

Esophageal Adenocarcinoma in a 23 Year Old Male: A Case Report

Florence Joyce T Espe^{1*} and Rolan Ohmar A Yumul¹

¹Department of Oncology, Philippines Medical Center, Quezon, Philippines

Corresponding author: Florence Joyce T Espe, Department of Oncology, Philippines Medical Center, Quezon, Philippines, Tel. 9159916759, E-mail: florence_espe24@yahoo.com

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Abstract

Objective: To describe a case of esophageal adenocarcinoma in a 23 year old male.

Methods: We described the clinical presentation and laboratory profile of the patient and conducted a review of related literature regarding esophageal adenocarcinoma in the young.

Discussion: Esophageal cancer is a rare disease which occurs most frequently among older adults and is very rare below 30 years of age. This is a case of a 23 year old previously healthy male patient who presented initially as progressive dysphagia, epigastric pain and anemia. Esophagoguodendoscopy showed an obstructing lower esophageal mass. Biopsy result showed esophageal adenocarcinoma. The patient had no risk factors to developing the disease. The disease was caught in advanced stage, hence, management was palliative.

Conclusion: Esophageal Adenocarcinoma is rare below 30 years of age and if detected at an advanced stage upon presentation, has a poor prognosis. Patients who present with dysphagia early in the disease indicates locally advanced disease and tumor invasion of esophageal musculature. Survival is shorter among younger age group due to biologically more aggressive disease. Goals of management if it has progressed to Stage IV include palliative and supportive care with focus on nutritional build-up, prevention and management of infection and reduction of risk for thromboembolism. Identification of potential risk factors may contribute to the early detection and treatment of the disease.

Key words: Esophageal; Adenocarcinoma; dysphagia; epigastric; anemia

Introduction

Esophageal Cancer is a relatively rare but is significantly associated with high mortality. The exact cause of esophageal cancer is not clear. However, it is considered to be an outcome of multiple demographic factors, diet and lifestyle, environmental and genetic factors. The predominant histologic subtype is squamous cell carcinoma which account for 80% of

cases. Risk factors for developing esophageal squamous cell carcinoma include achalasia, tobacco or alcohol use, caustic esophageal injury and history of cancer and cancer treatment [1]. The most common location of esophageal cancers is the lower third amounting to 55% of cases, followed by the middle third (35%) and the least common is located in the upper third or cervical esophagus (10%). Esophageal cancer is most frequently diagnosed among older adults with a median age of 67 years old. Only 3.2% afflicted with the disease account for patients less than 45 years of age [2]. This study will report on a case of esophageal adenocarcinoma in a 23 year old male.

Case Report

This is a case of a previously healthy and physically active 23 year old male who was undergoing his first year of military training at the Philippine Military Academy [3]. One month prior to admission, he presented with recurrent episodes of moderate to severe epigastric pain, piercing in character, non-radiating, with pain scale ranging from 5-7/10. It was not associated with hunger or satiety and other gastrointestinal symptoms such as weight loss, constipation or diarrhea. Frequently, he endures the pain for two to three hours, then it spontaneously disappears. Occasionally, when pain was severe he sought consult at the academy hospital, where he was given antacids which afforded him temporary relief [4].

After two weeks, patient noted difficulty in swallowing solid food which resulted to difficulty in eating, loss of appetite and subsequent weight loss. At this time, he also noted increasing frequency of epigastric pain to almost daily [5]. He also noted easy fatiguability described as difficulty in performing usual physical activities and athletics, generalized body malaise and pallor. Patient consulted at the Academy station hospital where patient was diagnosed with gastritis. Laboratory work-up was not done at this point and he was given Omeprazole 40mg/tab which he took for 10 days. However, it afforded no relief as he continued to have progressive symptoms, now to also include difficulty in swallowing liquid, progressive weight loss and increased easy fatiguability. He again sought follow up at same station hospital. Complete blood count revealed hemoglobin of 80 g/dL. He denied history of melena, hematochezia, hematemesis, easy bruisability or bleeding tendencies. He was transferred to Armed Forces of the Philippines Medical Center for further work-up and management [6]. He had unremarkable Past Medical History. Likewise, there were no history of cancers,

blood dyscrasia or ulcers in both sides of his family. Patient claimed to be a non-smoker and occasionally drinks alcoholic beverages.

On admission, patient had stable vital signs save for tachycardia at 112 bpm. He was pale and weak-looking with pale palpebral conjunctivae and circumoral pallor. Other chest and cardiac physical exam were unremarkable [7]. On abdominal exam, he had normoactive bowel sounds, predominantly tympanitic on percussion, no palpable masses appreciated and had no tenderness. Patient was found to be severely anemic at 47 g/dl with reticulocytosis and peripheral blood smear showed hypochromic, microcytic cells with normal leukocytes and no blast cells seen. Fecal occult blood test was positive. Patient was initially managed as a case of Upper Gastrointestinal Bleeding probably secondary to peptic ulcer disease [8]. Chest radiograph done showed cannon ball lesions (**Figure 1**).



Figure 1: Chest Xray of the patient showing cannon ball lesions.

He underwent multiple blood transfusions for correction of anemia. He underwent esophagoduodenoscopy which revealed non-fungating mass almost obstructing the entire esophageal lumen located at the distal 3rd of the esophagus (**Figure 2**). Since the mass was almost obstructing the lumen, the scope cannot be inserted anymore and therefore the gastroesophageal junction up to the duodenum were not visualized. Surgical pathology report showed moderately differentiated esophageal adenocarcinoma [9]. Patient underwent metastatic work-up through chest and whole abdominal CT scan with contrast which showed multiple pulmonary and hepatic lesions which were likely metastatic and gastric wall thickening likely neoplastic.

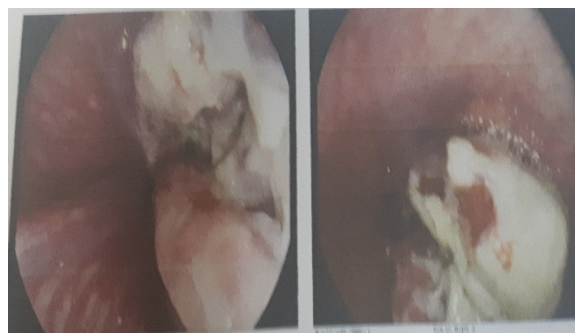


Figure 2. EGD of patient showing mass completely obstructing esophageal lumen.

The esophageal carcinoma of this patient was aggressive considering the rapidity of progression of symptoms and in a month's time was already at an advanced stage due to the presence of metastatic lesions in the hepatic and lung parenchyma.

He was then managed as a case of Esophageal Adenocarcinoma Stage IV. Due to the advanced stage of the patient at presentation, the main goals of treatment were supportive in nature. Patient was also advised palliative chemotherapy once anemia was corrected and infection was treated. Despite multiple blood transfusions, the patient continued to suffer from recurrent severe anemia.

A percutaneous gastrostomy tube was also inserted to facilitate feeding by bypassing the esophageal mass and parenteral nutrition was started [10].

However, the patient's weight continued to deteriorate. He also suffered from recurrent bouts of hospital acquired pneumonia despite culture-guided antibiotic therapy aggravated by the worsening of pulmonary function due to metastatic lung lesions.

After a month of admission, he was eventually intubated due to desaturation and respiratory distress and was transferred to the intensive care unit. However, after less than two months after admission, he succumbed to Acute Pulmonary Thromboembolism.

Discussion

Esophageal Cancer most often occurs after age 50. However there are reported cases of Esophageal Cancer occurring among the much younger population (<50 years old) and is associated with more severe disease [11].

Esophageal adenocarcinoma is found to be rare in individuals younger than 30 years old in both low and high incidence areas. The figure below (**Figure 3**) is from a hospital based-study in Sudan which aimed to evaluate the patterns of esophageal cancer age distribution, the peak age of which is between the 60-69 years of age then decreasing at older ages.

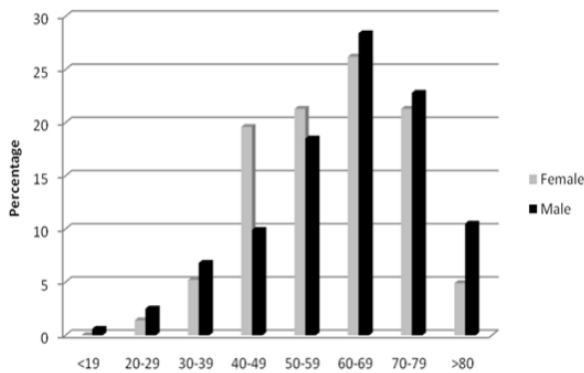


Figure 3: Age Distribution of Esophageal Cancer Patients (N=448) who Visited the National Cancer Institute at the University of Gezira, in Gezira State, Sudan, in 1999-2012, by Sex

Nagla Gasmelseed et al, Asian Pac J Cancer Prev, 16 (15), 6481-6490.

A SEER analysis of esophageal cancer patients under 50 years old conducted by Jianxing He et al included a total of 16,544 patients who met the entry criteria of the study. This study showed that cases of esophageal cancer occurring in patients less than 40 years old comprised only 1% of the study population (**Figure 4**).

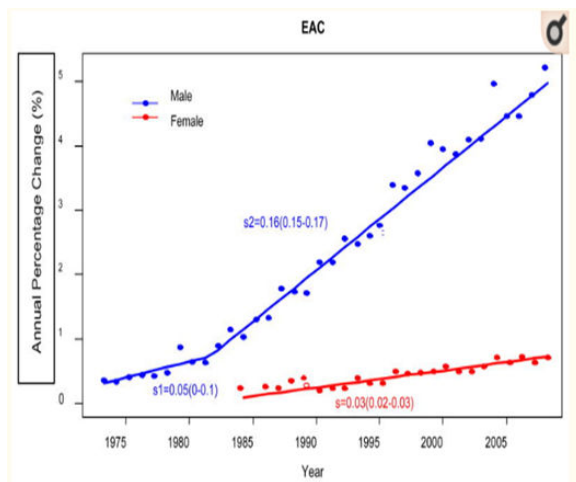


Figure 4: Age distribution of 16,544 esophageal cancer patients included in the SEER analysis

The study also showed male preponderance in the young population (less than 50 years old) as well as involvement of the lower esophagus. Esophageal adenocarcinoma was found to be more prevalent among the young age group and a greater proportion of Stage III and Stage IV disease on presentation. The study further indicated independent predictors of poor survival associated with Esophageal Adenocarcinoma in the younger population include African-American race, Stage III or IV disease and absence of surgical or radiation therapy done.

Results from the Surveillance, Epidemiology and End Results (SEER) Registry from 1973 to 2008 reported by Mathieu et al showed disparity between sexes, with the disease being more prevalent among males which may suggest that hormonal factors may play a role in the sex disparity. This study also showed that male patients have rapidly increasing rates of

esophageal adenocarcinoma [12]. On the other hand, females tend to have a slowly increasing rates particularly for those above 50 years old. This suggests that hormonal factors may play a role and that estrogen may probably confer protective advantage (**Figure 5**).

The study revealed that regardless of age every male birth cohorts had rapidly increasing rates of esophageal adenocarcinoma; whereas female birth cohorts also had more slowly increasing rates for females.

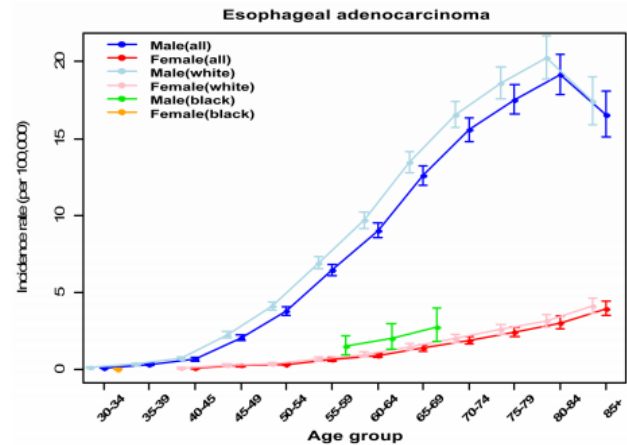


Figure 5: Esophageal Adeno Carcinoma (EAC) Annual Percentage Change (APC) versus year by sex.

The study also showed that disparity among age groups across age groups also occurred (**Figure 6**). This showed that there is a gradual increase in cases among females once they reach 50 years of age and above. It also showed that among age groups, esophageal adenocarcinoma is predominant among middle adulthood age group and there is noted rare occurrence among individuals younger than 40 years of age.

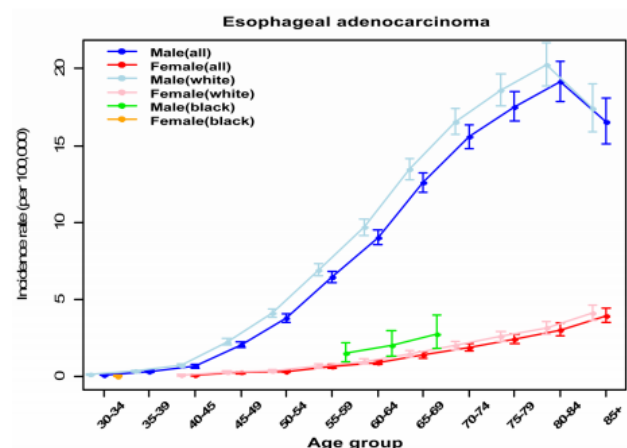


Figure 6: Incidence rates (per 100,000) of esophageal adenocarcinoma listed across age groups by sex.

In developed countries common risk factors associated with Esophageal Cancer are smoking tobacco and drinking alcoholic beverages. However, in this study, it was shown that only a minority of patients reported tobacco and alcoholic beverage consumption which is similar with studies done on other

developing areas such as high risk esophageal squamous cell carcinoma areas in China and Iran. However, almost 80% of patients in the study reported a family history of cancer, 43% of which with a specific family history of Esophageal cancer. Dysphagia is the most common presenting symptom of esophageal cancer which indicates a locally advanced disease and tumor invasion to the esophageal musculature.

A single-center retrospective study by Sawas et al compared mean survival times across three age groups, young age (<50 years old), middle age (51-70 years old) and old age (>70 years old), showed that higher proportion of individuals belonging to the young age group presented with more advanced stage of esophageal cancer (Stage III and Stage IV) upon presentation and shorter survival time. Survival times are shorter among young age group due to a more biologically aggressive disease.

Esophageal Cancer has poor survival rate regardless of the histologic type due primarily to the presentation of late stage at diagnosis.⁸ Poor survival in esophageal cancer can be attributed to advanced stage upon diagnosis since most tumors are asymptomatic and go undetected until they extend beyond the esophageal wall. Since the esophagus is a distensible organ, most patients do not complain of dysphagia or other symptoms until significant obstruction of the lumen takes place. During this time, the tumor has already invaded the esophageal wall and/or already metastasized.⁹

Bowrey et al reviewed the survival outcomes of young patients diagnosed with esophageal carcinoma (<50 years old). The median survival in the study was 7 months and the overall 1-year, 2-year and 5-year survival were 34%, 20% and 8%, respectively. Among different factors analysed, only surgical resection and UICC stage influence survival outcomes. The median survival of patients with stage III disease was at 10 months while stage IV disease was at 5 months. Results of this study revealed that survival outcomes of young patients with esophageal carcinoma is highly dependent on the clinicopathologic staging at the time of diagnosis.

Preoperative chemotherapy is the standard treatment for patients with stage II/III esophageal carcinoma while neoadjuvant chemotherapy or neoadjuvant chemoradiotherapy can be regarded for patients with locally advanced esophageal carcinoma. The advantage of this is the potential for tumor downstaging prior to surgery. Chemotherapy is the current standard treatment for metastatic or recurrent esophageal carcinoma. Survival outcomes can be influenced by a multitude of factors. Patients' survival outcomes can be compromised by their nutritional status either post-operatively or post-chemotherapy or radiotherapy. Venous thromboembolism which is the second leading cause of death in patients with cancer. Measures in preventing venous thromboembolism are important in any cancer type. Prophylaxis with low molecular weight heparin is recommended in patients with cancer undergoing laparoscopic surgery as well as laparotomy.

Perception of esophageal cancer as a rare disease in the young often result to lower clinical suspicion of a more severe disease even in the presence of alarm symptoms and therefore may lead to a delayed diagnosis and subsequently more

advanced disease at the time of presentation. Since stage of disease upon diagnosis is the most important determinant of overall survival, esophageal cancer must be considered as differential diagnosis in symptomatic patients with high risk histories.

Conclusion

Esophageal Adenocarcinoma is a disease with poor survival outcomes particularly if detected at an advanced stage. It is relatively rare below 30 years of age and a locally and biologically aggressive disease among the younger age group may account for poor survival outcomes. Survival outcomes are likewise poor for metastatic disease which underscores the importance of early diagnosis for these patients. It is essential that individuals presenting with risk factors such as recurrent episodes of Gastroesophageal Reflux Disease and family history of Esophageal Cancer must be promptly evaluated for its presence. Reduction in mortality of patients with esophageal cancer necessitates development of strategies or screening tools for asymptomatic high risk individuals so that esophageal cancer may be detected at an earlier, more curable stage.

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