in 1998. Mean age being 40 for men, women mean age being 65 (39-86) [8].

Formalin fixed, paraffin embedded tissue of patient with Barrett's oesophagus were processed for flow cytometry measurements (ploidy, proliferation index) and p53 immunostaining. These procedures are capable of distinguishing between neoplastic processes from other morphological changes of a reactive or reparative type [9].

Bile acid reflux important component of duodenogastro-oesophageal reflux. Oesophageal aspirate collected over 15 hour a new automated suction device and pH was monitored. Bile acid assay was preformed by high performance liquid chromatography. Bile acidcontribute to pathogenesis of Barrett's metaplasia [10].

A recent consensus conference of International Gastric Cancer Association (IGCA) and the International Society for Diseases of Oesophagus (ISDE) in 1998 defined adenocarcinoma of oesophagogastric junction as tumours that have their centre within 5cm proximal and distal of cardia.The following are the three types: Type-I (Adenocarcinoma of the distal oesophagus which arises from in area with intestinal metaplasia i.e. Barrett's oesophagus). Type-II (True carcinoma of cardia arising from cardiac epithelium or short segment). Type-III (Sub cardinal gastric carcinoma) [11].

Endoscopic ultrasonography is technically limited in patients with obstructing oesophageal cancer if the endoscope cannot pass beyond the lesion. This problem may be overcome by preliminary endoscopic tumour dilatation or use of narrow caliber blind endoscopic ultrasonography using miniprobes. The study determined the effect of oesophageal obstruction on the locoreginal staging of accuracy of endoscopic ultrasonography [12].

Study carried out in UK in 1998 in which 60 patients with no metastasis were seen in gastroscopy, ultrasonography of abdomen, supraclavicular region, computerized tomography of chest and abdomen, showed metastasis in exploratory laparoscopy. So laparoscopy not an effective staging technique in oesophageal carcinoma. However in gastric cardia carcinoma laparoscopy was more effective [13].

Staging of oesophageal cancer primary tumour with nodal involvement. T1 tumours (mucosal or sub mucosal invasion) carry 11% risk of nodal disease (3% to N2 nodes) T2, (muscularis propria or subserosal invasion) 50% risk (19% to N2 nodes) T3 (serosal infiltration) 74% risk (39% to N2 nodes), T4 (invasion into adjacent organs) 80% risk (53% to N2 nodes) [14].

Five patients 9.25% were cases of leiomyoma mid thoracic region of oesophagus mean age being 36 years male predominance confirmed on barium swallow and endoscopy. All cases were smokers with low socioeconomic status; literature reveals leiomyoma intramural occurring in oesophagus with more than 80% occurring in mid and lower third regions, age group being 20-50 years with no clear cut gender predominance. Case mostly had the history of smoking along with alcohol intake [15].

Eight patients 14.8% were cases of post cricoid carcinoma confirmed on barium swallow and endoscopy mean age being 36 years with female predominance having history of early Plummer Vinson's disease, which developed into post cricoid carcinoma.

Six patients 11.11% were of carcinoma pyriform fossae mean age being 38 years, various diagnostic methods used were plain x-ray neck lateral view for soft tissue, barium swallow, CT scan and endoscopy. These patients having dietary habits confirming multiple nutritional deficiencies.

This in contrast to what we see in the literature the age specific rates of pharyngeal age for both men and women. Incidence rate is greater in people aged over 70 years. In clinical services peak incidence appears in below 65 years. Cancer of hypopharynx in England and Wales this century has fallen in men those women has risen over the same period. In USA incidence for hypopharyngeal cancer has also increased for women but not for men. The main contributory factors being smoking with alcohol intake [16].

Four patients 7.40% were cases of peptic stricture mean age being 36 years confirmed on barium swallow and endoscopy with biopsy revealing benign peptic strictures of lower third oesophagus in known cases of GERD. The cases revealing smoking with dietary habits of eating spicy foods, fried foods, oily foods, in their major meals. Also complaining of epigastric discomfort, burning with belching mostly in supine position.

This is quite different to what we see in the literature, peptic oesophageal strictures occur in the context of inadequately treated GERD especially in elderly mean age being 55 years with no sex predominance [17].

These cases were having history of heavy smoking along with alcohol and spirit intake. There are complaints of nocturnal burning epigastrium with water brash and belching, the dietary habits also confirmed oily, fatty, spicy fried foods.

One case 1.85% age 35 years male was Zenker's Diverticulum confirmed on barium swallow and endoscopy. Whether it was congenital or acquired could not be demonstrated by any diagnostic technique. However according to literature available 50% of patients demonstrate improper coordination between UES relaxation and cricopharyngeal muscle. It is clinically rarely seen before 30 years of age and most commonly after 50 years, with no sex predominance. It is a merely incidental finding on barium swallow. Dysphagia is a dominant symptom [18].

Table-1: Results of causes of dysphagia in young adults.

Diseases	Patients	Percentage
FB Oesophagus	17	31.48
Carcinoma Oesophagus	9	16.66
Leiomyoma Oesophagus	5	9.25
Postcricoid Oesophagus	8	14.81
Pyrifom Fossa Carcinoma	6	11.11
Peptic Stricture	4	7.40
Zenker's Diverticulum	1	1.85
Globus Pharyngeus	2	3.70
Plummer Vinson's Disease	2	3.70

Table-2: Results of causes of dysphagia in young adults.

Diseases	Patients	Percentage
FB Oesophagus	11	34.37
Carcinoma Oesophagus	6	18.75
Leiomyoma Oesophagus	3	9.37
Postcricoid Carcinoma	0	0
Pyriform Fossa Carcinoma	6	18.75
Peptic Stricture	4	12.50
Zenker's Diverticulum	1	3.12
Globus Pharyngeus	1	3.12
Plummer Vinson's Disease	0	0

Table-3: Results of causes of dysphagia in young females.

Diseases	Patients	Percentage
FB Oesophagus	6	27.27
Carcinoma Oesophagus	3	13.63
Leiomyoma Oesophagus	2	9.09
Postcricoid Carcinoma	8	36.36
Pyriform Fossa Carcinoma	0	0
Peptic Stricture	0	0
Zenker's Diverticulum	0	0
Globus Pharyngeus	1	4.54
Plummer Vinson's Disease	2	9.09

Another study in USA in 1997 showing the pharyngo-oesophageal diverticulum is the most common oesophageal diverticulum, generally occurring in patients between 30-50 years of age and with no sex predominance and therefore believed to be acquired [19].

Two cases 3.70% mean age being 32 years a male of 34 years and a female of 30 years

were of Globus pharyngeus. There being no sex predominance.All investigations including laboratory tests and barium swallow were normal, however endoscopy showed oesophagitis. The dietary history alongwith personal habits revealed smoking in the male patient and fatty oily,and spicy food in take in the female obese patients. Both were treated initially as functional overlay with no organic cause but on endoscopy oesophagitis was present. Both improved with ant-acids, stopped smoking and with change of dietary habits. The study carried out in Thailand in 1996 revealed adult mean age 40 years with no sex predominance diagnosed as Globus pharyngeus with videoflurography [20].

Two cases 3.70% mean age being 29 years both being females were of Plummer Vinson's disease diagnosed on laboratory tests showing iron deficiency anaemia on barium swallow revealing post cricoid web upper oesophagus confirmed on endoscopy.

The predisposing factors involved were poor socio-economic status with lack of essential dietary nutrients like iron, vitamins, and minerals seen in those families of serving soldiers living in rural areas with lack of proper facilities and however the condition was reduced in those families staying in urban areas along with their working husbands.

The literature however revealing this syndrome usually occurs in edentulous women older than the age of 40 years, showing female predominance with later age involvement however this being less common in the west because of better nutritional status of the people generally [21].

CONCLUSION

To conclude it should be noted that beside history and clinical examination the various investigations made in our study still require more diagnostic methods not available in military hospitals to evaluate the cause in the newly identified cases when comparing the literature and the recent advances in the subject.

Table-4: Results of sex predominance of our study.

Patients	Male	Percentage	Female	Percentage
54	32	59.25	22	40.79

Table-5: Results of causes of dysphagia in lumen of oesophagus.

Disease	Male	%age	Female	%age	P-value
FB Oesophagus	11	64.70	6	35.29	>0.05

Table-6: Results of causes of dysphagia outside lumen of oesophagus.

Disease	Patients	Male	%age
Pyriform Fossa Carcinoma	6	6	85.71
Zenker's Diverticulum	1	1	14.28

Table-7: Results of causes of dysphagia in the wall of oesophagus.

Disease	Male	%age	Female	%age	P-value
Peptic Stricture	4	4	0	0	>0.05
Plummer Vinson's disease	2	0	20	10.0	>0.05
Carcinoma Oesophagus	9	6	30	15.0	>0.05
Leiomyoma Oesophagus	5	3	15	10.0	>0.05

Our statistical values in the study regarding FB oesophagus in children, Carcinoma oesophagus, Leiomyoma middle third of oesophagus, Peptic stricture oesophagus, Zenker's diverticulum, Globus pharyngeus matches the values with the literature. However our statistical values in Hypopharyngeal carcinoma, Plummer Vinson's disease and FB oesophagus in adults are quite different from what we see in the literature, because of our dietry habits and socioeconomic status different from the west.

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