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Response to Palliative Esophageal Dilatation used in the Management of Dysphagia in Advanced Esophageal Cancer Jan 2014-March 2015

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ABSTRACT:

The incidence of esophageal cancer has risen in the last decades. Worldwide an estimated 456,000 cases and 400,000 deaths in 2012, with male gender predominance.

The aim of this study was to evaluate the response to palliative endoscopic dilatation used in management of locally advanced esophageal carcinoma in National Cancer Institute - University of Gezira and Gezira center for endoscopies and laparoscopic surgery in Wad - Medani Teaching Hospital. Retrospective cross-sectional , case based hospital study, from January 2014 to April 2015 including 108 esophageal cancer patients. It was found that one hundred and eight cases of esophageal cancer were diagnosed. 75 (69.4%) were females and 33 (30.6%) were male, with female to male ratio of 2.3:1.Most of them presented with locally advanced disease, 56 (51.9%)

58 (53.7%) of all patients underwent endoscopic esophageal dilatation. 36 (62.1%) of those patients underwent OGD dilatation before or after starting radiotherapy by variable time and some of them at the time of endoscopy. Improvement was seen in the dysphagia score in 20 (55.6%) of patients , the minimum duration of improvement was 1 week and the maximum was 2 months. 22 (37.9%) of the patients received RT and underwent dilatation at the same period, 21(95.5%) of them improved, 3 weeks was the minimum and 6 months the maximum duration of improvement. 15 (25.9%) were difficult dilation procedure because of long stricture. There were no significant complications. Pain during the procedure was the common side effect in 40 (69%); surgical emphysema in one patient(1.7%) and there were no complications in 17 (29.3%) of the dilated patiets. 31 (30.4%) has received RT alone, 23 (74.2%) showed improvement in their swallowing ability, the minimum duration of improvement was 3 weeks and the maximum was 7 months. 11 (12.9%) underwent second dilatation with apparent improvement in their swallowing ability. The results of the study were obtained from the patients till their last follow up or death. It was concluded that, esophageal cancer is more common among females . Almost all patients came with locally advanced disease and received palliative management. 53.7% underwent endoscopic dilatation, with apparent improvement in most of them especially if used in conjunction with radiotherapy to prevent post radiotherapy strictures, with no significant complications during the endoscopic procedure, so the study

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concluded that the endoscopic dilatation , can be safely used in advance esophageal carcinoma when esophageal stenting is not available.

Introduction

Oesophageal cancer is cancer arising from the esophagus that runs between the throat and the stomach.(1) Symptoms often include difficulty in swallowing and weight loss. Other symptoms may include pain during swallowing, a hoarse voice, enlarged lymph nodes, a dry cough, and possibly vomiting of blood.(2)The two main sub-types of the disease are esophageal squamous-cell carcinoma (SCC), which is more common in the developing world, and esophageal adenocarcinoma , which is more common in the developed world.(1) A number of less common types also occur.(1) SCC arises from the epithelial cells that line the esophagus.[3] Adenocarcinoma (AC) arises from glandular cells present in the lower third of the esophagus, often where they have already transformed to intestinal cell type (a condition known as Barrett's esophagus).(1,4) The most common causes of the squamous-cell type are: tobacco, alcohol, very hot drinks, and a poor diet.(5) The most common causes of the adenocarcinoma type are smoking, obesity, and acid reflux.(6)The disease is diagnosed by endoscopic biopsy.(6) Treatment is based on the cancer's stage and location, together with the person's general condition and individual preferences. Small localized SCCs may be treated with surgery alone with the hope of a cure. In most other cases, chemotherapy with or without radiation therapy is used along with surgery.(6) In the presence of extensive disease or if the affected person is not fit enough to undergo surgery, palliative care is often recommended.(6) Outcomes are related to the extent of the disease and other co morbidities, but generally tend to be fairly poor, as diagnosis is often late.(1,7) Five-year survival rates are around 13% to 18%.(2,8)

Objectives

The main objective of the study was to evaluate the response to endoscopic esophageal dilatation in advanced esophageal cancer in the study group and compare it with the conventional palliative stenting used in other centers.To report the percentage of common side effects which occurred after esophageal dilatation.And to asses if the dilatation followed by radiotherapy gives more response than dilatation alone when used in the palliative management of dysphagia in advanced esophageal cancer.

Methodology

Descriptive retrospective cross sectional hospital based study, carried out in National Cancer Institute – University of Gezira and Gezira centre for endoscopies and laproscopic surgery in Wad-Medani Teaching Hospital in the period of January 2014 to March 2015 . Study population were patients proven to have esophageal cancer in National Cancer Institute – University of Gezira ,. Inclusion criteria included all adult patients with established esophageal carcinoma, patients who underwent endoscopic dilation with or without radiotherapy for management of their advanced disease. Exclusion criteria included

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patients missed their follow up and patients who had incomplete recorded data. The sample size was 108 cases of esophageal cancer patients. Data was collected by reviewing the hospital medical records. The information obtained was entered in specially designed questionnaire. Data was analyzed by SPSS program.Dilatation was done by savary dilator using olympus Exera 2 gastroscope

Results

One hundred and eight cases of esophageal cancer were diagnosed from January 2014 to March 2015. 75 (69.4%) were females and 33(30.6%) were males, with female to male ratio of 1:2.3. (Figure 1). The most affected age groups were 50 to 59 years (31.5%) followed by age roup 60 to 69 years (29.6%) (Figure 2). Almost all of them presented with locally advanced disease, 56 (51.9%)with dysphagia score 3 ; 27 (25%) with dysphagia score 4; 13 (12%) with dysphagia score 1 and 12 (11%) with dysphagia score 2. (Figure 3). The duration of symptoms was 3-6 months in 54(50%) of the patients. 89.8% of the tumours were squamous cell type, and 10.2% were adenocarcinoma.58 (56.9%) of all treated patients underwent endoscopic esophageal dilatation.

36 (62.1%) of those patients underwent OGD dilatation before starting radiotherapy or after by variable time (Table 1). Improvement was seen in dysphagia score in 20 (55.6%) of patients.

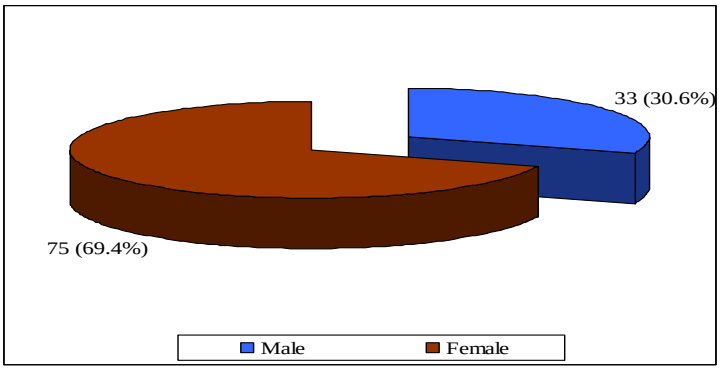

Figure 1: Distribution of the study population according to gender

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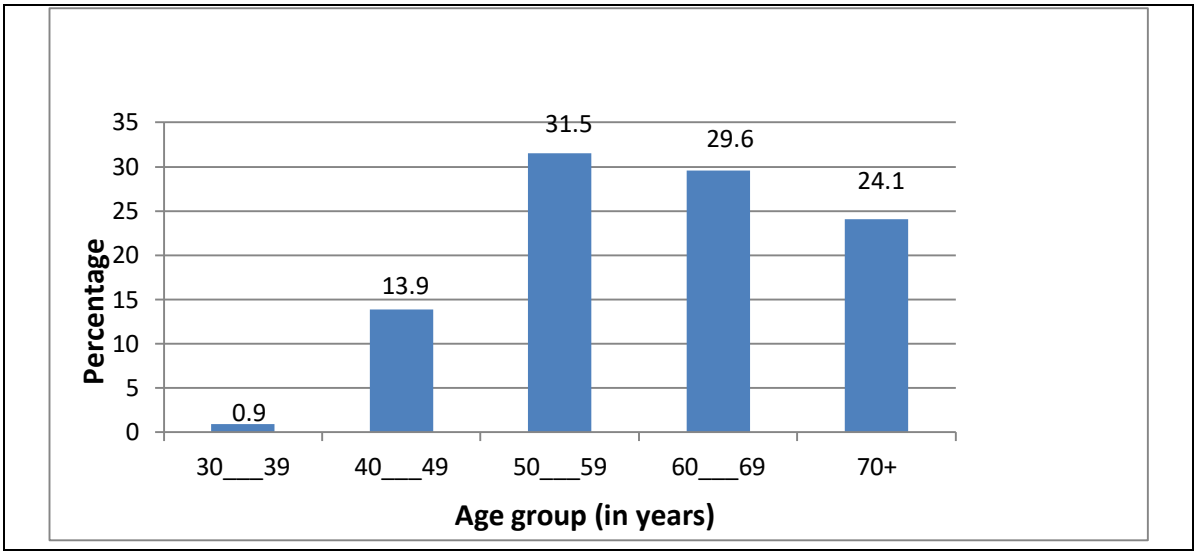

Figure 2: Distribution of the study population according to age

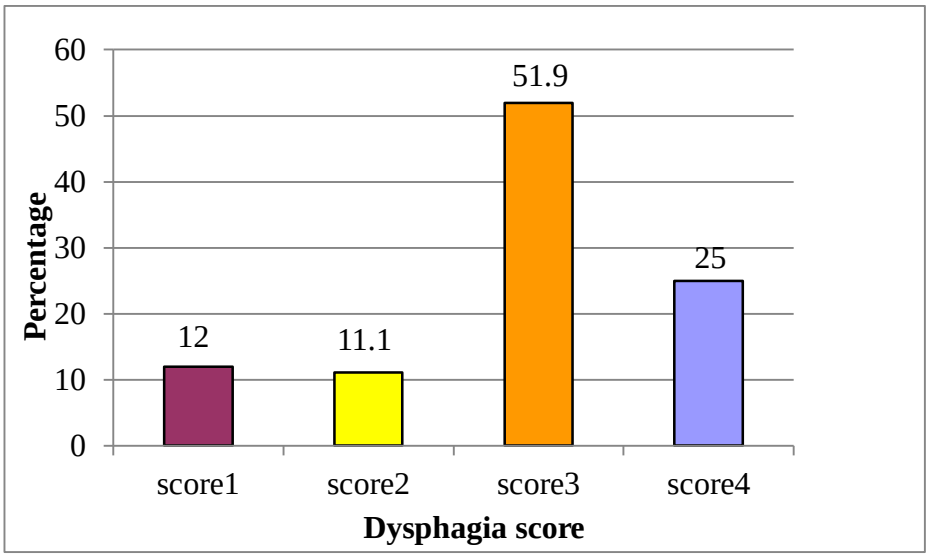

Figure 3: Distribution of the study population according to dysphagia score

***Dysphagia score:**

Grade 1 Able to swallow solid foods with some difficulty

Grade 2 Able to swallow soft or semi solid foods only

Grade 3 Able to swallow liquefied foods and liquids only

Grade 4 Unable to swallow liquids/saliva

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Table 1: Distribution of the study population according to modality of palliative management

Modality of palliative management	Frequency	Percentage
Endoscopic dilatation alone	7	6.5
Dilatation plus radiotherapy	51	47.2
Radiotherapy alone	31	28.7
Radiotherapy and chemotherapy	8	7.4
Chemotherapy alone	5	4.6
Not received treatment	6	5.6
Total	108	100

The minimum duration of improvement was one week and the maximum was two months after OGD dilatation (p=0.000).(Table 2). 22 (37.9%) of these patients has received RT and underwent dilatation at the same period, 21 (95.5%) of them improved with no post RT stricture.

3 weeks was the minimum and 6 months the maximum duration of improvement after dilatation followed by RT at the same time (p=0.000). (Table 2). 15 (25.9%) has difficult dilation procedure because of long stricture. There were no significant complications during endoscopic dilatation, Pain during the procedure was the common side effect in 40 (69%); surgical emphysema in one patient(1.7%) and there were no complications in 17 (29.3%) of the dilated patients31 (30.4%) has received RT alone, 23 (74.2%) showed significant improvement in their swallowing ability with no improvement in 8 (25.8%).

Table 2: Duration of improvement among dilated patients before or after radiotherapy

Duration (in month)	Frequency	Percentage
Less than 1 month	**11**	**55**
1 month	**4**	**20**
2 months	**5**	**25**
Total	**20**	**100**

The minimum duration of improvement after RT was 3 weeks and the maximum was 7 months (p=0.000).11 (12.9%) underwent recurrent dilatation with apparent improvement in there swallowing ability.The result of the study from all patients was obtained till their last follow up or death.

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Discussion:

Esophageal cancer incidence is increasing during the last decades and it is causing significant number of deaths worldwide. Most of patients came late with advanced disaese and treated palliativelly.The current study was an attempt to analyze esophageal cancer cases and evaluate the response to endoscopic esophageal dilatation used in palliation of dysphagia in advanced esophageal cancer.In this study the males represented 31% and females 69% , while a study conducted by Mohammed ME, et al about esophageal cancer in Gezira, found that out of 702 patients 75.3% were females, but Cheng ML, Zhang L[12] , et al about the incidence of esophageal cancer in Eastern Africa found that in Blantyre, 351 male (59%) and 239 (41%) female . In Harare, 213 male (61%) and 134 (39%) female. In Kampala, 196 (59%) male and 137 (41%) female. In Nairobi, 323 male (57%) and 239 female (43%). Except in Nairobi, incidence among males was significantly higher than among females ($p<0.01$) [6]. Similar observations of male predominance were found in many worldwide studies [5]. In this study the common age distribution between 38 to 90 years old and the commonest age group is 50 -69 , similar observation was found in early study carried out in Sudan which also found that the common age group was 50-69 years. While in the literature it is higher and common at 61 -79 years [10].The mean age for esophageal cancer in the current study is 60.5 years, with the mean age for males was 65.06±9.90 and of females was 58.5±12.4 years, but it was different in Mohammed ME, et al study with the mean age of females was 52.75±11.66years and that of males was 66.11±9.52 years [11].In this study most of the patients received RT alone as management of advanced esophageal disease compared to the conventional chemo-radiotherapy used worldwide. In the current study found that 58 out of 108 patients underwent palliative dilation and there was significant improvement in swallowing ability in 41 (70.7%) patients, as opposed to HA Heit et al Johnson LF, et al study which found that 24 out of 26 patients (92.3%) were able to resume a soft or regular diet after dilation [15].

The duration of improvement in those underwent dilatation without concurrent RT in this study was less than 1 month in most of the patients (55%), and the maximum was 2 months in 25%. In those underwent dilatation and RT at the same time 38.1% showed improvement at 3 months with the maximum period was 5 months in 9.5%. This was different from L, Lundell , et al study which showed the Substantial improvement in swallowing ability after each treatment, the dysphagia recurred, however, and the dilatations were repeated at intervals of about 4 weeks. [14]

This study showed no significant complications during the dilatation procedure which agreed with HA Heit et al, Johnson LF, et al study and disagree with L Lundell, , et al which found few complications, the most prominent being perforation (in 5% of 128 sessions)[15]

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Conclusions:

The number of oesophageal carcinoma cases is increasing among patients who attended the national cancer institute in Gezira state with a female predominance.

Most of patients came late and received palliative management.

There is significant number of patients in whom palliative endoscopic dilatation was undertaken with apparent improvement in their swallowing ability.

Recommenations:

Esophageal stenting is the preferred method for palliation of dysphagia and fistulas in patients with esophageal cancer. Endoscopic dilation of the oesophagus and oesophagogastric junction give good palliation, and can significantly improve the quality of life for these patients and could be considered if stenting is not available .The technique is simple, cheap and safe. It is suitable for lesions at any site, not time-consuming and available at almost all endoscopy units. Further studies need to be implemented involving larger sample size and over many years to assess the risk factors for oesophageal cancer

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