

Case report

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Laryngeal Involvement of Rhabdomyosarcoma in an Adult

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Abstract

Background: Although initial presentation of sarcomas in the head and neck region is relatively common, involvements of the larynx by rhabdomyosarcoma either primary or metastatic have been reported rarely.

Case report: A case of rhabdomyosarcoma in the right thigh, which involved laryngeal structures three years after the diagnosis, is presented.

Conclusions: The laryngeal involvement by primary and metastatic rhabdosarcomas is very rare, however when it occurs it can result in life treating upper airway obstruction. After emergency intervention, radiotherapy and / or chemotherapy must be undertaken for long-term benefit and surgery may be helpful only in selected cases.

Introduction

Laryngeal cancer is an important cause of morbidity and mortality in smokers accounting for 25% of the head and neck cancers [1]. Over 95 percent of the cancers of the larynx are of squamous histology. Non-squamous histology including sarcomas and salivary gland tumors are quite rare. Primary involvement of the larynx by mesenchymal tumors has been reported as case reports [2,3]. Metastasis to the larynx from a neoplasia elsewhere is even rare, making 0.09 % to 0.4 % of total [4]. Until present, about 150 metastatic cancers of larynx of various histology have been reported. Here, we report a case of rhabdomyosarcoma in the right thigh, which involved laryngeal structures three years after the diagnosis.

Case Report

A 45 year-old man presented with a complaint of a lump in the inner side of the right thigh for the past 2 months. Excision biopsy was performed. Histologically the tumor was composed of sheets of malignant round and spindled cells in a variably myxoid stroma. Some cells had abundant eosinophilic cytoplasm. Atypical mitotic figures were seen (Figure 1). Immunohistochemical stains revealed that the tumor cells were positive for vimentin, desmin and myod1. With a diagnosis of rhabdomyosarcoma combination chemotherapy with ifosfamide (2500 mg/m² for 3 days, together with mesna at the same doses) and adriamycine (60 mg/m² on day 1) was given for six cycles as adjuvant treatment. Five months following completion of chemotherapy, a hemipelvectomy was performed upon local recurrence of the tumor in the previous location. The pathological examination was consistent with



Figure 1
Photomicrograph showing sheets of round and spindled cells (H&E ×230)

rhabdomyosarcoma. The DICE (dexamethasone, ifosfamide, carboplatin and etoposide) combination adjuvant chemotherapy was started. However, it had to be stopped after the 3rd cycle due to elevation of aminotransferases as high as 5 times the upper limit of normal ranges. After almost a year of uneventful period, a 3 cm metastatic nodule in the superior segment of left lower lobe was discovered and metastatectomy was performed. The histopathological examination was consistent with malignant mesenchymal tumor. He had received a total 4 courses of ifosfamide at the dose of a total of 14 g/m² in 7 days with hematopoietic growth factor support every month. Four months after the last course he began to experience hoarseness and mild dyspnea. Physical examination showed multiple polypoid masses in the sub-glottic region. Magnetic resonance images of head and neck were showed the laryngeal masses (Figure 2). Biopsy revealed rhabdomyosarcoma. As the curative surgery was not feasible, palliative radiotherapy was given to relieve his symptoms. He experienced only a mild throat pain during radiotherapy. However, 2 months later he noticed a mass of an almond size in his mouth. On inspection of oral cavity, a 3 cm mass just between left tonsil and tongue, covered with a necrotic pseudomembrane, was discovered. Excisional biopsy showed rhabdomyosarcoma. CT of head and region disclosed several other metastatic lesions. He was re-admitted to hospital 7 days after following his last discharge with acute severe dyspnea and wheezing. His complaints responded well to dexamethasone 16 mg/day. Palliative chemotherapy with VAC (vincristine, actinomycine, cyclophosphamide) every week was started. After the 1st cycle, the mass in the floor of mouth disappeared.



Figure 2
Figure 2a and 2b. Magnetic resonance images of head and neck showing the laryngeal mass

Discussion

Rhabdomyosarcoma is a tumor of striated muscle. It has mainly two subtypes: Embryonal and alveolar. While the loss of heterozygosity of chromosome 11p15 identifies the first one, latter is characterized by the translocation t(2;13) (q35;q14) [5]. It is the most common malignant mesenchymal tumor in children. Therefore most of the information is inspired from pediatric studies. It is quiet rare in adults. The most common site of presentation is head and neck region (35 %). Lungs, bone marrow, bones, liver and brain are among the most common sites of metastases [5]. Ifosfamide, adriamycin, etoposide, vincristine and actinomycin are among effective agents in the treatment of soft tissue sarcomas [6–9]. Survival ranges from 30% in patients with metastatic presentation to 80% in those where the disease is localized and complete resection is performed [7].

Upper airway obstruction, irrespective of the cause, is an emergency. Therefore it is a must to intervene rapidly. Corticosteroids may be beneficial by relieving accompanying edema. However immediate tracheotomy can be required and when necessary should be performed undoubtedly. After emergency intervention, palliative measures like radiotherapy and / or chemotherapy must be undertaken for long-term benefit. However surgery may be helpful only in selected cases.

Although it is difficult to make the distinction between metastatic or primary for sure, we supposed our case was a metastatic invasion rather than primary in an adult owing to previous diagnosis of rhabdomyosarcoma, similar histology and multiplicity of the tumor and rarity of primary involvement of larynx in adults [4].

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