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Sarcomatoid Squamous Cell Carcinoma of Mandible: A Report of an Agressive Case

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Abstract **Case Report**

Spindle cell neoplasms represent an heterogeneous group of both benign and malignant tumors. They rarely occur in the oral cavity, accounting for less than 1% of all oral tumors. Sarcomatoid squamous cell carcinoma (SSCC) also referred to as spindle cell carcinoma or Lane's tumor is an uncommon and distinct biphasic malignant tumor that primarily affects the upper aerodigestive tract. This variant of squamous cell carcinoma features spindled or pleomorphic tumor cells that mimic true sarcoma but are of epithelial origin. Known for its aggressive behavior, SSCC has a high tendency for recurrence and metastasis, underscoring the need for accurate diagnosis. We report a case of SSCC, supported by immunohistochemical findings.

Keywords: Sarcomatoid squamous cell, carcinoma, mandible, oral cavity.

INTRODUCTION

Sarcomatoid carcinoma is a rare biphasic malignant tumor characterized by both epithelial and mesenchymal components. Due to its distinct histological features, diagnosing this neoplasm presents a consistent challenge for both pathologists and surgeons. While carcinosarcomas typically arise in the urinary tract and upper respiratory tract of elderly men, their occurrence in the maxillofacial region is exceedingly uncommon. In particular, primary sarcomatoid carcinoma of the mandibular gingiva is extremely rare, with only sporadic cases documented in the literature most of which focus primarily on histopathological findings. The limited data available indicate a notably aggressive clinical course, marked by poor prognosis, high recurrence rates, and frequent metastasis. Although surgical resection remains the mainstay of treatment, adjuvant therapies are often warranted [1,2].

In this report, we describe a case of primary sarcomatoid carcinoma of the right mandible in a 60-year-old woman to highlight the aggressivness character of the tumour.

OUR CASE

A 60-year-old female patient with no medical history presented to our departement with dental pain evolving for a month due to a tumour growth on right side of the mandibular gingiva for 15 days, which was rapidly increasing in size.

Extraorally, important bulging was noted on lower right side of the face near the corner of the mouth. Lymph nodes were not palpable. Intraorally, a polypoid, pedunculated, reddish-pink growth of approximately 8,5 cm × 12.5 cm was seen on gingiva and extending into the alveolar mucosa on buccal surface in 41–48 region. It was firm in consistency and covered by necrotic slough. The associated teeth – 41 to 48 – were Grade III mobile. Indentations of opposing teeth were seen on the surface of the growth.

A CT scan was done revealing a Solid-cystic lesion centered on the right mandibular body, expanding and lysing the bone, well-defined by a wall that enhances after contrast injection, with a hydro-aerial component. The lesion contains tissue areas that enhance post-injection and calcifications, with extension into the sublingual, mental, masseteric, and retro-maxillo-zygomatic spaces, suggesting first and foremost an infected ameloblastoma. [Figure 3,4].

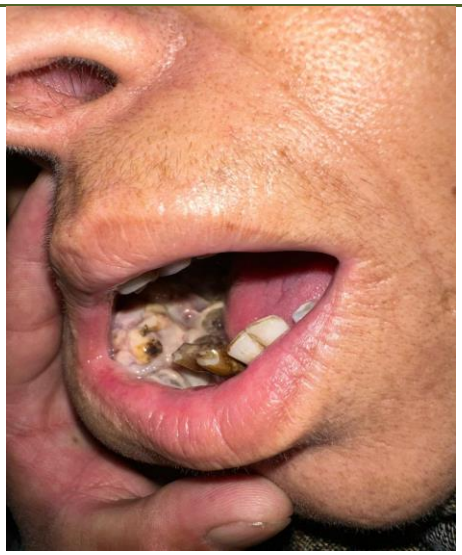

Figure 1: Clinical image of the tumor

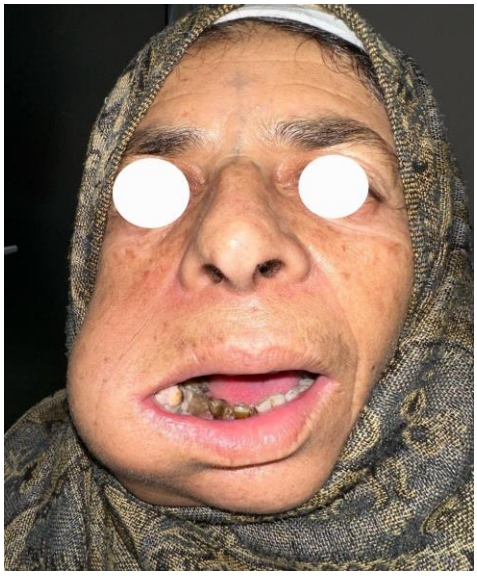

Figure 2: Clinical image of the lesion

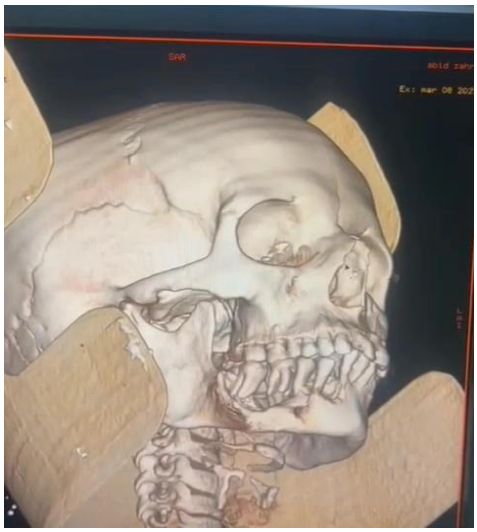

Figure 3: 3D view of the tumoral process

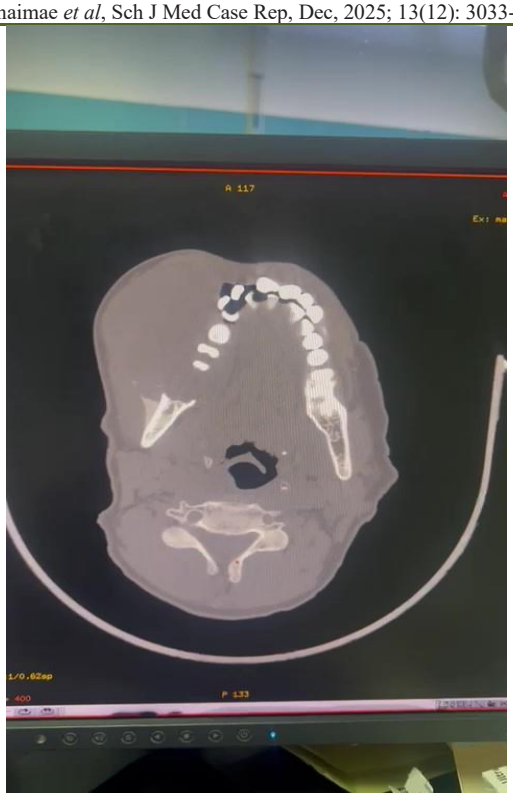

Figure 4 : axial view showing the extent of the tumor

Based on the clinical and radiographic findings, we performed under local anesthesia a biopsy that was sent for immunohistopathology study that came back in favour of scaromatoid cell carcinoma

Histopathology of the biopsy revealed an infiltrative and destructive growing neoplasm, characterised by malignant epithelial and spindle stromal elements. The epithelial element showed squamous epithelial differentiation, while the spindle stromal element revealed hypercellularity and multinucleated tumour giant cells. In both, atypical mitoses and pleomorphism were clearly visible. Immunohistochemistry of the malignant stromal elements exhibited abundant expressions of vimentin (VIM), smooth muscle actin (SMA) and S100 protein The epithelial component was positive for cytokeratin (CK) and p63 protein, and staining of the proliferation marker Ki-67 was approximately 60% of cells.

Based on the histological and immunohistochemical findings, the tumour in the left mandible was diagnosed as sarcomatoid carcinoma.

Unfortunately, the patient passed away within the following days before the treatment plan could be discussed or established.

DISCUSSION

The first description of this malignant tumor was provided by Virchow in 1864, who referred to it as *carcinosarcoma* [3,4]. Subsequently, Krompecher

proposed the theory that carcinoma cells could undergo sarcomatous transformation, a key concept in understanding the tumor's biphasic nature [5].

Sarcomatoid carcinoma is a rare malignant mixed tumor, and its occurrence in the mandible is exceptionally uncommon. The sarcomatous component arises from squamous epithelium through divergent mesenchymal differentiation [6].

Spindle cell carcinoma, a subtype of sarcomatoid carcinoma, most frequently affects elderly males, with peak incidence occurring in the sixth to seventh decades of life [7].

The oral cavity is the most common primary site for this tumor, followed by the larynx, oropharynx/hypopharynx, maxilla, and metastatic lymph nodes [8]. To date, very few cases were reported in the English-language literature documenting sarcomatoid cell carcinoma involving the mandible.

The clinical presentation of sarcomatoid cell carcinoma is variable, ranging from an exophytic, pedunculated, polypoid mass with an ulcerated surface to a deeply infiltrative ulcerative lesion [9,10]. Several predisposing factors have been identified, including alcohol and tobacco use, poor oral hygiene, and prior radiation exposure [9,11,10]. Additional contributing factors may include genetic susceptibility, local trauma, and chronic inflammation [12].

Sarcomatoid cell carcinoma of the oral cavity is often aggressive, with a high tendency for recurrence and metastasis. While predicting the biological behavior of each case can be challenging, deeply invasive tumors are generally associated with a poor prognosis, whereas early-stage lesions tend to have a more favorable outcome [9,13]. Key prognostic indicators include the tumor's depth of invasion, presence of distant metastases, and its polypoid growth pattern. Metastatic lesions typically contain either a squamous cell component alone or a combination of squamous and sarcomatoid cell elements, with rare cases showing only spindle cells. Treatment typically involves radical surgical excision with neck dissection. A combination of surgery followed by radiotherapy has been shown to offer outcomes comparable to those seen in conventional squamous cell carcinoma (SCC) [14].

The differential diagnosis is broad and includes both benign and malignant entities, such as fibromatosis, nodular fasciitis, reactive epithelial proliferations, fibrosarcoma, malignant fibrous histiocytoma, leiomyosarcoma, rhabdomyosarcoma, malignant peripheral nerve sheath tumor, mesenchymal chondrosarcoma, and malignant melanoma [4,11,14].

CONCLUSION

Sarcomatoid carcinoma is a biphasic malignant tumor composed of both carcinomatous and sarcomatous elements. Due to its aggressive nature, it carries a poor prognosis and a high risk of local recurrence and distant metastasis [15]. Radiographic and CT imaging of mandibular sarcomatoid carcinoma typically reveals diffuse, irregular osteolytic bone destruction accompanied by a soft tissue mass, usually without associated bone sclerosis or expansion [1,14]. However, these imaging characteristics are not specific to this rare tumor. As such, definitive diagnosis relies on histopathological and immunohistochemical analysis.

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