

Case Report

Oral squamous cell carcinoma with clear cell change: a rare case report

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ABSTRACT

Clear-cell variant of oral squamous cell carcinoma is an extremely rare entity. Clear-cell change can be seen in any of the neoplasms, but as pure form variant, it is difficult to find in head-and-neck SCC. We hereby present a case report of 71-year-old male who presented with a growth with erythematous patches on the lateral pharyngeal wall for the past 3 months. Histopathologic examination showed nests, islands and sheets of malignant squamous cells with vesicular nuclei and abundant clear cytoplasm. Neoplastic cells constituting majority of nests exhibited clear cell changes. Special stain was performed to identify the nature of clear cells. periodic acid Schiff-diastase (PAS-D) showed positivity in the clear cells. Immunohistochemical study using antibody for pan-cytokeratin revealed diffuse positivity in the tumor cells.

Keywords: Squamous cell carcinoma, Clear-cell variant, Oral cavity, Oral squamous cell carcinoma

INTRODUCTION

Squamous cell carcinomas account for more than 90% of the malignancies occurring in the oral cavity.¹ Clear-cell squamous cell carcinoma is a rare variant of squamous cell carcinoma, which was first described by Kuo in 1980 and till date only few cases have been reported.² A predominant variant of oral squamous cell carcinoma with clear cells is very rare, and it usually occurs as a salivary gland neoplasm or a metastatic tumor. The clear-cell appearance may be due to hydropic degeneration of the neoplastic cells which may occur due to the accumulation of intracellular fluids, mucin, glycogen or lipid.³

CASE REPORT

A 71-year-old male came to the head-and-neck outpatient department with a swelling in the lateral pharyngeal wall for the past 3 months and complained of pain which was insidious in onset. His intraoral examination revealed an exophytic growth in the lateral pharyngeal wall.

Computed tomography scan showed a heterogeneously enhancing lobulated soft-tissue density lesion measuring 50×38×35 mm in the lateral pharyngeal wall. Incisional biopsy was done and report was given as moderately differentiated SCC with clear cell change.

Microscopy showed nests and sheets of malignant squamous cells with clear cell change invading into underlying connective tissue stroma. The cells were round to polygonal with clear cytoplasm having nuclear hyperchromasia and atypia.

We performed special stains such as periodic acid–Schiff (PAS) diastase to know the nature of clearing artifact. PAS diastase showed strong positivity for the tumor cells rich in glycogen. Immunohistochemistry (IHC) of cytokeratin was further done to confirm the diagnosis of clear cell variant of oral squamous cell carcinoma. Pan-cytokeratin revealed diffuse positivity in the epithelium, dysplastic epithelial islands and clear cells in the connective tissue stroma which suggested malignancy of epithelial origin.

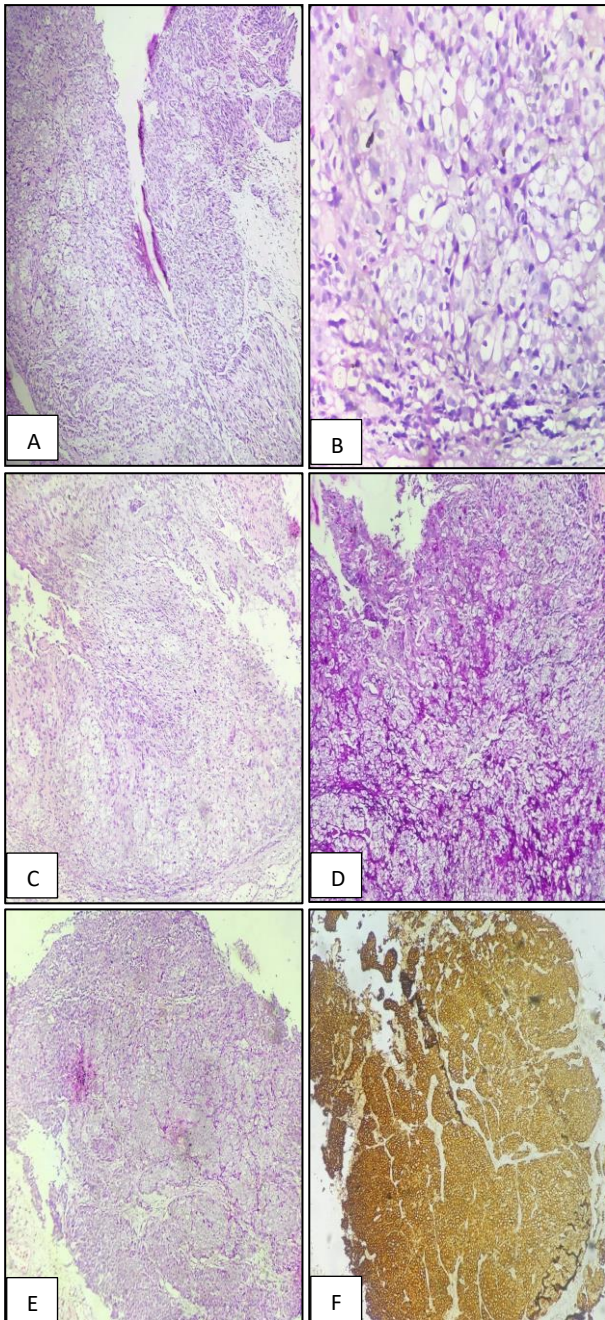


Figure (A-F): Photomicrograph showing sheets of malignant squamous cells with abundant clear cytoplasm and vesicular nuclei in the connective tissue stroma in low power view, large pleomorphic cells with hyperchromatic round eccentrically placed nuclei and clear cytoplasm in high power view. Photomicrograph of HPE showing malignant squamous cells with clear cell change, PAS diastase positive staining in the clear cells. Photomicrograph of HPE showing malignant squamous cells with clear cell change, IHC for cytokeratin showing diffuse positivity in the tumor cells.

Considering histopathological, histochemical and IHC examination, a final diagnosis of clear-cell variant of SCC was established.

DISCUSSION

The origin of clear cells is either epithelial or mesenchymal. The cells have a pale or clear cytoplasm with a distinct nucleus which is centrally placed. The clearing of cytoplasm may be due to artifactual changes, accumulation of water, glycogen, mucopolysaccharides, lipids, mucin, intermediate filaments and immature zymogen granules, phagocytosed foreign-body material or hydropic degeneration of the organelles.^{4,5} It is also likely that clear cell differentiation may result from different clonal evolution occurring within the tumor.⁶ The possible differential diagnosis for clear-cell neoplasms of the oral cavity region include salivary gland neoplasms like mucoepidermoid carcinoma, acinic cell carcinoma, epithelial-myoepithelial carcinoma, clear-cell myoepithelial carcinoma, and hyalinizing clear-cell carcinoma and odontogenic neoplasms like clear-cell odontogenic carcinoma and clear odontogenic ghost-cell tumor. Also, concomitant rare occurrence of SCC and melanoma with clear-cell changes may be considered.⁷

Special staining procedures such as PAS with or without diastase can rule out the various origins of clear cells such as adnexal, and salivary gland neoplasms. Mucicarmin and alcian blue are used for mucin, and Sudan black for lipid. Also, various Immunohistochemical markers such as cytokeratin type 8, 18, 19 for epithelial origin, smooth muscle actin (SMA) and S100 for myoepithelial origin, S100 for melanocytic tumor are required to confirm the origin of clear cells in the clear cell lesions.⁸

CONCLUSION

Squamous cell carcinoma with clear cell changes is a very rare entity which has to be diagnosed with thorough knowledge of histopathological features and use of histochemical and immunohistochemistry markers. The biological nature and clinical course of head and neck clear-cell SCC need to be established because clinical prognosis of these carcinomas may differ from the usual type of SCC. Further documentation of such cases will help us better understand the etiology, clinical behavior, prognosis and treatment.

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