CASE REPORT

Acantholytic Squamous Cell Carcinoma of Scalp: A Rare Case Report

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Abstract:
Acantholytic squamous cell carcinoma (SCC) is an uncommon histopathological variant of SCC characterised by acantholysis of neoplastic cells, producing pseudo-lumina and appearance of glandular differentiation. It is also called pseudo-vascular adenoid SCC or pseudo-glandular SCC or pseudoangiosarcomatous SCC. This tumormimics the histopathological appearance of vascular neoplasm, particularly angiosarcoma.We describe a case of Acantholytic SCC in a fair-skinned 63 years old male construction worker to highlight the clinic-pathological features, as well as the recurrence and aggressivenessof this rare form of cutaneous SCC and demonstrate the difficulties in establishing the correct diagnosis.

Keywords: Acantholytic SCC, pseudovascular adenoid SCC, scalp.

Introduction:

Acantholytic SCC is a non-melanocytic skin tumor[1]. It is a variant of SCC, which is the second most common type of skin cancer[1]. These cases most commonly arise in sun-exposed skin areas in middle aged or elderly patients, often associated with actinic keratosis and acantholysis[2]. Acantholytic SCC is characterised by acantholysis of the tumor cells, creating pseudolumina and appearance of glandular differentiation[3]. Acantholysis may lead to the formation of anastomosing spaces and channels, mimicking an angiosarcoma[3]. This variant of SCC has been reported in the skin of the head and neck[4], as well as in the other organs such as the breast[5], lungs[6], urinary bladder[7], vulva, and uterine cervix[8] .We report a case of Acantholytic SCC on the scalp skin.

Case Report:

A 63 year old fair skinned male construction worker presented to the Department of Surgery with hyperpigmented, exophytic or polypoidal tumour on the frontal scalp region since one and half years. Swelling was soft and measured 3cm x 3cm. History of outside excision done one year back was noted without any details available with the patient.

CT brain (plain+contrast) showed malignant growth at frontal scalp region measuring 28x22 mm as a well-defined enhancing, heterogenous mass. The ventricles and brain parenchyma was unremarkable.

Wide local excision (WLE) of the tumor was performed by our surgeon with grossly free margins.

The pathologists received this WLE of mass for pathological study. On macroscopic observation, the excised tumor was proliferative, exophytic with patchy ulceration and measuring 3.5cmx3cmx1.8cm in dimension with free gross and microscopic surgical margins.

When viewed microscopically, the tumor was seen arising from overlying eroded, involved epidermis with moderate differentiation of SCC and infiltrating the underlying dermis (Figure 1).This tumor was composed of vessel-like anastomosing channels, which were surrounded by atypical malignant squames, along with dilated and congested vessels. The lumina of these pseudo-glandular and pseudo-vascular spaces contained pinkish material, few erythrocytes and acantholytic

tumor element. This element was comprised of both loose and compact acantholytic cells (Figures 2a and 2b). There were no vascular and lymphatic tumour emboli.

Thus the case was reported as Acantholytic variant of SCC in frontal scalp. The surgeons treated the patient accordingly. No recurrence of the lesion was noted till six months of follow-up.

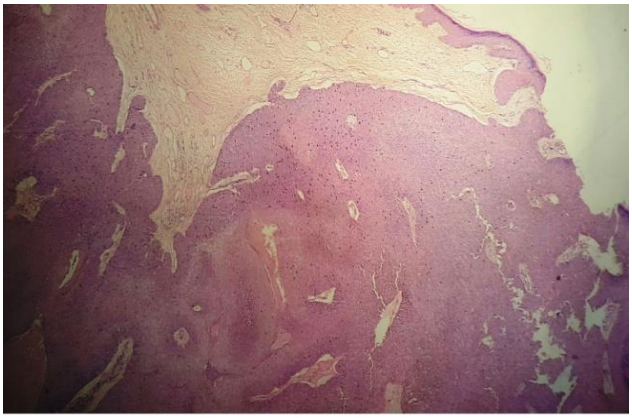

Fig.1: Acantholytic SCC arising from overlying, eroded epidermis with acantholytic spaces between tumor cells within the dermis (H&E, x 40).

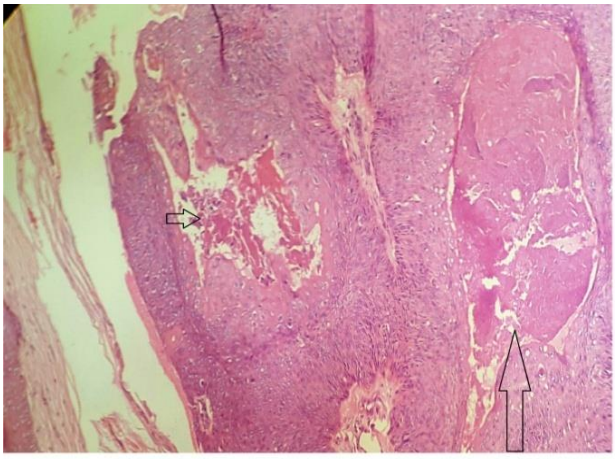

Fig. 2a: Loose acantholytic tumor component (*small arrow*) with compact acantholytic tumor component (*large arrow*) (H&E, x100).

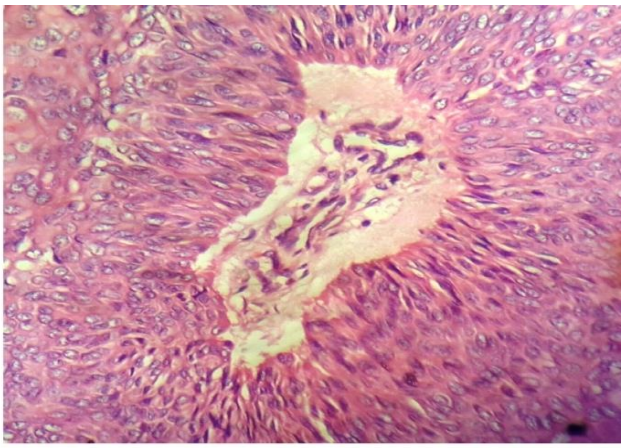

Fig 2b: Pseudovascular tumour cells with palisaded tumor nuclei of malignant squames reminiscent of pseudoglandular arrangement. Hence also called pseudovascular adenoid squmous cell carcinoma (H&E, x 400).

Discussion:

Acantholytic SCC of skin is an unusual variant form of SCC that mimics the histopathologic appearance of angiosarcoma or adenosquamous carcinoma[3]. It is almost always accompanied by foci of conventional SCC, suggesting the correct diagnosis[4, 5]. In the present case, biopsy was suggestive of moderately differentiated SCC, whereas the tumor itself showed features of pseudovascular adenoid SCC or acantholytic SCC.

In small biopsy specimen, however, only the pseudovascular component may be evident and the tumor may be misinterpreted as an angiosarcoma. In such cases, immunohistochemical studies are of utmost importance, leading to the correct diagnosis. The pseudovascular SCC express epithelial markers, such as cytokeratins and epithelial membrane antigen, whereas angiosarcoma typically express vascular antigens – that is, CD31, CD34 and von willebrand factor, which are not expressed in acantholytic SCC. Adenocarcinoma component of adenosquamous carcinoma show positive mucin staining[4].

The exact pathogenesis of acantholytic SCC is not completely understood. Acantholysis is suggested to be the underlying pathogenetic mechanism, possibly as a consequence of desmosomal defect with changes in cell

adhesion molecule expression by the tumor cells[9]. This can be observed as loss of expression of adhesion molecule, E-cadherin, which is one of the major adhesion molecule on the epithelial cells. B- catenin, E- cadherin complex which is present on the cell membrane and which mediates cell adhesion, is obviously disturbed in acantholytic SCC and this is responsible for forming of typical intercellular spaces[10]. Studies have shown that E-cadherin is expressed in most SCC in the head and neck, the expression being strong in well-differentiated cancers but reduced in poorly differentiated tumors[9].

The etiology and prognosis of acantholytic SCC compared to conventional SCC been superior or inferior depends upon follow-up. Prognosis however is dependent upon multiple characteristics of the host and location, size of tumor, depth of invasion, differentiation and previous treatment. But the number of patients reported so far is too small to draw firm conclusions[9]. However, we suggest that the treatment and follow-up of acantholytic SCC patients should be similar to other types of SCC.

In conclusion, although the prognostic importance of pseudovascular adenoid SCC in the head and neck is unknown, its recognition is importance because it may mimic angiosarcoma, which may result in erroneous treatment without IHC correlation. Although there have not been specific studies regarding the role of adjuvant treatment in the management of acantholytic SCC, adjuvant radiotherapy has been recommended for cases of SCC with a high risk of recurrence, particularly invasive disease[11].

Conflict of Interest - Nil
Sources of Support - Nil

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