Human Immunodeficiency Virus (HIV) Positive Case with Squamous Cell Larynx Cancer: Difficulties in the Choice of Treatment

Case Report

Özlem Ünsal, Bilge Türk, Meltem Akpınar, Mustafa Bağlı, Berna Uslu Coşkun
Clinic of Otorhinolaryngology, Şişli Etfal Training and Research Hospital, İstanbul, Turkey

Abstract

Squamous cell carcinoma of the larynx is rarely encountered in HIV (human immunodeficiency virus)-positive patients compared with HIV-associated malignancies. Standard protocols are absent for the management of laryngeal carcinoma in HIV-positive patients. HIV infection-associated immune suppression increases the mortality and morbidity of laryngeal carcinoma treatment. In the management of laryngeal carcinoma in HIV-positive patients, beside the clinical staging, the detection of CD4+ cell count is important. Regular antiretroviral treatment may have favorable effects in the management of laryngeal carcinoma. The treatment modality in the presented HIV-positive case with the diagnosis of laryngeal cancer was determined with a multidisciplinary approach.

Keywords: Laryngeal cancer, HIV, treatment, retrovirus, immunodeficiency

Introduction

Laryngeal squamous cell carcinoma (SCC) is rarely encountered in human immunodeficiency virus (HIV)-positive patients compared to other HIV-related malignancies such as Kaposi's sarcoma and non-Hodgkin's lymphoma (1, 2). Laryngeal SCC is observed at a younger age and in a more advanced stage, and it progresses more aggressively (3). There are few cases/case series in the literature. HIV infection distinctively affects the mortality and morbidity rates of the treatment that will be used for laryngeal SCC. Therefore, the treatment is complicated and risky and requires careful planning.

Case Report

A 56-year-old female patient was admitted due to hoarseness that was present for 3 months. Her history included smoking 10 packs per year. The patient was HIV positive for 10 years, and she underwent regular antiretroviral treatments (ARTs). In her endoscopic examination, a tumoral mass involving her left vocal cord, left arytenoid, and anterior commissure was observed. The vocal cords were mobile. Lymphadenopathy was not observed in the neck. Similar results to those obtained in her rigid endoscopy were observed in the patient's direct laryngoscopy, and the biopsy result indicated invasive SCC. The patient was clinically and radiologically staged as kT1N0M0. The CD4+ cell level was 300 cells/mm^3 (normal level: 600–1500 cells/mm^3). Treatment options and possible complications were explained to the patient. The patient rejected surgical treatment and was directed to radiation oncology. Seven months later, she was admitted due to acute respiratory stress, and urgent tracheotomy was performed. Her left hemilarynx was fixed in the endoscopic examination. Vegetating tumoral masses were present in the left ventricular band and both vocal cords. Narrowing to a gap of 2 mm was observed in the rima glottidis. The patient received single-fraction radiotherapy, and she did not continue her subsequent treatment. She did not regularly use the triple ART comprising darunavir 2×600 mg, ritonavir 2×100 mg, and tenofovir/emtricitabine 1×1 that was started in department of infectious diseases. On neck tomography, a massive lesion that nearly totally obstructed the laryngeal lesion at the glottic and subglottic levels and caused irregularities in the left half of the cricoid cartilage and in the left ala of the thyroid cartilage was observed; this lesion did not display extralaryngeal extension. Regional lymph node metastasis and distant metastasis were not detected in the neck on positron emission tomography/computed tomography (General Electric Discovery 600, WI, USA) (T3N0M0). Her CD4+ cell count had decreased to 34 cells/mm^3. The patient was presented to tumor board in our hospital. In the board meeting, options of total laryngectomy+bilateral neck dissection, total laryngectomy+cervical radiotherapy, and chemoradiotherapy were discussed. However, due to her very low CD4+ cell count, it was concluded that the patient was unsuitable for surgery and chemotherapy and that she must receive radiotherapy and ART. The patient was discharged after being directed to radiation oncology and infectious diseases. The optimum dose could not be completed due to severe mucositis (WHO grade 3), with oral and laryngeal candidiasis (Kodsi's grade 3) being observed during

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Address for Correspondence: Özlem Ünsal
E-mail: ozlemunsal@hotmail.com
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radiotherapy. Even after one year and five months of diagnosis, a cure could not be achieved for the laryngeal SCC. The patient continues to receive ART. Her CD4+ count is still <200 cells/mm^3.

Discussion

Even though laryngeal SCC is rarely encountered in HIV-positive patients, there is a 2-fold and 10.6-fold increased risk in males and females, respectively, when compared with the general population (4).

Determining the right treatment in HIV-positive laryngeal SCC patients is difficult. A low CD4+ cell count can prevent chemotherapeutic administration, increase surgical or radiotherapeutic complication rates, and reduce survival rates. The risk of postsurgical wound infection is high (5). It can cause severe mucositis (6). In particular, patients with a CD4+ cell count of <200 cells/mm^3 have a risk of opportunistic infection. As a result, chemotherapy is not recommended to patients with a CD4+ cell count of <200 cells/mm^3 (7). Further, chemotherapy increases the risk of acute toxicity (8). However, radiotherapy can be performed in patients with good clinical condition despite their low CD4+ cell counts (7). Therefore, TNM staging and CD4+ cell counts of patients are important in planning treatment (3).

Nodal staging is difficult due to the frequency of follicular hyperplasia-related lymphadenopathies. Clinical overstaging has been reported to occur in 33–36% of SCC patients who are infected with HIV (9, 10). In 186 HIV-positive head and neck SCC patients who underwent therapeutic and elective neck dissection, the sensitivity has been reported to be 80.1%, while the specificity has been reported to 52.2% for clinical nodal staging. In N1, N2b, and N2c cases, the positive predictive values are 53.2%, 65.8%, and 68.2% respectively. The occult metastasis rate is 32%. High false-positive rates in N1, N2b, and N2c necks necessitate a change in the treatment strategy (11). Further studies are needed to determine the approach toward the neck. Histopathological and clinical staging could not be compared in our case report, given that surgical treatment could not be performed.

Conservative or aggressive treatment options must be determined by considering the high incidence of nodal staging and complication risk of treatments (9).

Even though ART has been reported to lower the incidence of neoplasms such as HIV-related Kaposi's sarcoma, its role in HIV-positive SCC patients is not defined very well. Furthermore, neoplasms such as HIV-unrelated laryngeal SCC have been reported not to be directly related to immunosuppression and low CD4+ cell counts. However, it has been pointed out that HIV-positive SCC patients have longer survival times under ART. Therefore, the prophylactic use of ART is recommended in patients who do not have low CD4+ cell counts as well (12).

Additionally, it is important that HIV-positive laryngeal SCC patients are protected from hospital infections and that psychiatrists and dieticians are consulted (3).

Conclusion

In HIV-positive laryngeal SCC patients, the treatment choice is equally affected by the CD4+ cell count as well as clinical staging. A low CD4+ cell count can increase the mortality and morbidity rates of treatment. Therefore, evaluating patients with ear, nose, and throat, infectious diseases, and radiation oncology physicians and conjointly planning a treatment would be the best approach.

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