

# Acantholytic squamous cell carcinoma of the tongue: A diagnostic challenge

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## ABSTRACT

Squamous cell carcinoma is the commonest malignancy encountered in the head and neck. However, certain variants of this tumor can pose diagnostic dilemma due to their morphological mimicry. An incisional biopsy taken from a growth over the tongue presented with a similar diagnostic challenge. The unique histomorphological features of the rare acantholytic variant of squamous cell carcinoma and its differential diagnosis have been addressed in this report.

**Key words:** Acantholytic, pseudovascular, pseudoglandular, squamous cell carcinoma

## INTRODUCTION

Primary squamous cell carcinoma (SCC) occurring in the oral cavity is a familiar entity. Five variants of the same are described in the WHO classification<sup>[1]</sup> out of which the acantholytic squamous cell carcinoma (ASCC) constitutes a rare entity. The overall incidence of ASCC is only 0.1%.<sup>[2]</sup> ASCC by itself is a rare entity at any site in the body. ASCC in the oral cavity is even rarer.<sup>[3]</sup> The peak incidence of oral ASCC is about 6<sup>th</sup> or 7<sup>th</sup> decade.<sup>[4]</sup>

## CASE REPORT

A 38-year-old mason presented with chief complaints of burning sensation in the tongue since 2 years. He claimed to be an avid smoker since the age of 18 years, who smoked 1.5 packs of beedies per day. His father succumbed to lung cancer at the age of 62 years. No other relevant history was elicited.

On examination, an ulcero proliferative growth was noted on the ventral surface of the left side of the tongue measuring 2 × 2 cm<sup>2</sup>. The lesion was firm to hard in consistency. There

was no clinical evidence of regional and distant metastasis. An incisional biopsy of the same was performed under local anesthesia and submitted for histopathological evaluation.

Microscopy revealed invasive nests of atypical keratinizing squamous epithelial cells. Acantholysis was seen in most parts of the tumor. Pseudo glandular spaces lined by cohesive epithelial cells and lumen filled with acantholytic cells were noted. Dilated vessel like spaces was observed. These were lined by a single layer of atypical epithelioid cells [Figure 1]. Dyskeratosis and atypical mitosis were evident in the tumor [Figure 2]. A diagnosis of acantholytic SCC was arrived at based on these findings. The patient was referred to a higher center for further management.

## DISCUSSION

Acantholytic ASCC is an uncommon histopathological variant of SCC. The lesion is characterized by marked acantholysis, wherein the tumor cells demonstrate defective cohesion to one another leading to a pseudoglandular or pseudovascular appearance. Skin is the most frequent site of affliction, with isolated reports of it being detected in other areas, such as the caecum, oral cavity, penile region, cervix *etc.*, Known risk factors include ultraviolet radiation exposure and tobacco abuse.<sup>[1]</sup>

ASCC is a master mimic on histopathology. It is known to cause diagnostic difficulties to the pathologists due to the discohesive pattern it generates. Hence, there are multitude of terminologies associated with this entity like adenoid

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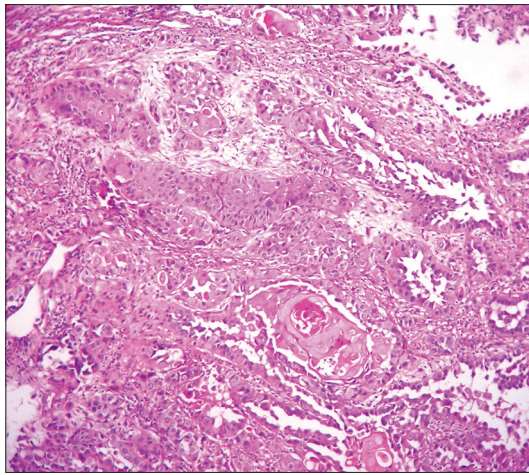
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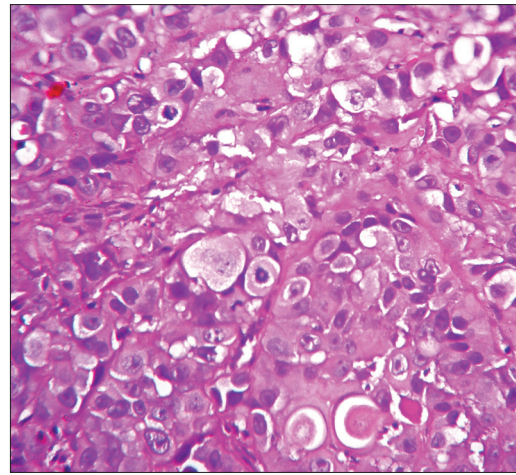


**Figure 1:** Dilated vessel like spaces lined by a single layer of atypical epithelial cells. H and E,  $\times 10$

SCC, pseudoglandular SCC, SCC with gland-like features, angiosarcoma-like SCC,<sup>[5]</sup> and pseudovascular adenoid SCC.<sup>[6]</sup>

The discohesive tumor cell nests provide resemblance of gland like structures of adenocarcinoma and adenosquamous carcinomas. Histologically, adenosquamous variant of SCC consists of invasive tongues, sheets, columns, and strands of dyskeratotic squamous cells which merge with glandular structures with epithelial mucin production. Although ASCC simulates glandular elements, they lack the presence of epithelial mucin production. The tumor cells are positive for cytokeratin and epithelial membrane antigen, whereas those cells forming glands stain for carcinoma embryonic antigen. However, cells of ASCC stain positive for cutaneous epithelial markers like cytokeratin and also high molecular weight keratins such as AE-2/3. The absence of true glandular spaces and mucin production in the index case ruled out the possibility of an adenosquamous carcinoma.<sup>[1]</sup> ASCC is known to show a decrease in TP53 and PCNA expression which is correlated with a decrement in desmosomes seen ultrastructurally.<sup>[1]</sup>

Horie reported in his case report that ASCC of the uterine cervix showed not only features of acantholysis but also pseudovascular changes.<sup>[7]</sup> Similar pseudovascular changes have also perplexed other authors in arriving at a diagnosis.<sup>[6]</sup> In our case, we found similar associations. Angiosarcoma consists of protuberant endothelial cells with enlarged hyperchromatic nuclei. In contrast, ASCC have infiltrating dermal islands with prominent suprabasilar or intratumoral acantholysis. Additionally, there is prominent evidence of squamous differentiation in ASCC. Pseudovascular SCC has similar immunochemical staining with positivity to cytokeratin and negativity to CD31 and factor VIII related antigen. There is also evidence that positivity of Fli 1 in angiosarcoma and In-5 in ASCC are distinguishing features.<sup>[7]</sup>



**Figure 2:** Invasive malignant squamous cells in solid sheets with atypical mitosis. H and E,  $\times 40$

Cunha reported a case series on seven penile cancers. These had microscopic features ranging from solid nests with early necrosis to empty pseudo luminal spaces lined by one layer of squamous or cylindrical cells strikingly simulating glands. He also reported that four cases had vascular invasion and two had perineural invasion. There was no vascular invasion in our case. He also reported that ASCC showed a higher grade and invaded much deeper. The behavior of ASCC was observed to be far more aggressive than the conventional ASCC.<sup>[8]</sup>

The overall metastasis with lesions greater than 2.0 cm ranges from 5-19%. Although Ferlito *et al.* stated that ASCC involving mucosa is more aggressive, the review by Garcia *et al.* reveals inconsistencies in findings of recurrences and metastases.<sup>[9,10]</sup>

Very few immunohistochemical studies are performed on oral ASCC.<sup>[11]</sup> ASCC of the oral cavity as described in a study by Kusafuka *et al.* showed positivity for CK7, CK8, CK19, E-cadherin and p53 but was negative for vimentin, CK20 and S100 protein.<sup>[12]</sup> The main role of immunohistochemistry in this scenario is to differentiate it from other confounding entities.

## CONCLUSION

ASCC certainly poses diagnostic dilemma to the unfamiliar. Close observation to the morphological pattern of acantholysis will reveal the true nature of this lesion. The rarity of the tumor in oral cavity serves as a major cause in the lack of overall understanding of this tumor. Future reporting of such cases will probably be the solution.

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