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## Case Report

### Laryngeal cancer in Sudanese women Three case reports with brief literature review Sharfi Abdelgadir Omer Ahmed\*

#### Abstract

**Background:** Laryngeal cancer is rare in women than in men. It is the neoplasm with the largest male to female ratio in most populations

**Objective:** To report the first three cases of laryngeal cancer in three Sudanese non smoker women.

**Methods:** I report three non-smokers, married Sudanese women 32,45 and 60 years old suffering of laryngeal cancer as rare cases especially in Sudan, which were treated at Aldoha ENT specialized Hospital in Khartoum, Sudan between 2010-2012. Videolaryngoscopy, plain x-ray, CT – scan of the neck and thorax and Microlaryngoscopy studies were done to all patients. Relevant literature was reviewed.

**Results:** the larynx was examined with microlaryngoscopy for all patients. laryngeal masses were found in the vocal cords. Biopsies were taken and sent to the histopathology unit which it confirmed the diagnoses.

**Conclusion:** Laryngeal cancer in women are in Sudan particularly in non smokers females. Further research is needed to determine its prevalence, predisposing and associated factors other than smoking.

**Key words:** Laryngeal cancer, women.

Laryngeal cancer is rare in women than in men. It is the neoplasm with the largest male to female ratio in most populations. Thus, inadequate data are available on women<sup>1</sup>. The male to female sex ratio for laryngeal cancer is about 10–30: 1 in Europe<sup>(1)</sup>. Trends over time in mortality were unremarkable for women as most published data reported in men<sup>2</sup>.

Among the few investigations providing data on women was a case-control study from the United States, including 56 females with the relative risk of 28.2 for smokers of >20 cigarettes/day compared with nonsmokers<sup>3</sup>.

Two investigations from Italy, based on 19 female cases, showed strong associations with alcohol and tobacco consumption. The relative risk was 2.6 for heavy alcohol drinkers, as compared with light drinkers, and 24 for cigarette smokers. A cohort study on Swedish alcoholics found a standardized laryngeal cancer incidence ratio of 8.9 for

alcoholic women<sup>4-6</sup>.

Variations in laryngeal cancer incidence rates have been generally related to changes in tobacco and alcohol consumption. However, other relevant factors may be present among women<sup>1,7-10</sup>. Among these, diet may have a role in laryngeal carcinogenesis. Diet poor in fruits and fresh vegetables is associated with an increased laryngeal cancer risk<sup>5,11-15</sup>.

Scanty information, however, is available on any potential role of female hormones on laryngeal carcinogenesis<sup>16,17</sup>.

No data is found up to date related to African and Arab women. Therefore, I reported the first dataset for three cases from Sudan.

#### First Case report:

A female 32 years of age was complaining of a hoarseness of voice for 1 year. She has no history of smoking cigarette or any other type of tobacco.

She was referred by a general practitioner to the tertiary hospital (Aldoha ENT Hospital). In the outpatient department (OPD) videolaryngoscopy showed, an irregular mass in the left vocal cords measuring about 0.5 - 1.0 cm. There was no palpable cervical lymph

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node. Plain x-ray of the neck and thorax were within normal.

Microlaryngoscopy was done under general anesthesia it showed: Ulcerative mass on the left vocal cord from which biopsies were taken for histopathological examination.

The histopathology reported areas of inflammatory infiltrate as well as islets of neoplastic epithelium and hyperchromatism, thus establishing the diagnosis as laryngeal squamous cell carcinoma. The tumour-node-metastasis system (TNM) staging system proved that she has stage I disease (T1N0M0) based on the laryngeal cancer TNM classification criteria of the American Joint Committee for Cancer Staging (UICC/AJC).

The patient was referred to an oncological centre for chemo-radiotherapy. She was followed up on regular visits and she showed complete remission with an excellent clinical response.

### Second Case:

A female 45 year old complained of voice change for 19 month which progressed gradually. In the last two months prior to her presentation, she suffered of recurrent attacks of choking, productive cough but no dysphagia. On examination rigid telescope with 70 degree was used to inspect the larynx. It showed a mass in the right vocal cord and anterior commissure with fixation of the vocal cord. No cervical lymph node enlargement was palpated. Radiological examination did not reveal any signs of metastasis or bone destruction. Microlaryngoscopy was done under general anesthesia it showed: Ulcerative, fungating mass with irregular borders elevated edges and a necrotic floor on the right fixed vocal cord and anterior commissure about 5 cm in diameter. Biopsy were taken and sent for histopathological examination. Tracheostomy was performed and size 8.5 F portex cuffed tube was inserted.

The histopathological findings confirmed the diagnosis of laryngeal squamous cell carcinoma.

The TNM staging system revealed was stage III disease (T3N0M0).

The patient was referred to the oncological centre for chemo- radiotherapy. She was refused surgical treatment. She was followed up till her death some months later.

### Third Case:

A female of 60 year presented with change of voice for five years. She diagnosed to have a vocal cord nodule in 2007. In 2008 she was still complaining of hoarse voice which was worsening gradually. Direct laryngoscopy (DL) was done under general anesthesia and biopsy was taken from the larynx. Histopathology confirmed the diagnosis as laryngeal carcinoma. The patient at that time was stage I (T1N0M0) based on the laryngeal cancer TNM classification criteria of the UICC/AJC (American Joint Committee for Cancer Staging). The patient was sent to the Radio-isotope centre where she received radiotherapy and chemotherapy and her condition improved.

In 2012 the patient again suffered from voice change, shortness of breath. On examination: rigid telescope with 70 degree lens was used to examine the larynx. It identified a mass in the supraglottic area, with less than 3 cm secondary cervical lymph node enlargement. The radiological examination did not reveal any signs of metastasis or bone destruction and she planned for direct laryngoscopy (DL) under general anesthesia.

Patient was known diabetic and hypertensive. DL was done under general anesthesia and it showed a supraglottic and glottic fungating mass 5-7 cm with fixation of the left vocal cord in which biopsy was taken for histopathology. There was narrowing in the subglottic area. Urgent tracheostomy was done and size eight portex cuffed tube. The histopathological findings confirmed the diagnosis of laryngeal squamous cell carcinoma.

The TNM (tumour-node-metastasis system) staging system revealed was stage III disease (T3N1M0) based on the laryngeal cancer TNM classification criteria of the UICC/AJC (American Joint Committee for Cancer Staging).

The patient was planned for surgery and to be referred to an oncological centre for

treatment, which include radiotherapy and chemotherapy but she refused the surgical treatment.

### Discussion:

There are no publications on laryngeal cancer in Sudanese women, and no confirms important risk factors for women in Sudan as for men. In terms of relative (although not of absolute) risk, tobacco appears to have a greater role in women than in men<sup>18</sup>.

The present results from Swedish also confirm that alcohol drinking has an important role in laryngeal carcinogenesis in women, but a significant association was apparent for heavy alcohol drinkers only<sup>4-6, 19, 20</sup>. Alcohol drinking is therefore a much weaker risk factor for laryngeal cancer than cigarette smoking in Italian women. This is in agreement with the findings of studies conducted in men and women in the United States, Korea and Turkey<sup>21-24</sup>.

With reference to diet, there was a study that provided additional evidence that vegetables, olive oil, and perhaps fresh fruit have a favorable effect on laryngeal cancer<sup>11, 19, 25-28</sup>.

Study was done about several reproductive and hormonal factors, none of which was, however, strongly related to laryngeal cancer risk<sup>16,17</sup>. However, given the rarity of the disease in women, the study had a relatively low power to detect associations with these factors.

In terms of population attributable risk, tobacco smoking accounted for 78% of laryngeal cancer in women, alcohol drinking for 34%, and the combination of the two factors together account for 82%. Low vegetable intake was estimated as a risk in 30% and for the combination of alcohol, tobacco, and low vegetables diet were estimated as a risk in 85% of the cases of laryngeal cancer<sup>28,29</sup>.

The question is to identify the predisposing factors of laryngeal carcinomas in Sudanese women.

To the best of my knowledge there are no previous reports for such cases in Sudan in contradistinction to other countries.

### Conclusion:

we need to consider other habits in Sudan like the types of foods, smoking used for other purposes (Dokhan) and some materials used for cleaning (clorex, etc) .

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