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CASE REPORT

Basaloid Squamous Cell Carcinoma of Tonsil: an Unusual and Aggressive Variant

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Introduction

BSCC is an unusual and aggressive variant of squamous cell carcinoma (SCC) [1, 2]. It was first described by Wain et al. in 1986 [3]. The upper aerodigestive tract is the most common site with incidence in decreasing order being tongue followed by hypopharynx and supraglottic larynx. However, tonsil is an uncommon and a rare site of BSCC [4]., About 170 cases of BSCC have been found to be reported in the head and neck region, while only 14 have been reported in the tonsil worldwide till date [5]. Males in the age group of 60 to 80 years are more commonly affected [6]. The close association between basaloid and squamous component is the histopathological characteristics of tumour.

Case Report

A 62-year-old male presented to the ENT Out Patient Department with complaints of difficulty in swallowing both solid and liquid foods since 2 months and throat pain since 15 days. The onset was slow and progressive. Patient was a chronic bidi smoker for last 40 years. However, no history of alcohol consumption was elicited. On examination, a soft swelling was noted in the right buccal mucosa. No lymph nodes were palpable. On endoscopy, an ulceroproliferative growth was noted in right tonsillar fossa extending into lateral pharyngeal wall. Indirect laryngoscopy was unremarkable. Complete blood count and other biochemical parameters were within normal limits. CECT neck showed asymmetrical mass with soft tissue thickening and subtle heterogeneity involving right tonsillar fossa and tonsillar pillar (Fig. 1). Ill-defined homogenous soft tissue mass measuring 16 mm × 13 mm was seen in right submandibular region, poorly differentiating from adjacent right submandibular gland possibly a lymph node.

Biopsy was done from right tonsillar fossa and sent for histopathology. Hematoxylin and eosin (H&E)-stained smears revealed tumour cells arranged in solid nests and islands with basaloid cells at the periphery showing peripheral palisading and squamous cells in the centre (Fig. 2a). The basaloid cells showed moderate to marked pleomorphism, hyperchromasia, high N/C ratio and brisk mitotic activity. The centre of these islands showed malignant squamous cells, keratin pearl formation and comedonecrosis (Fig. 2b, c, d). Immunohistochemistry (IHC) for BerEP4 and P63 was done for histiogenesis. BerEP4 (Fig. 3a) was positive confirming the basaloid nature of the tumour and P63 (Fig. 3b) showed diffuse positivity in all tumour cells confirming the squamous origin of the tumour. So a final impression of basaloid squamous cell carcinoma was conferred.

Discussion

Basaloid squamous cell carcinoma is an unusual and aggressive variant of squamous cell carcinoma with a strong predilection for the head and neck region. The upper aerodigestive tract is the commonest site of this tumour in the head and neck.

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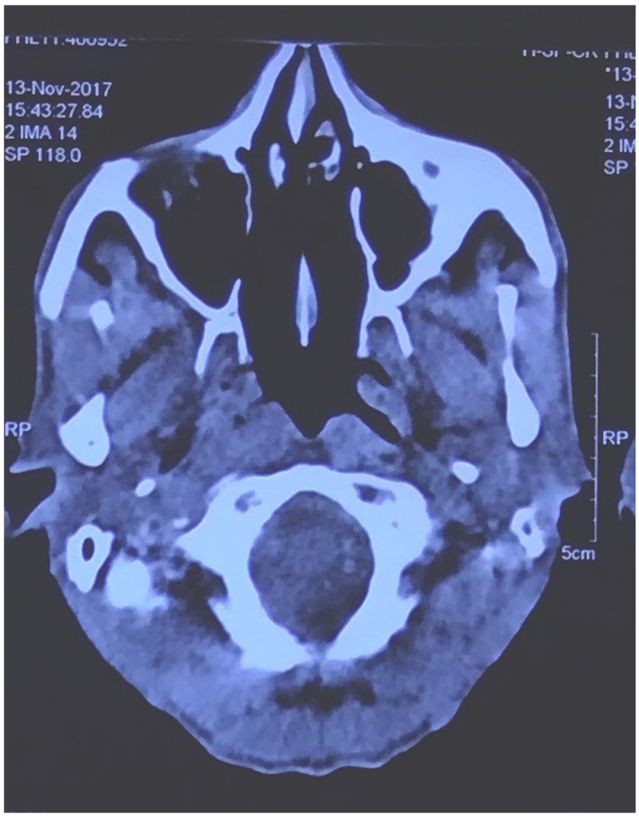

Fig. 1 CECT neck showing asymmetrical mass like soft tissue thickening and subtle heterogeneity involving right tonsillar fossa and tonsillar pillar

Epiglottis, hypopharynx (pyriform sinus) and base of the tongue are more commonly involved while lesser common sites include the floor of the mouth, oral mucosa, palate, tonsils, sinonasal tract, nasopharynx and trachea. Also, BSCC has been reported in the oesophagus, lung, anus, cervix uteri, penis and urinary bladder [2]. The case is highlighted due to its rare presentation in the tonsil.

Basaloid SCC is described as a high grade variant of SCC in WHO blue books in 2005. It is composed of both squamous and basaloid elements. The histiogenesis of this tumour descibed by WHO suggests that it arises from multipotent cells in the basal layers of the squamous epithelium or salivary duct lining epithelium [3, 6]. It is more common in males from 6th to 8th decade although it is prevalent in both the sexes. It is frequently associated with smoking and alcohol. Our case was rare as it presented in the tonsil in a 62-year-old male with no history of alcohol consumption although history of smoking was there.

It is an aggressive neoplasm with high rate of metastasis to the cervical lymph nodes (64%) and lungs (44%) [4]. The mortality is 38% and median survival is 17%. The possible relation between basaloid SCC and viral infection is controversial and is common in some location like nasopharynx and penis. Higher frequency of association of HPV (human papilloma virus) and HSV (human simplex virus) have been reported by Kliess and Mofty et al. while others have found no association [2].

Establishing the diagnosis on histopathology is a challenge at times due to the variable composition of the basaloid and squamous cells. The two tumours that are considered in the differential diagnosis are adenoid cystic carcinoma and neuroendocrine tumour. The distinction from these tumours is needed due to the different clinical presentation and management protocol. A variety of immunohistochemical markers like synaptophysin, chromogranin, keratin, vimentin and carcinoembryonic antigen are needed to differentiate BSCC from other tumours. BerEP4 a monoclonal epithelial

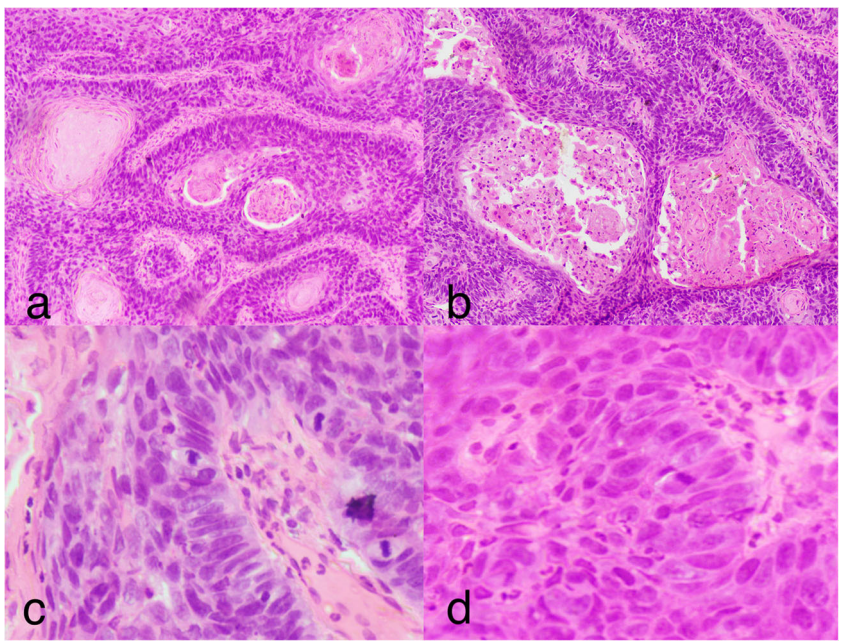

Fig. 2 **a** Tumour cells arranged in solid nests and islands with basaloid cells at the periphery showing peripheral palisading and squamous cells in the centre with keratin pearls formation (H&E, × 100). **b** The centre of tumour islands showing malignant squamous cells, and comedonecrosis (H& E, × 200), **c** mitotic figures (H& E, × 400), **d** basaloid cells showed moderate to marked pleomorphism, hyperchromasia, high N/C ratio (H& E, × 400)

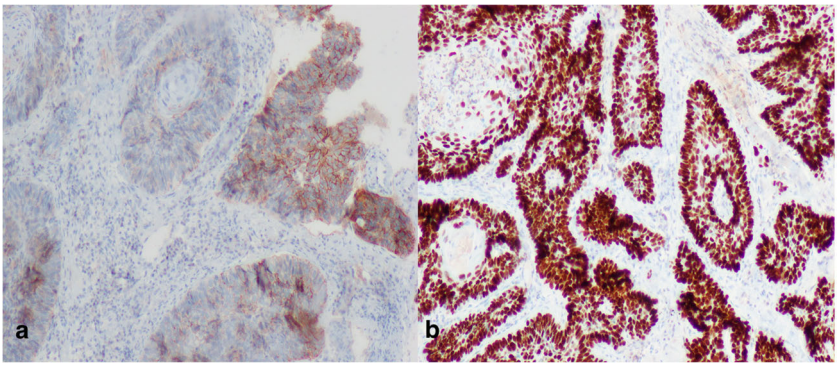

Fig. 3 **a** IHC for BerEP4 showing focal positivity (× 200) and **b** IHC for p63 showing diffuse positivity (× 200)

membrane antigen is a diagnostic marker for BSCC. Also, p63 expression is widespread in BSCC while it is localised to the basal layer in SCC [7]. The present case expressed positivity for BerEP4 and P63. However, there is no specific immunohistochemical pattern to distinguish this tumour from others and its diagnosis is based mainly on H&E sections [2]. Immunohistochemistry is of importance in cases of small endoscopic biopsies in which only partial view of tumour is seen as in the present case.

Grossly, most of the reported cases of BSCCs are either flat or slightly elevated tumours, often with a central ulceration [3]. Very few cases may show a polypoid pattern and these cases have spindle cell component as the third constituent of the tumour [2]. The most common histological pattern is solid nests of cells with basaloid cells at the periphery and squamous differentiation in the centre. Similar pattern was noted in the present case also.

As the major histological component of BSCCs is basaloid, so its most important differential diagnosis is the solid variant of adenoid cystic carcinoma. Adenoid cystic carcinoma is composed of myoepithelial cells but features such as squamous differentiation, pleomorphic atypical cells, mitosis and comedonecrosis are absent [8]. Small cell neuroendocrine carcinoma may have some similar histological features, mainly in small endoscopic biopsies, but presence of neuroendocrine markers and the "dot-like" immunostaining with keratins helps in its diagnosis. Some BSCCs may show cystic or pseudoadenoid like structures resembling adenosquamous carcinomas. Ductulo-acinar differentiation and mucin positivity helps in diagnosing adenosquamous carcinoma [2].

Greater clinical aggressiveness of BSCC compared with the conventional squamous cell carcinoma is a matter of debate [7]. Few authors like Banks et al. [1] noted no difference in behaviour of both the neoplasms, at various anatomical sites while others found some differences [2]. Winzenburg found that cases with pure basaloid histology, comedonecrosis or stromal hyalinisation had a higher frequency of distant metastases and had poor prognosis. Lymph node status is a key factor in survival of BSCC [9]. The present case also depicted basaloid morphology with comedonecrosis and there was evidence of cervical metastases on radiology.

Conclusion

The case is reported due to the rare presentation of BSCC in the tonsil and to highlight the clinical significance of differentiating it from adenoid cystic carcinomas and neuroendocrine carcinomas which are the closest differentials but differs in the management protocol.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

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