CASE REPORT

Spindle cell carcinoma of the oral cavity

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Abstract

Spindle cell soft tissue neoplasms are rarely reported in the oral cavity and account for less than 1% of all tumors. Spindle cell carcinoma (SpCC) synonymously called sarcomatoid tumor occurs mainly in the upper aerodigestive tract. This peculiar malignant neoplasm predominantly affects males in 6-7th decades of life. SpCC is potentially aggressive with a high incidence of metastases. Its precise and early diagnosis is the key to good prognosis. We report a case of SpCC in a 50-year-old male patient with special reference to histogenesis of this entity. SpCC is an aggressive variant of squamous cell carcinoma which needs to be identified and differentiated from the other spindle cell tumors for proper treatment.

Introduction

Oral squamous cell carcinoma (SCC) has several variants such as adenosquamous carcinoma, verrucous carcinoma, basaloïd SCC, spindle cell carcinoma (SpCC), papillary SCC acantholytic SCC, and carcinoma cuniculatum. These variants have different diagnostic criteria and clinical outcome. Lane tumor is a synonym for SpCC and is an uncommon poorly differentiated type of SCC comprising up to 3% of SCC. It is also an unusual aggressive variant of SCC that frequently recurs and metastasizes. It poses a significant diagnostic challenge and hence understanding their microscopic peculiarities is essential for definitive diagnosis and treatment. The histogenesis of SpCC is still controversial in spite of several immunohistochemical, electron microscopic, and genetic studies.

Case Report

A 50-year-old male reported with pain, difficulty in mastication, and swelling involving the face on the left side. The swelling was noted by the patient 25 days back had gradually increased in size to the present extent. Extraoral examination revealed an ill-defined swelling in relation to 36 and 37 regions. The left submandibular lymph nodes were enlarged, tender, and mobile. On general examination, no abnormality was detected. No relevant medical history was noted. There was no family history of neoplasia or history of trauma. Intraoral examination revealed an inflamed, ulcerated growth with a papillary surface measuring approximately 5 cm × 4 cm in size. The lesion was tender on palpation and extended from mesial aspect of 34 to retromolar region involving gingiva and alveolobuccal complex. The patient had 31, 32, 33, 41, and 42 extracted a year ago due to mobility by a private practitioner. He smoked bidi since 20 years and consumed approximately one pack per day and occasionally consumed alcohol. A provisional diagnosis of SCC was considered, and incisional biopsy was performed. The H and E stained section showed fascicles of anaplastic spindle-shaped cells arising from the surface dysplastic epithelium. Proliferation and dropping off of the basal cells to spindle cell elements was seen at places. The tissue pattern making up the bulk of the tumor was fasciculated, containing elongated cells with elliptical and vesicular nuclei. Mitotic figures were evident at places. Few areas showed bizarre pleomorphic atypical cells. The overall histopathological features were suggestive of a SpCC. The patient was referred to an oncology center. Surgical management included segmental resection of the mandible with neck dissection.

Discussion

Spindle cell neoplasms may be benign or malignant; they are rare in the oral cavity and comprise less than 1% of all tumors in this region. SpCC most commonly occurs in 6-7th decades of life and usually affects men. It clinically presents on the alveolar
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In our case, there was no history of radiation; however, long-term consumption of smoking and alcohol was noted.

SpCC microscopically shows two distinct epithelial-derived components: A carcinomatous or SCC component and a sarcomatoid or dysplastic spindle cell component. A minor portion of the tumor mass is carcinomatous while the greatest portion of the tumor is spindle cell component and presenting in a storiform and fasciculated pattern, as also revealed in this case. The squamous component of the tumor is generally observed in the form of carcinoma in situ or invasive carcinoma while the spindle cell component can present as either pleomorphic (malignant histiocytoma-like) or spindle cell sarcoma (fibrosarcoma-like), as seen in this case.

Immunohistochemistry is used to confirm the diagnosis of SpCC, especially when the carcinomatous component is not histopathologically visible. AE1/AE3 is generally positive for the squamous areas, and 40-85% of the cases show positivity in the spindle component. The expression of mesenchymal marker is helpful to confirm the diagnosis. Vimentin and pan-actin are generally positive in the spindle cell component; S-100 protein, α-smooth muscle actin, and desmin are variably positive but completely absent in the squamous component.

Histogenesis of SpCC is still uncertain. Spindle cell component is thought to be a benign stromal reaction against SCC whereas, some advocate that metaplasia of malignant squamous cells gives rise to the spindle cells. Other suggestions include non-neoplastic histiocytes or malignant fibroblastic cells.

Choi et al. conducted several electron microscopic studies concerning the pathogenesis of SpCC. According to Leifer et al., though mesenchymal in appearance, these cells are epithelial in origin. Battifora demonstrated the presence of junctional complexes between tumor spindle cells, with or without pericellular basal lamina and cytoplasmic skeins of intermediate filaments thus postulating epithelial-mesenchymal transformation. Several features such as areas of transition of basal squamous epithelial cells to spindle forms, frequent lymphatic spread, and metastatic pathway; support this theory. The average age of SpCC is 60-70 years as that of SCC, and their concurrent occurrence is rare. Some also suggest the functional loss of genes that control epithelial differentiation, lead to the development of the spindle cell phenotype.

The treatment of choice remains radical surgery and includes neck dissection when nodes are positive. Five-year survival rate for oral lesions is 30%, and metastasis is a poor prognostic indicator with 81% mortality rate.

Conclusion

SpCC of the oral cavity is potentially aggressive which undergoes rapid metastasis. As dentists rarely come across such tumors, their early diagnosis is imperative for a better treatment and prognosis.

Figure 1: Intraoral extent of the lesion

Figure 2: Photomicrograph shows fascicles of anaplastic spindle shaped cells arising from surface dysplastic epithelium (H and E, ×10)

Figure 3: Photomicrograph shows elongated tumor cells with elliptical and vesicular nuclei (H and E, ×40)
References
