



DYSPHAGIA CAUSES AND ITS RISK FACTORS IN MAK NIMER HOSPITAL NORTH OF SUDAN

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ABSTRACT

This prospective hospital-based study done in Shendi and Elmak Nimer University Hospitals during the period from 1-6-2006 to 31-12-2008. It includes 79 patients who had dysphagia, 15 cases (19%) who had neurological dysphagia and globus hystericus were excluded. The main objectives of the study are to study dysphagia as a common medical problem, to determine the common causes of dysphagia and to study the possible risk factors. The age of the patient in the study range between 2-85 years with increased incidence in the middle age females and elderly males. Two thirds of the patients in the study were females. Many associated problems were noticed in the patients complaining of dysphagia and they include repeated foreign-body impaction 12 (18.8%), repeated UGIT endoscopy in 9 (14%), history of blood transfusion 5 (7.8%), history of neck trauma 6 (9.4%), repeated hospital admission 16 (25%) and history of chronic diseases 5 (7.8%). The assessment of the patients was done by taken history and performing general examination including E.N.T examination. Many investigations were done to the patients which included complete haemogram, plain radiography, Barium esophogram, endoscopy included both rigid and fibro-optic and biopsy were done in selected cases in the study. The most common causes of dysphagia in the study group were found to be, Plummer's Vinson Syndrome 20 (31.3%), Malignancy 16 (25%), esophagitis and stricture 11 (17.2%), Gastro esophageal reflux diseases 10 (15.6%) and others rare causes 7 (10.9%) were noticed like hiatus hernia, Oropharyngeal candidiasis, laryngeal carcinoma and post chemotherapy to the head and neck tumor and post-thyroidectomy. There is significant correlation between the diagnosis and age of the patients and level of hemoglobin and result of biopsy (Pvalue: 0.05, 0.05 and 0.000) respectively. Although there is no significant correlation between diagnosis and sex, duration of the symptoms, course and progression of dysphagia, this may have been affected by the wide range of causes of dysphagia involved in the study. No risk factors mention clearly in the study group. Further studies on possible risk factors and dysphagia showed be done and putting standard protocol for the assessment and management of dysphagia is recommended.

INTRODUCTION AND LITERATURE REVIEW

Dysphagia is a Greek word that means disorder eating. Dysphagia can be a serious to one's health because of risk of developing aspiration pneumonia, malnutrition, dehydration, weight loss and air way obstruction.^[1]

Dysphagia affects approximately one out of seventeen persons. The symptoms very widely among individual according to different causes.^[2]

A number of causes have been attributed to dysphagia in population with neurologic and non neurologic conditions.^[2]

Early diagnosis offers the best chance of successful treatment and prognosis.^[3]

Disordered leading to dysphagia may affect the oral, pharyngeal and esophageal phases of swallowing and

this may be associated with other symptoms according to the site of swallowing affected.^[4]

Assessment of patient with dysphagia includes. Good history taking, Careful physical examinations which include general examination, good examination to the head and neck and neurological examination, Radiological assessment, Video fluoroscopic swallowing phase disorders assessment. Endoscopy, including nasopharyngoscopy, Laboratory evaluation.^[5]

Swallowing is divided into three phases oral, pharyngeal and esophageal and its duration range between 8-11 seconds.^[6] The oral phase is voluntary and required intact dentition, good salivary glands function .while pharyngeal and esophageal phases are short and complex.^[6] Swallowing is a precess ground by the swelling centre in the medulla and in the mid and distal esophagus by a largely autonomous peristaltic reflex co-

ordinated by the enteric nervous system imbedded in the wall of esophagus.^[6]

Swallowing disorders can be divided according to the site affected into: Oropharyngeal, And esophageal^[1]

The most common cause of Oropharyngeal dysphagia are cerebrovascular accident, systemic and local muscular diseases, structural lesion and diverse neurologic disorders.^[6] Esophageal dysphagia are seen in cases with neuromuscular disorders, motility abnormalities and intrinsic obstructive lesions.^[6]

Epidemiology of dysphagia

Dysphagia is vaguely defined, "catch all" term for a symptom that have numerous causes based or located in a variety of organs and structures.^[7] Dysphagia either refers to the difficulty to initiate swallows "oropharyngeal dysphagia or sensation of food and fluid hindered in their passage from the mouth to the stomach (esophageal dysphagia). The epidemiological data cannot be provided on global basis since the base rate of most diseases that may cause dysphagia tend to differ between western Europe and north America and south Asia, the middle east and Africa also the base rates will vary depending on the age of the patient and spectrum of disorders in child hood dysphagia.^[8] Generally dysphagia occurs in all age groups but its prevalence increase with age.^[9] In younger patients dysphagia often involves accident be related to head and neck injuries as well as of throat and mouth^[10] 7-10% of adults older than of 50 years of old have dysphagia and some seek medical care.^[11] 50-70% of patient with stroke had developed dysphagia and had risks to develop aspiration pneumonia in 30-40%. Tumors prevalence differs among various countries esophageal carcinoma is 7th leading cause of death worldwide and can be as high as 30-80 cases per 10,000 person particularly in northern Iran and some areas of southern Russia and north china. Unlike United States squamous cell carcinoma account for about 95% of all esophageal cancer and more common in males than female of ratio 7:1 and common in elderly of 6th and 7th decades.^[12] Carcinoma of esophagus account of about 7% of gastro intestinal tract cancer in United States and incidence adenocarcinoma increased in the decades.^[13]

In China and India and India squamous cell carcinomas are very common and esophageal stricture which lead to dysphagia are also noticed.^[14]

In Sudan study of 546 cases have showed that esophageal cancer are common in northern province with predominance of females.^[15]

Also study in central Sudan showed that carcinoma in most cases are squamous cell carcinoma of females and occurs in younger age group.^[16]

Assessment of patient with dysphagia

Classification of dysphagia into

Oropharyngeal
Esophageal

Lead to diagnosis of 80-85% of cases, based on

History

Physical examination

Ba esophogram and is often the first step in evaluating patients with dysphagia, especially if an obstructive lesion is suspected but lacks precision in identifying the nature of obstructive lesion. Nasopharyngoscopy is practically useful in evaluating patient with oropharyngeal dysphagia.

gastro-esophageal endoscopy, both (rigid and fiberoptic).^[2] Special studies and consultation with subspecialties can confirm the diagnosis of difficult cases and help guide of treatment strategies'.^[2] A team of professionals are important in assessment of dysphagia. This includes, Gastroenterologist, Otorhinolaryngologist.

Radiologist, Speech language pathologist, Pediatrics Psychologist, Neurologist, Occupational therapist, and Physical therapist.^[6]

Patient with dysphagia may present with a variety of complaints according to the site affected but they usually report cough or choking abnormal sensation of food sticking in the back of throat and upper chest when patient trying to swallow.^[1] Good conduct of history can lead to diagnosis of (80-85%) of cases with dysphagia.^[17]

Specific history of onset, duration and severity and variety of associated symptoms should be assessed.^[1]

Many symptoms which associated with dysphagia should be asked for which includes.^[1] Pain (odynophagia), Level of sensation of difficulty (the catch) and this may be suprasternal especially in hypopharyngeal tumors and substernal and xiphoid especially in esophageal. Progression of dysphagia is it for solid, fluid or both.

Changes of habit of taking food especially in children (dietary changes). Changes of voice, Weight loss, Regurgitation of food, Ear pain, Previous history of surgery especially pharyngeal, chest and thyroid surgery, History of endoscopy and repeated foreign body impaction., History of ingestion of caustic substances, and many history diseases which help in the diagnosis.^[18] Review of other systems: specially: Spinal osteomyelitis, Tuberculosis.

Thyroid enlargement, Systemic neuromuscular diseases Use of alcohol and tobacco Use of drugs specially: anti histamine, anti cholinergic, anti depressant, anti hypertensive and drugs.^[19]

Physical examination

It included general examination with special look for Drooling, Mental status, Voice quality, Laboured breathing Cranial nerves weakness, Gurgling crepitus noise in neck specially pharyngeal pouch, Inspection of

the tongue, Nasopharyngoscopy, and Laryngeal examination.^[1]

Many images had been used to diagnose patients with dysphagia and this includes:

Plain this radiograph

And this showed good value in inflammatory conditions which includes epiglottitis, retropharyngeal abscess and other inflammable condition, and also had role in acute dysphagia in cases with radio opaque foreign bodies (coins and bones). Also plain radio graph has role in cases with postricoid and esophageal tumors can showed soft tissue swelling between the vertebral bodies and air column of the trachea and larynx.^[20]

Barium swallow

Dysphagia can be assessed by using barium swallow and it can often display definitive features of: Carcinoma esophagus, esophageal web and Plummer's Vinson syndrome esophageal diverticulum, Achalasia Hiatus hernia, and Esophagitis and stricture.

Ultra sounds (us):

And this can assess swelling (thyroid) and also movement of the tongue and larynx.

Sometimes Ct scan are used to assess patient with dysphagia especially when mediastinal masses was suspected.^[21]

Many other investigations and studies can in patients with dysphagia and this includes: with dysphagia and it also play role in the treatment of some cases like f. b removal and dilatations of some cases with esophageal web and stricture.^[22] Biopsy was indicated in cases where malignancy was suspected.

Causes of dysphagia

To establish the etiology of dysphagia it is better to divide the causes into:

Oropharyngeal dysphagia (high).

Esophageal dysphagia (low), however many disorders can overlap and they can produce both Oropharyngeal and esophageal dysphagia.^[1]

Oropharyngeal dysphagia

This called high dysphagia and referring to oral or pharyngeal location and patients usually have difficulty to initiate swallow and they usually identify cervical area as the area of presenting problem.^[1]

A precise diagnosis can be optioned when there is defended neurological condition accompanying oropharyngeal dysphagia and this includes:

Hemiparesis following cerebrovascular accident.

Pottery's of eyelid. symptom of myasthenia gravis Parkinson's is disease, Symptoms of other neurological diseases, Oropharyngeal dysphagia in young patients

most often caused by inflammatory diseases, web and rings in older people, usually caused by central nervous system disorders including stroke, Parkinson's disease and other diseases that lead to neurological deficit.^[1] Many other diseases can occurs and lead to Oropharyngeal dysphagia and this includes: Infections (acute infection, abscess, fibrosis), Thyromegaly, Zenker's diverticulum and Oropharyngeal stricture, Cervical diseases Head and neck malignancies., Oropharyngeal tumours (benign and malignant).^[1] Oropharyngeal dysphagia can also noticed in patient with neurological and neuromuscular disturbance and many cases are noticed in post stroke period and can be seen in up to 50% of cases, also it can follow Parkinson disease, cranial nerves or bulbar palsy as in multiple sclerosis and motor neuron disease.^[23]

Oropharyngeal dysphagia seen in many cases with myasthenia gravis, oculopharyngeal dysphagia and many other diseases., Many other problem when associated with initiation of swallowing and oral phase of swallowing can lead to Oropharyngeal dysphagia and this include poor dentition, oral ulcer and xerostomia.^[23]

Esophageal dysphagia

Esophageal dysphagia can also be called low dysphagia. Esophageal dysphagia which affects both solid and fluid often associated with esophageal motility problem and the symptoms are intermittent.

Esophageal dysphagia when become progressive suggest possibility of mechanical obstruction.

Three types of conditions are encountered as causes of Esophageal dysphagia.

Mucosal (intrinsic) diseases which narrow the lumen and this includes inflammation, fibrosis, stricture and neoplasm.

Mediastinal (extrinsic) diseases which obstruct the esophagus by direct invasion or through lymph node enlargement.

Neuromuscular diseases affecting the esophageal smooth muscles. Intraluminal foreign bodies' impaction can cause acute dysphagia and disappeared by removal of the foreign body.

Many mucosal disease can be identified in the esophagus and lead to esophagus and lead to esophageal dysphagia and this includes.^[24]

Gastro esophageal reflux disease (peptic stricture).

Esophageal rings and webs., Esophageal tumours.

Caustic injury., Radiation injury, Infected esophagitis.

Mediastinal disease can lead to pressure symptoms and invasion of the esophagus and this includes:

Infections (tuberculosis, histoplasmosis).

Tumours specially lung cancer and lymphoma, Cardiovascular diseases. Much disease that affects the smooth muscles of the esophagus and its innervations can lead to esophageal dysphagia and this include:

Achalasia., Scleroderma., Motility disorders, an.

As complicated surgery in the area.^[24]

Carcinoma esophagus

Cancer of in esophagus remains devastating disease it is usually not detected until it has progressed to an advanced untreatable stage.^[20] It is account as 7th leading cause of death worldwide and it gentian geographic region which have high incidence extend from region of the Caspian see East word through central Asia is Northern Chain.^[20]

The incidence of esophageal carcinoma can be as high as 30 – 80 cases per 100000 person practically in northern Iron, south Russia and northern China.

In the united states carcinoma esophagus account of 7% of gastrointestinal tract cancer.^[20]

In Sudan no epidemiological study apart from retrospective study carried in central of Sudan where it found female are more predominance and age of the patient is more younger than others areas^[30] and there is another retrospective study of 546 cases where esophageal cancer is relatially common in northern province and with female predominance.^[25]

Carcinoma esophagus is more common in males than females of rate 7:1 and occurs commonly in 6th and 7th decades. Only few cases of esophageal cancer had been reported in children in literature, many risk factors are noticed in patients with esophageal cancers and this includes:

Long used of tobacco and alcohol consumption Metal workers. F.H of cancers, Esophageal webs., Barrets esophagitis, Hiatus hernia, Plummer's Vinson syndrome. Age ,(increase with age), Race (increase in African). Type of food, Pernicious anemia, Achiorohydrria. Previous resection of tumors. Coleiac disease, Head and neck tumors, Tylosis, Achalasia, and., Exposure to radiation.^[20]

Although there are many risk factors no mention of etiological or environmental risks in the majority of reported cases. In most cases squamous cell carcinoma account of more than 95% of cases with esophageal carcinoma. In the United State since 1990 percentage of adenocarinoma had been raised.^[26] Adeno carcinoma is common in the mid and distal esophagus and predisposed by gastro esophageal reflux is metaplasia and lead to barret,s esophagitis in 10% and 1% develop adenocarinoma and patient with barrette esophagitis are advised to undergo periodic surveillance esophageal endoscopy with or wit out biopsy.^[27]

Rarely esophageal pepilloma associated with autosomal dominant disorders which associated with hyperkeratosis of the palms and soles. Human pepilloma viruses of sub types 16 and 18 have been implicated in the pathogenesis of esophageal cancer.^[28] The main clinical picture of carcinoma esophagus includes suspected history which mainly include progressive dysphagia, weight loss

difficulty in breathing, aspiration pneumonia, choking, cough and others symptoms.

Diagnosis includes plain radiography, Be swallow, endoscopy and biopsy which is diagnostic.^[27]

Others investigation can be done in some cases and this include CT scan, MRI, endoscopic ultra sound and positron emission tomography are powerful tools in detection, diagnosis and staging of malignancy.

T.N.M classifications are used in assessment of carcinoma esophagus.^[29]

Plummers' Vinson syndrome

Sidenopemic dysphagia was first described in Britain in 1919 by Paterson and Brown –Kelly and by Vinson in USA 1992.^[25] The association of post cricoids dysphagia, upper esophageal webs and iron deficiency anemia is known as plummer- vinson syndrome(PVS) in united state and Paterson –Brown – Kelly syndrome in united kingdom.^[12] The pathogenesis of Plummers Vinson syndrome remains speculative, recently postulated that the etiopatogenic mechanisms includes iron and nutritional deficiencies, genetic predisposition and auto immune factors. The incidence of iron deficiency remain controversial and it's also associated with many auto immune diseases like rheumatoid arthritis, pernicious anemia and thyroid diseases.^[25]

Dysphasia is the main presenting of Plummer venison syndrome, choking, and aspiration pneumonia are also noticed but loss of weight is a rare sign.^[12]

Reliable prevalence data of P.V.S are lacking and web account of S/S of selected cases dysphagia but don't have P.V.S^[25] Clinical signs of iron deficiency anemia were noticed and this include angular cheilitis , glossitis, koilonychias and paler.^[30] In 1970 Richards had demonstrated the association of Plummer,s- Vinson syndrome with the development of post cricoids carcinoma and cases with plumbers'- vinson syndrome need observation since 10% of them develop post cricoids carcinoma. Plain radiograph of the soft tissue neck, Ba, swallow and rigid esophagscopy are carried in cases with suspected history of plummer,s- Vinson syndrome.^[7,25]

Others chemical investigations includes level of hemoglobin, serum iron and serum B12 should be done.^[7]

The improvement in dysphasia after iron therapy provide evidence for the association between iron deficiency and post cricoids dysphasia plumbers' - Vinson syndrome.^[25]

Dilatations of esophagus and tonics supplementation are needed and in some ones biopsy are indicated in patients with unresolved symptoms.

Gastro esophageal reflux disease

It is condition in which food and liquid travel back words from the stomach to the esophagus.^[10]

Many diseases and risk factors are noticed in patient with GERD which affects the oesophageal sphincter and this includes: AGE, Hiatus hernia., Obesity, Scleroderma., (23)Laryngeal symptoms are noticed in patients with GERD and this can led to:

Subglottic stenosis, Laryngeal spasm, Posterior laryngitis. Contact vocal cord ulcer, Non specific Dysphonia and rarely, Laryngeal carcinoma.^[10]

Many symptoms are noticed in patient with GERD and this includes heart burn. Bleaching regurgitation of food, nausea, and vomiting, vomiting blood.

Hoarsens of voice, dysphagia, cough and wheezy chest.

GERD can be assessed by good history and examination and others investigation includes:

Esophageal P.H monitoring. Endoscopy where ulcers and inflammatory are noticed specially in lower esophagus Esophageal manometry. Be swallow may playrule, and Appositive Bernstein test for gastric reflex Many general aspects play role in the treatment of patient with gerd and this includes:

Reduction of weight Avoid lying down after meals.

Elevate head at sleep Take medicine with plenty of water Avoid some food like fat and chocolate

Avoid alcohol and tobacco. Many medicine have been used patient with GRED and includes anti acids, H2 raptors blockers, promotility a agents and puffer pump inhibitor and some needs surgical intervention.

-GRED may be complicated by:

Esophagegitis (Barnet) (pre malignant). Esophageal stricture.

Esophageal ulcers, Laryngeal manifestation.

Chronic pulmonary.

Justification

Dysphagia is a common problem that facing doctors and general practioned and a common cause of hospital admission. During the period between (2002-2005) the author noticed many cases of dysphagia most of them come late asking for care and diagnoses about one third of them was found to be upper aero digestive malignancy.

There have been no study done before in this area about dysphagia and it is causes.

Objectives

General objective

To highlight about dysphagia as common predate.

Specific objectives

To determine causes of obstructive dysphagia in. Radiological investigations:

This include plain radiograph of the soft tissue neck and chest. Ba .swallow was done in cases with suspected esophageal dysphagia.

MATERIAL AND RESULTS

Study design

This is a prospective hospital based study.

Study duration

The data were collected during period between 1/6/2006-31/12/2008.

Study area

It was conducted in the ENT department in Shendi and Elmak nimer university hospitals in Shendi town north of Sudan 170 kilometers) from Khartoum. Any patients seen in ENT department complaining of dysphagia especially obstructive types and those who referred from others departments specially (medical and surgery departments).

Sample size

According to the retrospective observation study done by the author between 2002-2005 more than hundred patients may be included in the study.

All cases with neurological and hysterical dysphagia were excluded from this study.

Study technique and tools

Patient's questionnaire

The questionnaire of the patient contained demographic. questions (personal data), clinical history of dysphagia, its onset, course, associated symptoms and associated history of endoscopy, F.B. impaction, neck trauma, blood transfusions and others related symptoms.

Clinical examination

This includes general examination assessment of aneamia, indirect examinations of the upper aero digestive tract if needed and general examinations of the patients.

Management of the patient with dysphagia:

Laboratory investigations

Many laboratory investigation was done to all patients with dysphagia this include complete hemogram and ESR and others selected investigation was done to some patients.

Endoscopy

Both rigid and fibero-optic upper GIT endoscopy was done in many patients in this study and some cases had direct laryngoscopy. Cases who show swelling (tumors) biopsy had been taken for histopathology. Treatment of patient with dysphagia depends on the cause and some of

them need to be referred to Khartoum for further management and return back for follow up initial managements. Data were collected and analysis was done using spss system and personal computers.

Table no 1: The duration of dysphagia in the study group.

Item	Frequency	Percentage
Less than 6 months	44	68%
6-12	13	20.3%
13-36	4	6.3%
More than 36	3	4.7%
Total	64	100%

Table no 2: The onset dysphagia in the study group.

Item	Frequency	Percentage
Sudden	14	21.9%
Intermittent	13	20.3%
Progressive	37	57.8%
Total	64	100%

Table no 3: The course of dysphagia in the study group.

Item	Frequency	Percentage
Solid	37	57.8%
Fluid	9	14.1%
Both	18	28.1%
Total	64	100%

Table no 8: Show the diagnosis of patient in the study group.

Item	Frequency	Percentage
Malignancy	16	25%
Plummer venison syndrome	20	31.3%
Gastro esophageal reflux disease	10	15.6%
Ecogosophagitis and strict	11	17.2%
Others	7	10.9%
Total	64	100%

Table no 9: Show the relationship between diagnosis and age of the patients in the study group.

		Age group					Total
		1-20	21-40	41-60	61-80	More than 80	
Diagnr	Malignancy		3	8	4	1	16
	P.V.S	1	13	5	1		20
	G.E.R.D		4	3	2	1	10
	Stricture		4	2	5		11
	Other	1	-	2	4		7
Total		2	24	20	16	2	64

P .value:0.05

Table no 10: The relationship between diagnosis and endoscopy with biopsy.

		Endoscopy/biopsy			Total
		Positive	Negative	Not done	
Diagnr	Malignancy	13	1	2	16
	P.V.S		2	15	17
	G.E.R.D		1	8	9
	Stricture		1	9	10
	Other	1		5	6
Total		14	5	39	58

P .value:0.000

Table no 4: The plain radiology of the soft tissue neck lateral view in the study group.

Item	Frequency	Percentage
Normal	30	46.9%
Abnormal	15	23.4%
Not done	19	29.7%
Total	64	100%

Table no 5: The Barium swallows of the patients in the study group.

Item	Frequency	Percentage
Normal	9	14.1%
Abnormal	26	40.6%
Not done	29	45.3%
Total	64	100%

Table no 6: The Endoscopy of the patients in the study group.

Item	Frequency	Percentage
Fibro-optic	41	80.4%
Rigid	10	19.6. %
Total	51	100%

Table no 7: The result of biopsy of the patients in study group.

Item	Frequency	Percentage
Positive result	24	82.8%
Negative	5	17.2%
Total	29	100%

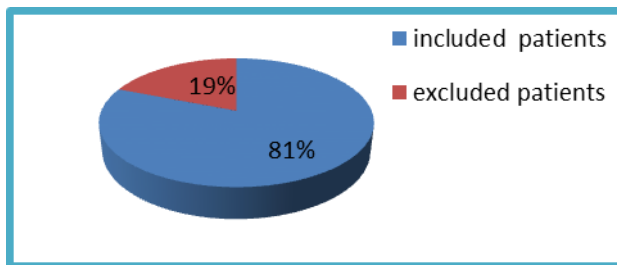


Figure 1: Shows the excluded criteria of patient with dysphagia.

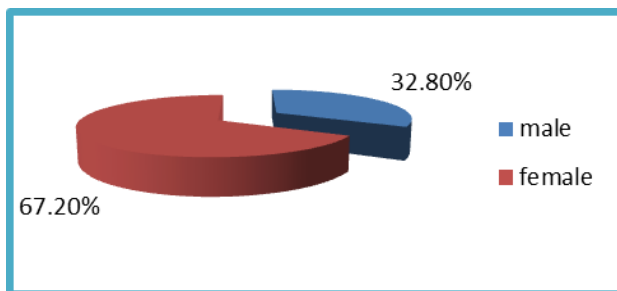
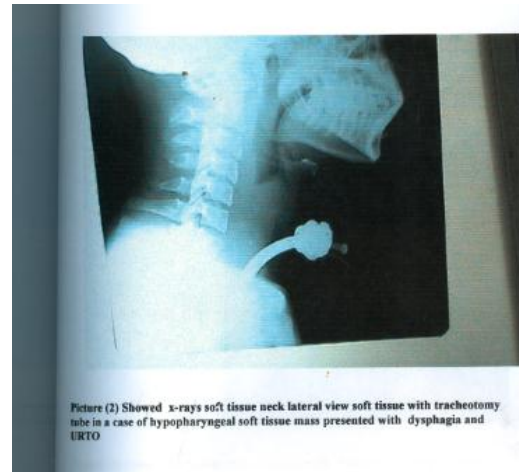
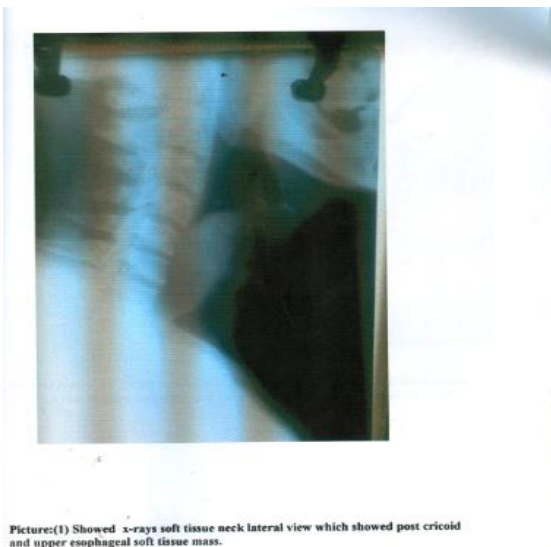
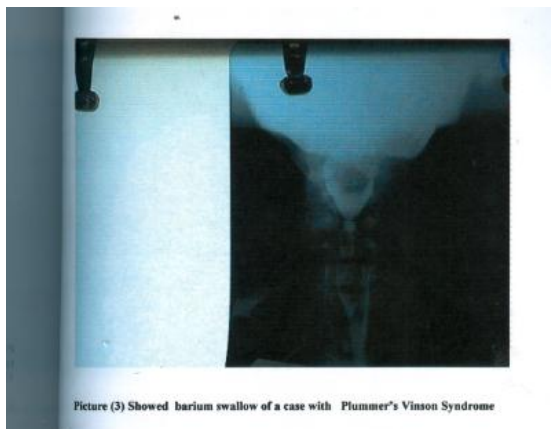


Figure 2: Shows the sex distributions.



DISCUSSION

Dysphagia is a common problem that facing many general portioned and doctors during their work in the medical field.

In spite of that dysphagia is a common problem there is no clear

- Studies in Sudan to study the swallowing problems and their causes and risk factors.

There were some retrospective studies done in central Sudan and this is the first study done in this area and first prospective hospital based study about dysphasia in Sudan.^[7,22,24]

- The aim of this study to highlights about dysphagia as a common problem that need furthers studies and co-operation of many departments to reach early diagnosis and put a clear protocol of the assessment and management of dysphasic patients and also it aim to know the common causes of obstructive dysphagia in this area and to study the possible risk factors.
- This study included 79 patients with dysphagia seen between 1/6/2006-31/12/2008. 15 of them (19%) were excluded where 14 cases had Neurological dysphagia and one case of glob us hysterics and this lower than many studies and literature review where neurological dysphagia reached more than 30% and this may be due to that many cases with neurological dysphagia managed by physicians in the area of the study and not referred to ENT department.^[1,10]
- There is a wide range of age of the patient in the study (2-85years) and only three patients in the child hood two of them had neurological dysphagia one had cerebral palsy and one had post diphtheria poly neuropathy and the 3rd one is young child with Plummer Vinson syndrome which is not commonly seen in this age groups and this case had history of recurrent foreign body impaction.^[1,7]
- There were two peak in the age of the patients in this study one in the 3rd and 4th decades among females and this noticed in the retrospective study done in the central Sudan. Where he had found that Plummer Vinson syndrome is the common causes of dysphagia in females in the 3rd and 4th decades.^[6,7]

- Also there was another peaks in 5th and 6th decades in males in this study and this goes with literature where malignancy is the main causes of dysphagia in elderly males.^[26]
- Two third of the patient in this study were females and this noticed in many studies in Sudan where they found that malignancy and Plummer Vinson syndrome were the mains causes of obstructive dysphagia among females and they account up to 60% in the patients of this study, and this controversial with others international studies where malignancy are commonly seen among males in the 6th and 7th decades.^[7,22]

Dysphagia was associated with others symptoms and this includes pain , chocking nasal obstruction , sticking of food , sensation of throat lump, loss of weight chest pain and this goes with many others studies on the swallowing disorders but in this study we noticed that up to 50% in the study had symptoms of nasal problem and this may lead to delayed diagnosis in most of them where Para nasal sinus disease were suspected and treated for long duration and lead to delayed in diagnosis of dysphagia.^[9,18]

Dysphagia is a progressing symptom in most cases and this study we found that 60%of the patients had progressive dysphagia , and the durations of dysphagia range between one moth up to 7 years but more than 2/3 of the patients had short duration between one to six months and this goes with many studies where it found that patient had some behavior changes to adapt themselves to dysphagia before looking for advices and diagnosis where the pathology had become inoperable specially in the malignant lesions and lead to spread of the tumors outside the esophagus and pharynx.^[2,20,24]

In this study which looks mainly for obstructive causes of dysphagia we noticed that good history, general and meticulous ENT examination may lead to diagnosis of most cases and there were many associated problems like repeated foreign body impactions, P.H of UGIT endoscopy and history of blood transfusion, repeated chest infection and no other neurological disease on history and this indicate that in most cases the disease is progressing and the durations of the symptoms may be more than the short durations we noticed in the study and patients may suffers from dysphagia for long duration till the lumen of esophagus had become occluded.^[2,4]

Half of the patient in the study were ill emaciated and wasted and this controversial with the short durations where we found in many cases.

Many signs of anemia were noticed which include puller (35.9%) angular stomatitis (26.6%), koilonychias (15.6%) and smooth or pharyngeal mucosa (21.9%) and this indicate the chronicty and also it's the main part of Plummer Vinson syndrome which is the main cause of dysphagia in many Sudanese females and this also

noticed by Elmustafa O.M in his retrospective study in Sudanese patients in the central of Sudan where he had found that iron deficiency anemia were the main predisposing factors of the sideropenic dysphagia.^[7,22]

Radiology play an important role in the diagnosis and assessment of patients with dysphagia and in this study we depends on x-rays soft tissue neck lateral view in which the soft tissue in the hypo pharynx and upper esophagus can be assessed and this also confirmed by study done by Elmustafa O.M.^[3,6,7,24]

Plain radiograph to the chest was done to assess some cases to exclude pneumonia which in the main presenting feature in dysphagia where spill over can occurs and to assess evidence of secondary's in malignant cases.^[17,21,24]

1/3 of patients with x- ray soft tissue neck. Were found to be abnormal where soft tissue swelling were noticed in the hypo pharynx and upper esophagus.^[7,17]

Ba.esophgram is one of very important radiological investigations used to assess dysphasia and in this study Ba swallow was done to 60% of the patients in study and it found to be abnormal in 75% of them and this a pit low than retrospective study done which include 50cases of endoscopically proven carcinoma and found that the lesion is Present on Ba esophgrams of 49 cases (98%) and in our study this is a pit low because it included all causes of dysphasia.^[1,23,26]

S. plaingerd etal reported that only 42% of patients who had abnormality in video fluoroscopy and Ba esophgrams had silent symptoms.

Fibrotic gastro esophageal and rigid endoscopy provides the best assessment of esophageal masses and to those missed to be identified by barium swallow and its used in biopsy and sometimes play role in dilatations and removal of foreign bodies in this studies both types of endoscopy were used and in 41patients (80.4%) fibro-optic endoscopy was done and only 10 patients (19.6%) had rigid endoscopy and this compared with a study done in 450 cases with dysphasia evaluated radiological only 127 cases (28.2%) of them were needed endoscopic examinations.^[23]

Another study included 2484(84%) cases with Ba esophagrams only 26% needed endoscopy and in this study we found most of the patients referred to endoscopy department before full examination and they discovered some causes of dysphagia during endoscopy and referred them back to ENT department and in this study most of the patients had obstructive dysphagia and those who had neurological and globus hystericus were excluded.^[23]

There was significant correlation between the diagnosis and age of the patients in the study (P. value 0.05) and

this goes with retrospective study done by Elmustafa O.M where he had found there was correlation between diagnosis and age of the patient and age of the patient and we found that the age is lower than those in international studies and literature specially in malignancy which had been seen mainly in 6th and 7th decades and also observed by Elmustafa O.M in his retrospective study.^[22,24]

Although there was no significant between the diagnosis and sex (P. value 0.33) among all cases but it showed that Plummer Vinson syndrome and malignancy were commonly seen in the females in this study and this also noted by Elmustafa O.M in his retrospective study in central Sudan. This controversial with international studies where malignancy was commonly seen among elderly males.^[16,20,22,24]

Since this study included mainly obstructive dysphagia there is highly significant correlation between the diagnosis and endoscopy with biopsy (P. value 0.000) and there were no significant correlation between diagnosis and sex, durations of the symptoms, course and progression of the symptoms.

Many risk factors were noticed in assessment of patient with dysphagia this include age where we found that malignancy increased with age specially squamous cell carcinoma and this seen in many studies.^[18]

Anemia specially iron deficiency anaemia were noticed 7.5% and this may be a sequelae of nutritional problem which associated with dysphagia and may be part of Plummer Vinson syndrome(PVS) which is the main cause of dysphagia in this study.^[7,9]

Other risk factors were noticed mainly in males includes snuff use which is socially common habit among males and all males were snuff tipper and also cigarette smoking was observe and in some cases with Plummer Vinson syndrome we notice mucosal changes during endoscopy where biopsy was taken and found to be positive in 1/3 of them.^[1,6,9]

Biopsy had been taken in 29 (45.3%) patients in the study and in it found to be positive in 80% of them and this mainly squamous cell carcinoma in the Hypo pharynx and upper esophagus (87.5%) and only two cases had adenocarcinoma, and this goes with many international studies where squamous cell carcinoma were the common malignancy in the upper aero digestive tract.^[22,24]

And it also noticed in Elmustafa O.M in his retrospective study on Esophageal Carcinoma in Sudanese patients where he had found that its common in females and mainly squamous cell carcinoma which affect mainly upper esophagus.^[15]

Those who had negative biopsy result revealed to have abnormal mucosal changes without any malignant cells.

16 patients (66%) who had positive biopsy was found in the Hypo pharynx and upper esophagus and another malignancy were found in the larynx mainly in supraglottic area, the tongue and the lips.

Many others causes of dysphagia were noticed in this study and this include gastro – esophageal reflux disease 10 cases (15.6%), esophagitis with or without stricture 11 cases (17.2%) and others rare cases included or pharyngeal.

Candidiasis, hiatus hernia, post chemotherapy and one case of post thyroidectomy and this noticed in retrospective study done in the endoscopy department in Elmac Nimer university hospital 2004-2007 where they found that hiatus hernia and esophagitis account about 1/3 of the patient referred for endoscopy while esophageal masses and webs were the least.

CONCLUSION

Of the 79 patients included in the study 15 of them were excluded (neurological dysphagia and one case of globus hystericus).

Their age range between 2-85 years but the peaks incidence was 3rd and 4th decades among females and 5th and six decades among males.

2/3 of the patient in the study were females the most common causes of dysphagia in this study were found plummer, vinson *syndrome*(31.3%), malignancy(25%), esophagitis and esophageal stricture(17.2%), GERD(15.6%) and other rare causes were noticed(10.9%).

Good history with meticulous clinical examination including ENT examinations with dividing dysphagia into oropharyngeal and esophageal dysphagia may lead to diagnosis of 85% of cases.

In this study we depends on history and good clinical examination and some others radiological investigation like plain radiography, barium esophgram and some laboratory investigations including complete homgram and ESR.

Endoscopy of an important role in this study for assessment of the patient specially where change in the mucosa were suspected or where malignant tumours were seen in radiology and biopsy should be takes for histopathology and some patients needed for dilatation specially with rigid eosophascop as in plummer,s Vinson syndrome.

Aneamia specially iron deficiency was commonly seen in patient with dysphagia and this may be a part of

plummer,s Vinson syndrome or sequele of nutritional problem which associated with dysphagia.

Squamous cell carcinoma account of most of the cases with malignancy in the study(87.5%).

RECOMMENDATION

Dysphagia is a common problem that needs further studies and a cooperation of many departments.

Heath education about the problem and some need only education and training by speech therapist.

Improve facilities diagnosis and special tools used for diagnosis.

Put standard protocol for the assessment and management of dysphagic patients.

Further studies on the possible risk factors in the area of the study.

This is the time for develop of dysphagia center Sudan for early detection of cases and to help patients before develop of complications.

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