

## CASE REPORT

### SPINDLE CELL DIFFERENTIATION IN ORAL SQUAMOUS CELL CARCINOMA- A RARE ENTITY

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#### ABSTRACT:

Spindle cell carcinoma is an aggressive variant of squamous cell carcinoma which recurs frequently and metastasize. It is a rare biphasic tumor consisting of squamous carcinoma associated with a malignant spindle stromal compound, but of an epithelial origin. Selective sampling of this specimen for possible transitional areas of squamous and spindle cell appearance are helpful in establishing the diagnosis. We report the occurrence of this neoplasm in the lower left retromolar region as an ulceroproliferative lesion in a 62-year-old male patient.

Keywords: Spindle cell carcinoma, biphasic tumor, sarcomatoid carcinoma.

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#### INTRODUCTION:

Oral squamous cell carcinoma (OSCC) represents 95% of all forms of head and neck cancer, the incidence of which has increased by 50% in the last decade. Sarcomatoid Carcinoma (SC) is a rare aggressive variant of squamous cell carcinoma, which frequently recurs and metastasize. Hitherto, various terms have been applied to this tumour such as pseudosarcoma (Lane 1957), sarcomatoid carcinoma (Krompecher 1900), collision tumour or carcinosarcoma (Virchow 1864, Minckler et al 1970)<sup>1</sup>. According to WHO classification of tumours of the oral cavity and oropharynx this disease entity comes under malignant epithelial tumours of squamous cell carcinoma<sup>1</sup>. Sarcomatoid (spindle cell) carcinomas of the head and neck are an aggressive variant of squamous cell carcinoma commonly reported in the larynx but also described in other mucosal sites such as gingiva, tongue, hypopharynx and nasal cavity.<sup>2</sup>

Sarcomatoid carcinomas are biphasic tumors, consisting of a cell proliferation of a squamous carcinoma associated with a malignant spindle stromal compound, but of epithelial origin.<sup>1</sup> In this article we report a case of squamous cell carcinoma of the buccal mucosa showing malignant spindle cell in the stroma which is considered as transition of conventional squamous cell carcinoma into spindle cell.

#### CASE REPORT:

A 62 year old male patient came to the Department of Oral and Maxillofacial Surgery with a complaint of pain in the lower left back tooth region from past six months. The patient gave a personal history of smoking 3-4 packets of cigarettes per day since thirty years.

Clinical examination revealed an ulcero-proliferative lesion on lower left retromolar area extending from mesial aspect of second molar to 3cm posteriorly to the retromolar area (figure 1).



**Figure 1:** Intraoral examination showing an ulcero-proliferative lesion on lower left retromolar area extending from mesial aspect of second molar to 3cm posteriorly to the retromolar area

Other clinical findings included reduced mouth opening, left submandibular lymph nodes which were palpable, tender and fixed. Laboratory findings were within normal limits. An intraoral incisional biopsy was performed.

Microscopic examination of incisional biopsy specimen revealed features of moderately differentiated squamous cell carcinoma. The patient underwent marginal mandibulectomy with selective radical neck dissection and the specimen was sent for histopathological diagnosis.

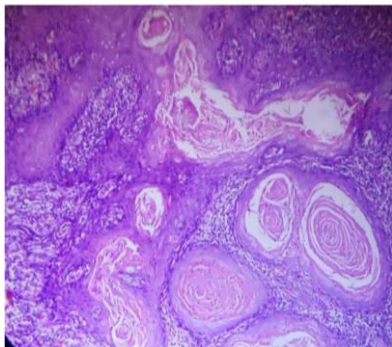
Grossly marginal mandibulectomy specimen consisted of alveolar segment of mandible extending from 36 to 38 with soft tissue attached to it along with the retromolar

trigone, measuring about 4.3x2.3 cm in dimension (Figure 2). The soft tissue which was brownish black in colour, detached from the underlying bone. The cut surface revealed greyish white lesion measuring about 3x2 cm in dimension, firm in consistency.



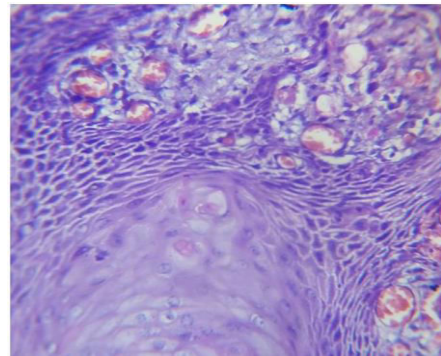
**Figure 2:** Gross appearance of the received excised specimen consisting of marginal mandibulectomy specimen consisting of alveolar segment of mandible extending from 36 to 38 with soft tissue attached to it along with the retromolar trigone.

Histopathological examination of the specimen stained with hematoxylin and eosin showed parakeratinised stratified squamous epithelium exhibiting severe dysplastic features such as increased nuclear cytoplasmic ratio, loss of rete ridges, loss of stratification, cellular pleomorphism, nuclear hyperchromatism, abnormal mitotic figures and keratin pearl formation (Figure 3).

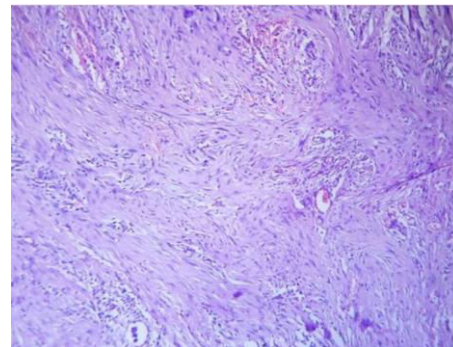


**Figure 3:** Histopathological examination of the specimen stained with H&E showing features of well to moderately differentiated squamous cell carcinoma.

The dysplastic epithelial islands invading deep into the underlying connective tissue in between the muscle bundles were seen. Numerous tumor giant cells were also seen. In focal areas dysplastic epithelial cells are spindled and are arranged in the form of fascicles (Figure 4). The bulk of the tumour showed dysplastic epithelial component and in few areas transition of epithelial component into spindle cells were noticed (Figure 5). All resected margins were free of tumour infiltration. There was a histological evidence of tumour metastasis to level 1B lymph node. Based on the above histological findings the diagnosis of spindle cell variant of SCC was given. Post operative radiotherapy was advised as an adjunct treatment and patient was recalled for regular follow up.



**Figure 4:** Areas showing dysplastic epithelial cells which are spindled and are arranged in the form of fascicles.



**Figure 5:** Dysplastic epithelial component along with few areas showing transition of epithelial component into spindle cells

#### DISCUSSION:

SCC is the most common neoplasm of the oral cavity accounting for 95% of all forms of head and neck cancer, and over the last decade its incidence has increased by 50%. SCC occurs more frequently in males, usually in the 5 to 6th decade of life.<sup>1,2</sup> The risk factors contributing for the etiopathogenesis of oral squamous cell carcinoma include tobacco associated intra-oral carcinogens, which may play a synergistic role in oral tumorigenesis. The international agency for research on cancer (IARC) confirmed that smoking of various forms of tobacco (e.g., bidis, pipes, cigars and cigarettes) is carcinogenic in humans. One of the etiologic agents for spindle cell carcinoma is the ionizing radiation exposure<sup>2</sup>, but in the current case patient had history of cigarette smoking and had no radiation exposure record.

Sarcomatoid (spindle cell) carcinomas are a rare, aggressive variant of squamous carcinoma accounting for 3% of all SCC in the head and neck region. The current case presented in a 62 year old elderly male and the diagnosis was based on the clinical and histopathological examination. Spindle cell carcinoma is a biphasic tumour with a carcinoma that has surface epithelial changes (dysplasia to invasive carcinoma) and an underlying spindle-shaped neoplastic proliferation<sup>3</sup>.

The exact histiogenesis of spindle cell carcinoma is not known. Some authors consider it as a non-neoplastic mesenchymal reaction against invading dysplastic epithelial islands, while others stated that squamous cells undergo metaplasia to spindle cells.<sup>1</sup> Various immunohistochemical, ultrastructural and molecular study revealed that these spindle cells have similar

characteristic features with the squamous cells. However some researchers found that the origin of epithelial and spindle component were different based on a difference in immunohistochemical staining pattern between epithelial and spindle cell components. According to study conducted by Gupta et al.<sup>2</sup>, some of the spindle cells or metastatic cells with mesenchymal appearance expressed dual antigen-positivity with both epithelial (cytokeratin) and mesenchymal (vimentin) markers. Histologically malignant pleomorphic cells may exhibit storiform pattern. Typical and atypical mitotic figures are usually prominent. Giant cells may also be found. Our case showed the characteristic microscopic features above including the presence of tumour giant cells.

The most reliable epithelial biomarkers for the demonstration of epithelial phenotype include keratin (AE1/AE3), epithelial membrane antigen and cytokeratin 18<sup>1</sup>. If spindle cell proliferation is seen as in the present case, then double labelling with keratin and vimentin can be done. If surface epithelium is present, then it serves as a good internal control, but it is frequently lost in most of the cases due to ulceration, which is so in the present case. However immunohistochemistry was not carried out in this case.

It is important to identify the spindle cell transition in conventional squamous cell carcinoma as in the current case because, apparently, it is a more aggressive variety and seems to recur easily and has a potential to metastasize.<sup>1,4</sup> The treatment of choice is primarily surgery with possible neck dissection followed by radiation therapy or chemotherapy<sup>2</sup>. The main aim of the treatment is to eradicate the cancer, restore the form and function and to prevent development of subsequent new primary cancers.<sup>4</sup> There is a controversy regarding radiation therapy for oral cancer and role of chemotherapy is also not established. As in our case patient was treated by wide excision of the lesion with selective radical neck dissection, patient is referred for radiation therapy and is recalled at monthly interval for regular follow up.

#### CONCLUSION:

The SC is a rare and aggressive biphasic tumour consisting of the squamous cell carcinoma and malignant spindle cell component. The histogenesis of SC is controversial, and hence the diagnosis of sarcomatoid variants of squamous carcinomas in the head and neck mucosal site is challenging. The prognosis of this tumor was believed to be similar to that of squamous cell carcinoma, although the data indicates that spindle cell carcinoma is actually a rapidly growing tumor with a tendency to metastasize with a high (55%) mortality rate.

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