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Histopathological variants of oral squamous cell carcinoma-institutional case reports

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INTRODUCTION

Squamous cell carcinoma is by far the most important and the most common malignant mucosal neoplasm of the head and neck accounting for over 90% of all malignancies. Conventional oral squamous cell carcinoma (OSCC) can present as several variants that make up in aggregate about 10-15% of all squamous cell carcinomas (SCC).[1] These variants include verrucous carcinoma (VC), adenoid/acantholytic/pseudoglandular SCC (AdSCC), spindle cell/sarcomatoid carcinoma (SCSC), adenosquamous carcinoma (ASC), basaloid SCC (BSCC) and papillary SCC (PSCC). Each of these variants has a unique histomorphological appearance. This is a short treatise designed to give a brief overview of the different histopathological variants of OSCC observed in our institute, the separation of which helped in achieving appropriate clinical management.

CASE REPORT

A brief overview of the clinico-pathological appearance of variants of OSCC cases reported in the Department of Oral and Maxillofacial Pathology is presented in Table 1.

DISCUSSION

Conventional SCC [Figure 1] and variants of OSCC frequently arise within the oral cavity. Precise histopathological diagnosis can help the clinician to plan accurate treatment, as the prognosis of each of them differs considerably.

VC [Figure 2] is a very well-differentiated SCC that does not metastasize and has an excellent prognosis with 5-year survival rate of approximately 75%.[2] The lesion has a possibility of metastasis only if it is left long enough and allowed to become more invasive. AdSCC [Figure 3] occurs in the oral cavity infrequently as they usually affect sun-exposed areas with vermillion border of the lip being the most commonly affected site. They have a relative poorer prognosis as compared with conventional SCC [Figure 1]. SCSC [Figure 4] metastasizes to the regional lymph nodes in upto 25% cases, but distant metastasis is less

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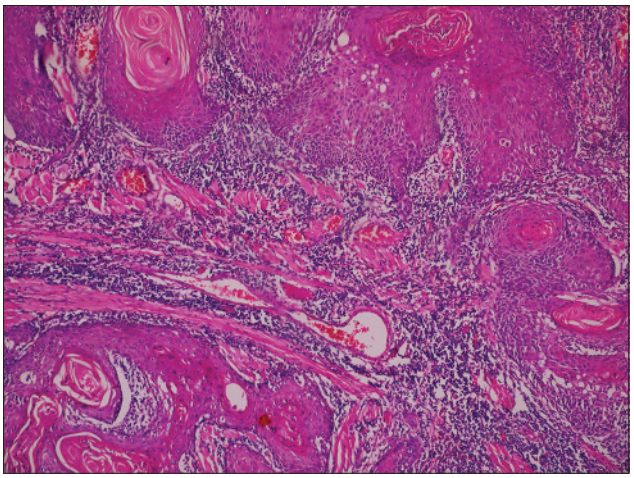

Figure 1: Conventional oral squamous cell carcinoma-malignant epithelial islands showing keratin pearl formation. (H&E stain, ×100)

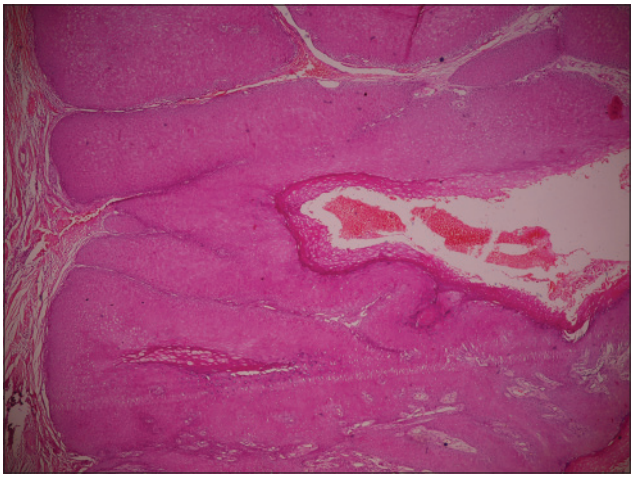

Figure 2: Verrucous carcinoma-broad bulbous pushing rete ridges with parakeratotic plugging (H&E stain, ×100)

Table 1: Clinicopathological appearance of the reported cases of OSCC variants

Case	Age/ Sex	Site	Clinical appearance	Microscopy	Final diagnosis	Treatment	Follow up
1	56/M	GBV in relation to 33, 34 region	Exophytic	Verrucous surface with parakeratotic plugging. Broad bulbous pushing rete ridges with mild dysplasia and no frank invasion	VC	Wide excision	2 years, FOD
2	55/F	GBV extending from 22 to 28	Ulcero-proliferative	Predominantly malignant epithelial cells with areas showing acantholysis of central cells giving a pseudoglandular appearance	Adenoid/ acantholytic SCC	Wide excision and modified neck dissection followed by RT CT	6 months, FOD
3	50/M	Left upper lip	Polypoid	Biphasic tumor consisting of conventional SCC and a predominant spindle cell neoplastic component abutting closely	SCSC	Wide excision and modified neck dissection followed by RT	1 year, local recurrence, AWD
4	54/M	Right buccal mucosa	Endophytic	Biphasic tumor comprising a conventional SCC and an adenocarcinoma in proximity. The malignant cells forming the adenocarcinoma component are dysplastic showing true glandular pattern filled with mucin (positive with alcian blue stain)	ASC	Wide excision and modified neck dissection	Lost to follow up
5	60/M	Right maxillary vestibule	Endophytic	Biphasic tumor showing closely packed basaloid cells with hyperchromatic nuclei arranged in a solid lobular pattern showing peripheral palisading. Prominent areas of comedo necrosis. Atypical mitosis. Abrupt foci of squamous differentiation with keratin pearl formation	BSCC	Wide excision	Lost to follow up

M: Male, F: Female, GBV: Gingivobuccal vestibule, FOD: Free of disease, AWD: Alive with disease, RT: Radiotherapy, CT: Chemotherapy, SCC: Squamous cell carcinoma, VC: Verrucous carcinoma, SCSC: Spindle cell/sarcomatoid carcinoma, ASC: Adenosquamous carcinoma, BSCC: Basaloid squamous cell carcinoma

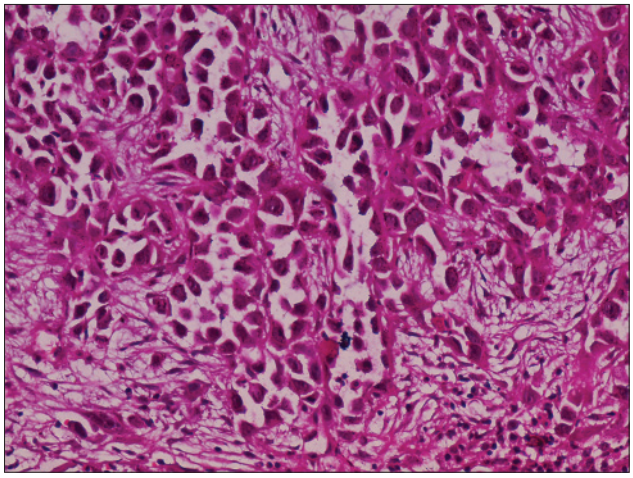

Figure 3: Adenoid squamous cell carcinoma -pseudoglandular pattern with acantholytic tumor cells. (H&E stain, ×200)

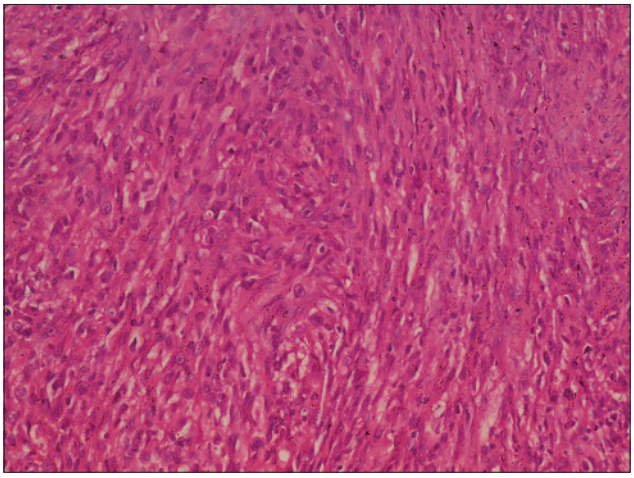

Figure 4: Spindle cell carcinoma-malignant epithelial cells showing spindling/sarcomatoid appearance (H&E stain, ×100)

common (5-15%). The 5-year survival rate varies between 65-95%.[1,3] ASC [Figure 5] has an aggressive behavior, poorer prognosis and a propensity for locoregional and distant metastasis, especially to the lungs. Larynx is most commonly affected (70%) followed by the oral cavity (30%). It shows approximately 2-year survival rate of approximately 55%. BSCC [Figure 6] is regarded as a high-grade tumor with an increased propensity for distant metastasis. It requires

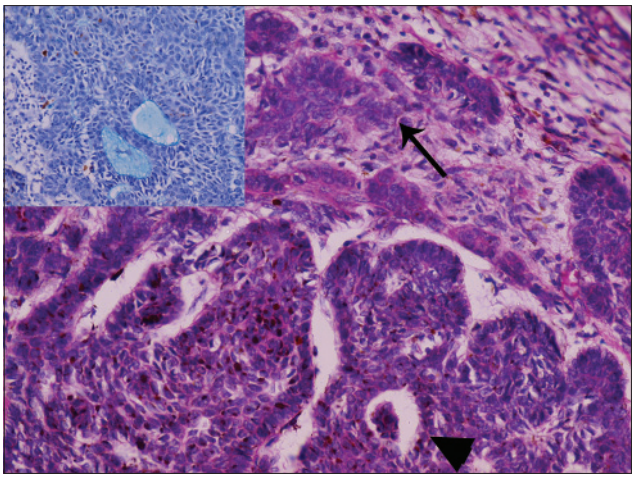

Figure 5: Adenosquamous carcinoma-biphasic tumor showing true glandular differentiation (arrowhead) along with squamous differentiation (arrow) (H&E stain, ×100). Inset depicts alcian blue-positive mucin secretion (×400)

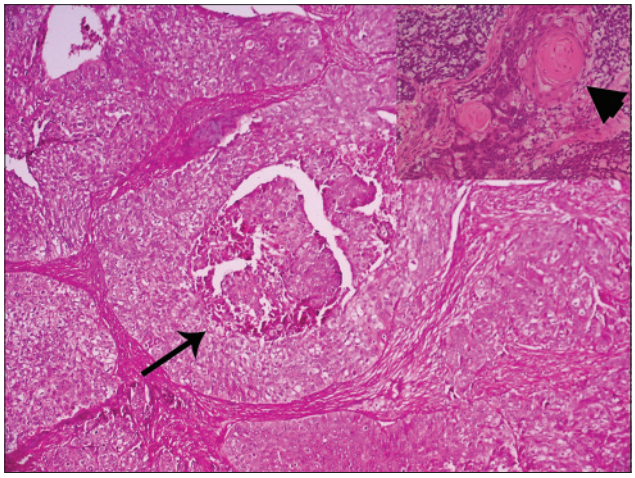

Figure 6: Basaloid squamous cell carcinoma biphasic tumor showing basaloid malignant islands with peripheral palisading and comedonecrosis (arrow) (H&E stain, ×100). Inset depicts squamous differentiation with keratin pearl formation (arrowhead) (H&E stain, ×100)

aggressive multimodality treatment. The 2-year survival rate is 40%.[4] PSCC more frequently affects the larynx. It has a better prognosis when compared with location and stage-matched conventional OSCC.[5]

CONCLUSION

Histopathological variants of OSCC may pose a diagnostic challenge especially the SCSC and ASC, which warrants the use of immunohistochemistry and special stains for an accurate diagnosis. The prognosis, metastatic potential, survival rate and treatment of each of the variants are diverse, thus mandating their distinction.

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