

A Study of 415 Cases of Esophageal Carcinoma in Northwest of Iran

S Parvin*, M.D, S Firouz* M.D

*Radiotherapy Department, Tabriz University of Medical Sciences,**Internal Department of Islamic Azad University of Tabriz

Summary

Background and Objective: Considering the serious and fatal nature of esophageal carcinoma and its prevalence in the population on the banks of Caspian sea and northern region (Azerbaijan, Khorassan, Gilan, Mazandaran, Golestan and Kurdistan) along with the importance of its early diagnosis in the initial stage in order to increase the survival period of the patient, we aimed to proceed in regard to these factual observations so that this study should be an incentive and beginning of our future perfect study.

Materials and Methods: In a prospective study over a period of five years (from year 1994 to 1999), a total of 415 pathologically documented esophageal carcinoma out of those 33000 referred cases those with clinical signs and symptoms of esophageal cancer were enrolled in this study. Main complain of patients included (Dysphagia, odynophagia retrosternal pain with unknown origin, anorexia, weight loss, and anemia with undetermined etiology) in one of the treatment center. Age of these patients ranged from 20 to 80 years old, with mean age of 60 years and stable variables were selected from the chart of the patients. The study was accomplished with serial radiography and Endoscopy. Biopsy specimens collected during Endoscopy were sent for histological examination and staging of the disease. Finally, with the confirmation of pathological report, patients were referred for the therapeutical management.

Results: Out of 415 patients with distinct confirmative pathological findings, 349 (88.3 %) cases had squamous cell carcinoma while, 46 (11.7 %) of them were having adenocarcinoma. Among these patients, 214 were males and 201 females. The male to female ratio was almost equal.

Conclusion: This study highlights the type of esophageal cancer along with the sex distribution and its diagnostic approaches. Squamous cell carcinoma was mainly observed among the patients studied and there was not significant difference between its involvement among males and females. After the diagnosis, 5 years survival rate will depend upon its early diagnosis, accurate staging of the disease and management of the patient with appropriate therapy.

Key Words: Esophageal cancer, Squamous cell carcinoma, Adenocarcinoma, Imaging

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Corresponding Author: Shakouri Parvin, Radiotherapy Department, Tabriz University of Medical Sciences, Tabriz, Iran

Introduction

The esophageal cancer is one of the most severe and fatal malignant diseases. Even though developed countries are well- equipped with the diverse diagnostic and therapeutic tools, the mortality rate is still at a high level. It is estimated that around 12,300 people were affected by this cancer in USA in 1996 and 11,200 patients died from the disease¹. This malignant tumour is more widely distributed geographically as compared to other tumors . Approximately 4% of mortality caused by the cancers is due to this carcinoma in the USA.. Predominantly males are more affected in comparison to females (3:1 ratio)². Some parts of Iran, particularly in the northern region, which are included in the Asian belt of esophageal cancer, are in reality at the top of the prevalence pyramid of this disease in the world (with the difference of 500 folds). The prevalence rate varies from 7 per 100,000 to 171 per 100,000³. Early diagnosis of the disease has importance regarding the survival of patients and is favored with the particular importance to its diagnostic approaches.

The effective treatment of this disease is related to its staging. Duration of a five-year survival rate has been reported in 90% cases from China, in a stage when their disease was limited to mucosa and submucosa without involvement of the lymphatic glands. In one of the reports, only 30-40% of patients with Squamous Cell Carcinoma (SCC) were elected for surgery, while the others were unapproved and the most common cause of not being operated was invasion of SCC to trachea and mediastinum. The five-year survival rate was 25% in this group².

Materials and Methods

In a five year prospective study (from year 1994 to 1999), 415 patients of esophageal cancer aged 20-80 years (with mean age of 60 years) were studied in Tabriz, the capital city in north - west of Iran. These included 214 (52%) males and 201 (48%) femals. The main variables included patient's chief complaint, duration of pain, smoking habit, affliction to alcohol, place of residence,

economical and social status along with histologic type and location of tumor.

The study was initiated after completion of case document of each patient with clinical, radiological findings along with endoscopical observations. Biopsies taken during Endoscopy were sent for pathological examination. These patients were finally introduced to the therapeutic measures depending upon their pathological report and staging of the disease.

Results

Three hundred and forty nine (349) patients (88.3%) were found to have SCC and only 26(11.7%) had adenocarcinoma. Two hundred sixty-six (266) patients of the total cases consisted of rural population, while 149 were urban ones. 151 of patients were smokers but consumption of alcohol was not reported in any case. This history may be hidden because of governmental regulations. The tumor location of involvement of cancer in esophagus was as follows: upper third in 34(8%) cases (31 cases were of SCC), middle third in 231 (56%) cases (206 patients were of SCC) and distal third in 150 (36%) cases (133 patients had SCC).

The patients were referred with clinical signs and symptoms of Dysphagia (91.5%), epi-gastric pain (13.2%), vomiting (9.8%), loss of appetite (8.4%), pyrosis (3.2%), loss of weight (1.9%)and odynophagia (0.9%). The time interval between the beginning of the symptoms and referral to the hospital varied from one month to 3 years with mean interval of time being 5 months. Cancer had involved mostly middle third of esophagus in most of the patients and most of the lesions were more than 4cm in length at the time of diagnosis On Endoscopy, most (252 cases) of these patients had polyploid type of tumors, out of which 222 patients had SCC and 30 adenocarcinoma and, 100 cases had ulcerative findings, out of which 89 and 11 patients were reported to have SCC and adenocarcinoma respectively. About 30-40% of the patients were not amenable to surgery because of the invasion of cancer to trachea and mediastinum.

Discussion

Esophageal cancer is one of the most fatal cancers with unknown causative factors. Epidemiological studies reveals its strong relationship with intake of hot liquid and products, consumption of tobacco, alcohol, nitrozamines, aflatoxins, candidial infections, low levels of riboflavin and vitamin A². The sex distribution indicates that males are usually more affected by this disease than females, the ratio being 3: 1. In countries like France this ratio is quite high, about 20:1 while, studies from Finland shows equal distribution of disease, among males and females (1:1).

The treatment strategy of this disease depends on its stage. Ninety percent five year survivable has been reported in a study from China in the patients in which disease was limited to the mucosal layers and under mucosa without the involvement of lymphatic glands⁴. The best methods to study the modifications of mucosal layer in the elementary stage are barium meal and double contrast radiographical techniques^{5,6}. Main manifestations in the beginning of infiltrative stage are plain plaques, often accompanied with central injury in the length of wall in double contrast study. In case

of infiltration in the more developed stage, disorder is observed in the lumen of esophagus, indicating squamous cell destruction.

Gradually involvement of periesophageal area causes shrinkage and stricture and widening of proximal part above the strictures^{7,4}. In the barium studies, the more developed carcinoma (SCC) is observed in the form of narrowing disorder, being injured and nodular shapes in esophageal lumen. In advanced cases, it will form an angle between the involved and uninvolved area, mucosal disorder results in filling defect and obstructions and narrowing⁸. Sometimes tumor imitates the form of achalasia in the distal part of the esophagus⁵ with the development of complication of tracheo- esophageal fistula which causes aspiration of food particles to enter into the respiratory tree and in the chest X- ray, its seen as aspirative pneumonia or mediastinal mass⁹. In our study, two such a cases were observed as well.

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