Research Article

Challenges in the Management of Patients with Cancer of the Esophagus at Muhimbili National Hospital, Dares Salaam

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Abstract

Background: Cancer of the esophagus is lethal digestive malignancy, at diagnosis the diseases is commonly advanced thus limiting treatment options. Risk factors and treatment options are well documented but still the disease management is challenging. **Methods:** A prospective cross sectional study on histological con irmed patients with cancer of the esophagus was done at Muhimbili national hospital between April and December 2016. Data regarding age, sex, endoscopic indings, histological type, treatment options and management challenges at Muhimbili national hospital data were recorded and later analyzed using Statistical Package for Social Scientists (SPSS) version 22. **Results:** A total of 391 patients with cancer of the esophagus were enrolled in this study, male: female ratio 2:1, majority were peasants and low educated. SCC constituted 90% of the histological samples, and 67.5% of all tumors were located in the middle third of the esophagus. Moderately differentiated tumor found in 43.5% whereas 93.1% of all patients had locally advanced tumors. Regarding performance status 47.8% and 29.2% were limited to self-care and completely disabled respectively. Furthermore, palliative treatment was opted to 322 (82.4%) of different modalities, majority 178 (55.3%) were opted to receive SEMS, 56 (17.4%) received chemo radiation and 38 (11.8%) palliative / supportive therapy mainly gastric feeding tubes. Surgical intervention was opted to 25 patients but only 8 were actually done and none of the operation was done on time due to shortage of human and material resources. Delayed presentation for 2-6 months after the onset of clinical symptoms was common. Misconception of bewitched was found in 50 (12.8%) of patients, Socio-economic status in luenced accessibility and affordability of health services, cash and health insured patients tend to seek health care early and afford treatment and diagnostic costs as compared to public patients. Majority of patient came from regions along the coast region. **Conclusion:** SC is common and lethal digestive malignancy, majority of patients presents late at diagnosis, socio-economic status has an in luence in accessibility and affordability of health care. Poor performance status, limited material, human and technological resources made management of the disease highly challenging. SEMS has been the best palliative method however the availability and affordability was a major challenge moreover surgical output was signi icantly low. Furthermore there was noticeable geographical distribution pattern of EC in the country.

Keywords: Misconception; Cancer; SCC: Squamous Cell Carcinoma

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Abbreviations: EsC: Esophageal Cancer; KCMC: Kilimanjaro Christian Medical Centre; MUHAS: Muhimbili University of Health and Allied Sciences; MNH: Muhimbili National Hospital; ORCI: Ocean Road Cancer Institute; SCC: Squamous Cell Carcinoma.

Introduction

Esophageal Carcinoma (EsC) affects more than 450,000 people worldwide and the incidence is rapidly increasing. The disease is extremely aggressive and only 5-10% of patients survive for 5 years after initial diagnosis [1]. The American Cancer Society's estimates for esophageal cancer in the United States for 2015 are, about 16,910 new esophageal cancer cases diagnosed (13,460 in men and 3,450 in women) and about 15,690 deaths from esophageal cancer (12,720 in men and 2,970 in women) in Tanzania it accounts 25.3% of all gastrointestinal malignancy [2]. The classical presenting symptoms of dysphagia, weight loss and regurgitation for EsC are often absent until the primary tumor has advanced. Also treatment of cancer of the esophagus is problematic and mortality rates are very high with no cure in the majority of cases at time of presentation. Many patients are received at MNH with cancer of esophagus, an average of one patient per day; for the past five years cancer of the esophagus has been a leading course of admission and death among men and second in females after breast cancer [3].

Despite high mortality rates, very little is being done and information are critically lacking with limited documented literature available on the challenges in managing [4]. These patients particularly at MNH and patients who qualify for surgical intervention are not receiving such care. The result of this study will help the planners to improve the state of affair in terms of human resources, infrastructures, quality of care, hospital service price affordability and rising awareness to the community about disease burden and continuing education about disease burden and continuing education [5]. Also the data obtained from this study can be used to develop a protocol for the management of patients with cancer of the esophagus at MNH and to initiate campaign to detect patients at the early stage of the disease so that a more definitive surgical treatment can be offered. The aim of this study was to assess the challenges in the management of patients with cancer of the esophagus at muhimbili national hospital, dares salaam [6-8].

Materials and Methods

Cross sectional study was done at MNH in the department of surgery from April 2016 to December 2016. Histological confirmed patients with cancer of the esophagus were enrolled in the study. Evidence for metastasis and respectability for surgical intervention was sought through abdomino-pelvic ultrasound, chest x rays and thoracic-abdominal CT scan respectively. A sample of 391 were obtained, data regarding age, sex, endoscopic findings, histological type, treatment options and management at MNH were obtained from patients using a structured questionnaire. A computer software SPSS version 22 template for data compilation and analysis proportions and mean. *Chi-square* test was used to test for significance of associations between the predictor and outcome variables in the categorical variables. Student's t test was used to test for significance of associations between the predictor and outcome variables in the continuous variables. Significance was defined as a p value of <0.05. Ethical clearance was sought from the MUHAS research and publication committee and MNH research and publication committee before commencement of the study. The confidentiality of patient information contained in the research protocol was paramount [9,11].

Results

Socio-demographic characteristics of the study population in below Table 1.

Table 1: Distribution of patients by age, level of education, occupation and sex.

Variable		M	F	
Age	<30	9 (2.3%)	2 (0.5%)	11 (3%)
	31-50	58 (14.8%)	46 (11.8%)	104 (26%)
	51-70	125 (32%)	52 (13.3%)	177 (45%)
	>70	74 (19%)	25 (6.4%)	99 (25%)
Level of education	Primary education or no formal education	236 (60%)	109 (28%)	345 (88%)
	Secondary education	28 (7.2%)	16 (4%)	44 (11.3%)
	Above secondary education	2 (0.5%)	0 (0%)	2 (0.5%)
Occupation	Peasant	205 (52%)	99 (25.3%)	304 (77.7%)
	Employed	31 (7.9%)	12 (3.1%)	43 (11%)
	Retired	30 (7.7%)	14 (3.4%)	44 (11.3%)
Total		266 (68%)	125 (32%)	391 (100%)

In Table 1 above; total of 391 patients with cancer of the esophagus were enrolled during the study period. Majority of the patients were males, male:female ratio of 2:1 in all the age groups. The age group 51-70, 177 (45%) constituted the

majority of the patients few had 30 years and below, majority of the respondents 345 (88%) had basic (primary or no formal education) and few with secondary education or above secondary education (12%). subsistence farmers 304 (78%), employees were 43 (11%) and the remaining were unemployed 44 (11.3%). Squamous cell carcinoma is the predominant histological type found in 353 (90%) of all patients majorities are of low grade and moderately differentiated 150 (38.4%) and 148 (38%) respectively compared to adenocarcinoma which majorities were moderately and poorly differentiated 22 (5.6%) and 9 (2.3%) p 0.012 and 265 (67.8%) were in the middle third of the esophagus whereas adenocarcinoma were found in the lower third 38 (10%) of all patients, p-0.000. Durations of symptoms from when they started to diagnosis , majorities symptoms existed for more than 2-6 months 313 (80.1%), 45 (11.5%) their symptoms presented for less than two months while 33 (8.4%) has symptoms which existed for more than 6 months prior to the diagnosis. However those who are insured are likely to present early to the hospital as compared to public 25.5% and 9.6% respectively (Table 2) [12].

Table 2: Shows characteristics of patients and treatment modality chosen.

Variable		Treatment modality chosen			Total	P value
		Surgery	Palliative therapy	Home based care		
Patient category	Public	6 (1.5%)	296 (75.7%)	42(10.7%)	344	P-0.000
	Insured	19 (4.9%)	26 (6.6%)	2 (0.5%)	47	
Age	<30	3 (0.76%)	8 (2%)	0	11	P-0.000
	31-50	11 (2.8%)	89 (22.8%)	4 (1%)	104	
	51-70	10 (2.5%)	154 (39.4%)	13 (3.3%)	177	
	>70	1 (0.3%)	71 (18.2%)	27 (6.9%)	99	
PS ECOG	Full active	18 (4.6%)	0	-	18	P-0.000
	Restricted to strenuous activities	7 (1.8%)	11 (2.8%)	0 (0%)	18	
	Ambulatory and capable of self care	0 (0%)	61 (15.6%)	1 (0.3%	62	
	Limited self care	0 (0%)	180 (38.4%)	0	180	
	Completely disabled	0 (0%)	70 (17.9%)	43 (11%)	113	
	Total	25 (6.4%)	322 (82.4%)	44 (11.3%)	391	

In Table 2 above; It was modality used 322 (82.4%) and that majority of health insured or private patients were able to afford surgical treatment as compared to those in public scheme who majority 296 (75.7%) received palliative therapy of different modalities and home based care for terminally ill patients was opted for 44 (11.3%) of all patients. It also showed that; elderly patients >70 years 71 (18.2%) were at most palliated with different modalities with exception of 1 (0.3%) whereas 27 (6.9%) were weak such that were sent home for home based care. With regard to patients' fitness for surgery; majority had poor performance status 180 (38.4%) *i.e.* Limited to self-care and only 25 (6.4%) were examined and found to be fit for surgery (Figure 1) [13-16].

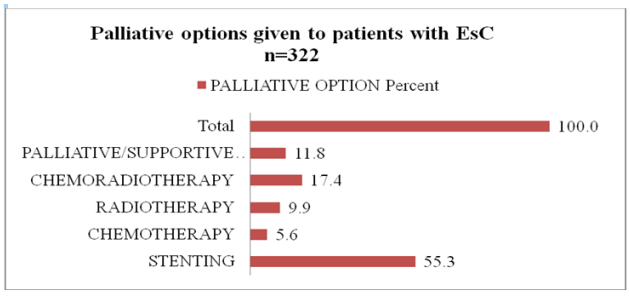

Figure 1: Shows palliative options given to patients with cancer of the esophagus at MNH.

Figure 1 above shows 322 (82.4%) of all patients with cancer of the esophagus who were given palliative treatment of different modalities, majority 178 (55.3%) were opted to receive SEMS followed by 56 (17.4%) received chemo radiation, 38 (11.8%) received palliative / supportive therapy mainly Gastric feeding tubes (Figure 2).

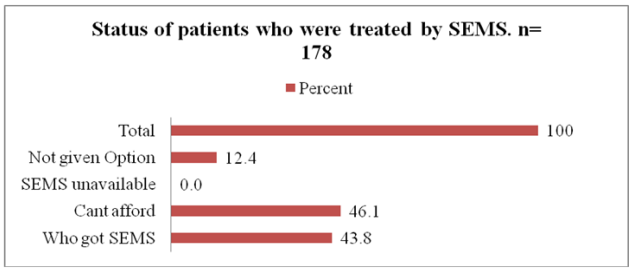

Figure 2: Status for patients who were palliated by SEMS.

The Figure 2 above shows specifically patients who were planned for SEMS, 78 (43.8%) were able to get and palliated with SEMS, 82 (46.1%) couldn't afford the cost for SEMS whereas 18 (12.4%) were not given such an alternative to dysphagia palliation. Misconception about witchcrafts is a problem in 50 (12.8%) majority of patients with primary education or no formal education or peasants would believe so that they are bewitched at first 49 (12.5%) and 39 (9.9%) respectively but still significant number of patients thinks the disease is like any other disease 341 (87.2%). Twenty five patients scheduled for operation (esophagectomies), none of them receive treatment on time and the main reasons for postponing operations were shortages of consumables in particular double lumen endotracheal tubes (seven cases), no ICU bed needed post esophagectomy care (five cases), patient is fit for operation but has no funds (five cases), no theatre space (three cases), no anesthesiologist capable for such long procedure (two cases). Among these 8 (32%) patients underwent surgery after overcoming above obstacles and commonly noted postoperative complication were anastomotic leak in one patient, major airway injury and in hospital mortality one patient (Figure 3).

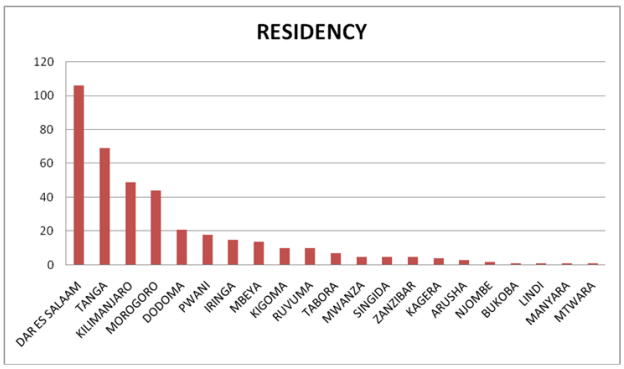

Figure 3: Showing residency by region from which the patients came from.

Figure 3 above shows residency by region from which patients with cancer of the esophagus resides, majority were coming from Dares salaam 106 (27.2%) followed by Tanga region 69 (17.6%) also Kilimanjaro, Morogoro, Dodoma, Pwani and Iringa were among the highly reported areas from patient admitted with chances of the esophagus 49 (12.5%), 4 4 (11.3%), 21(5.4%), 18 (46%) and 15 (3.8%) respectively.

Discussion

The aim of this study was to assess challenges in the management of patients with cancer of the esophagus at MNH, Dares Salaam. A total of 391 patients with cancer of the esophagus were enrolled into the study. Majorities are in their fifth and seventh decades with male: female ratio of 2.1:15,6; though higher ratio of 26.5:18 has also been reported and was rare below the age of 30 years 9,10,11. These results indicate; the risk factors for both sexes would be similar and linked to environment or life-style component. Similar to other studies we also find SCC the most common type in majority and three quarter was in the middle third of the esophagus. Tissues taken from tumors located in the lower third 100% were adenocarcinomas by histology 5,15,16,39 majority were moderately differentiated 170 (43.5%) tumors 5,16. Late presentation at diagnosis is not uncommon in majority, factors attributing are; poor health seeking behavior to majority worsened by misconception by traditional beliefs and myths about devastating cancer therapy especially radiations. Other factors are incapable primary health facilities in diagnosis preliminary changes before overt signs and symptoms and lack of screening services countrywide. Other factors that found to influence health seeking behavior include level of education, occupation where by the more educated the individual is the more likely to seek medical attention early 50. Compared to Kenya, screening program has proven success where by early esophageal mucosa dysplastic changes was detected early and treated accordingly by modalities which are less invasive, at low cost, low mortality and morbidity rates and less post-operative complications 16. To us it will reduce patient overcrowding at ORCI; the only center for cancer treatment in the country Palliative therapy is not uncommon treatment option in majority of our patients 322 (82.4%) This choice of treatment is influenced by patient's general condition at diagnosis and treatment decision makeup; majority had poor performance status, advanced disease at diagnosis which is incompatible with curative intent modalities, many patient presents at an average of 2-6 months from the onset of clinical signs and symptoms. Others reported four months 5 and 3-52 weeks. Self-Expanding Metal Stents (SEMS) is the preferred palliative therapy at MNH for dysphagia 178 (55.3%). Other modalities chemotherapy, radiotherapy or both are similar as reported in other studies 34,35,36,48. Despite of high demands for SEMS, yet not readily available and accessible by majority, of 178 (55.3%) opted for SEMS only minority actually managed to get the device 43.8% where as 46.1% and 12.4% are not able to get it or not given such an option respectively due to unavailability or high costs for the device. It is not available within institutional facilities that has to be found else were outside MNH leading to invasive treatment and of high costs like chemotherapy or radiotherapy to majority and overloading cancer institute with patients, however to reduce this burden we encourage the use of locally available oncological services at MNH for treating these patients [17,18] We find 25 (6.4%) of our patients fit for surgery (esophagectomy), however only 8 (32%) were performed,

this is low output when compared to existing patients on the list and to other centers within East Africa region e.g. Tenwek Hospital in Kenya 49,50 and it has been possible to operate after introduction of surgical gastroentology services that has improved diagnosis and treatment decisions make up and active case search for an early intervention. Observed challenges that we noted are lack of consumables specially double lumen endotracheal tubes which are not available in our locality and had to be bought from Nairobi, others were shortage of intensive care units space though currently the space available but number of beds and ventilators is limited to 6, in some occasions patient had not been prepared correctly, or have to solicit funds for the surgery which led to postponing of the procedures. Lack of consumables could be attributed by the fact previously esophagectomies were not routinely done so specific needs for the procedures were not ordered and yet the longer the procedure, more techniques and skills demands equal weight on operation fee in contrast to current situation at MNH., Postoperative complications we encountered are anastomotic leakage and major airway injury which was the immediate cause of death in one patient. Patient category influences accessibility and affordability of health services, those who were health insured or private patients have direct access to health care services especially tertiary level and capable of managing diagnostic and treatment costs more than the public patients who have to go through long referral system to reach diagnostic and treatment centers. Also we observe that insured patients are likely to present early and enables curative intent than the public who majority come at advanced stage. Majority has to wait for more than two weeks for histological confirmation, this increases bed occupancy rate and delays initiation of appropriate therapy and patient condition keeps deterioration. There was no written/reported protocol observed in the management of patient with cancer of the esophagus at MNH this lead to none-standardized management plans to patients. There is geographical distribution 50, 51 in the eastern coast region, northern zone and central zone; this signifies that there is an environmental etiology which has to be studied. Also proximity of these regions to diagnostic and treatment centers of KCMC, ORCI and MNH can lead to increased diagnosis and hence having high prevalence value for the disease. The debilitating course and risk factors for cancer of the esophagus are well known 5, 29 yet at MNH and Tanzania at large little are documented on the management challenges of this patient [19-20].

Conclusion

Cancer of the esophagus is common and lethal; majority of patients presents late at diagnosis, socio-economic status has an influence in accessibility and affordability of health care. Poor performance status, limited resources made management of the disease highly challenging. SEMS has been the best palliative method however the availability and affordability was a major challenge moreover surgical output was significantly low. Furthermore there was noticeable geographical distribution pattern of EC in the country.

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