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A Case Report on Recurrent Trichilemmal Carcinoma of Scalp- Role of Clinico-Radiological Correlation

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ABSTRACT

Purpose: To evaluate diagnosis of Trichilemmal carcinoma scalp with clinico-radiological and pathological correlation.

Introduction: Trichilemmal carcinoma is a rare slow growing malignant adnexal tumour that originates from the external hair sheath of hair follicle accounting for <0.005% of adnexal carcinoma[1]. It mimics squamous cell carcinoma, basal cell carcinoma, sebaceous carcinoma. Rarity, indolent clinical course inspite of local aggressiveness and a good survival rate post excision further undermine the importance of this unique entity.

Herewith, we are reporting a case of recurrent trichilemmal carcinoma of scalp presented to the outpatient department of Radiation Oncology at our institute.

ARTICLE DETAILS

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CLINICAL DETAILS

A 60year female patient presented to the outpatient department in the department of Radiation Oncology with history of swelling in the scalp (right occipital region) 3years back which gradually increased in size, soft and firm in consistency and not associated with pain or discharge/bleeding from the swelling. On local examination of scalp, 7x4.5x7.2cm swelling on right occipital region, soft to firm in consistency, bosselated surface, well defined margin, non-tender, no local rise of temperature. Fine needle aspiration cytology (FNAC) was done from the same site and was diagnosed as a case of Trichilemmal carcinoma of scalp back in 2019 after which she underwent neoadjuvant radiation therapy (NART) (45 Gy in 15 Fraction by 3DCRT (3D Conformal radiation therapy) technique followed by wide local excision with flap reconstruction. 2 years post treatment, she presented with similar complaints on the same site to our institution after which she was subjected to CECT (contrast enhanced CT) brain and it revealed extra-calvarial, fairly well defined, lobulated soft-tissue attenuating lesion in the occipital region with mild sclerosis and thinning [remodelling] of outer table of occipital bone on the right with areas of calcifications. She underwent wide local excision with rotational flap. Post operative histopathological examination recurrent proliferating Trichilemmal tumour.

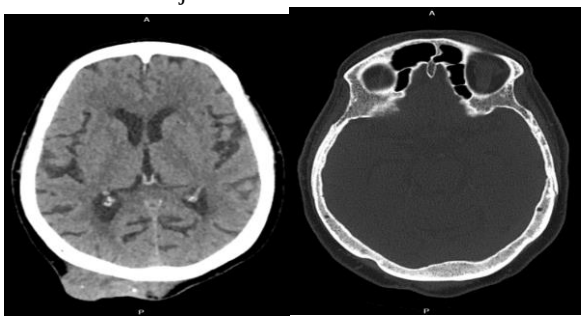

Figure 1a. **Figure 1b**

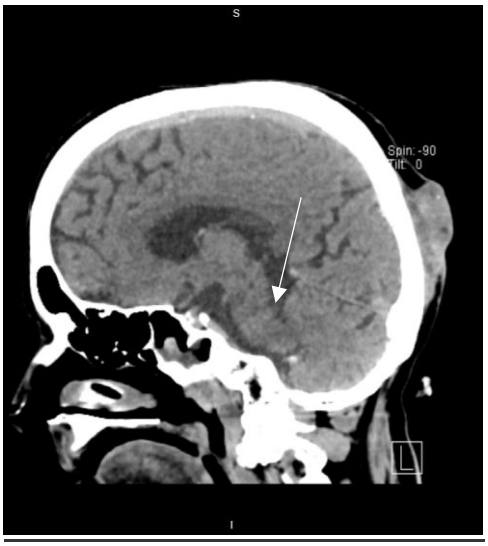

Figure 1c

Figures 1a, 1b, and 1c showing NCCT brain with arrow mark showing the lesion.

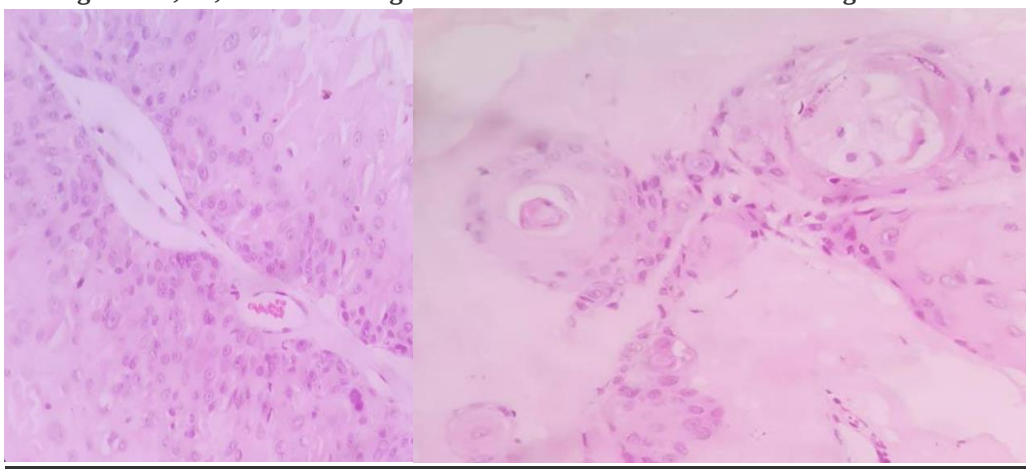

Figure 4 and 5. HPE image showing Lobules of atypical keratinocytes with clear cell changes at places features of Trichilemmal carcinoma

DISCUSSION

Tumours of adnexal components of the skin are very rare and commonly occur as benign lesions of the scalp[2,3]. Trichofolliculoma, desmoplastic trichoepithelioma, trichoblastoma, trichoblastic fibroma, trichoadenoma, proliferating trichilemmal tumor, trichilemmoma, desmoplastic trichilemmoma, pilomatricoma, sebaceous adenoma and sebaceous epithelioma are the benign counterparts [2,3] while Trichilemmal carcinoma, trichoblastic carcinoma, malignant proliferating trichilemmal tumour, pilomatrix carcinoma, sebaceous carcinoma, basal cell carcinoma with sebaceous differentiation are the malignant counterparts [4].

In a study conducted by Kawaguchi et al [5], calcification was seen in 70% of the cases and hyperdense areas were observed in 60% of the cases in Trichilemmal carcinomas and proliferating trichilemmal tumours. Since cholesterol crystals and dystrophic calcification can be seen histologically inside the compact eosinophilic keratin of trichilemmal carcinoma, these pathological traits ought to be represented as calcification and hyperdense regions on CT scans. Internal calcification was observed in 65% of cases on ultrasound images [6] and in 75% of cases on CT images [7], according to earlier research examining imaging results of Trichilemmal carcinomas. However, a few case reports have mentioned proliferating trichilemmal tumours calcification on CT scans. No radiological investigations have noticed the frequency of calcification in proliferating trichilemmal tumours.

In our case, CECT (contrast enhanced CT) brain revealed extra-calvarial, fairly well defined, lobulated soft-tissue attenuating lesion in the occipital region with mild sclerosis and thinning [remodelling] of outer table of occipital bone on the right with areas of calcification.

Earlier case studies that revealed contrast-enhanced MRI findings stated that proliferating trichilemmal tumours typically display heterogeneous enhancement corresponding to a mixture of cellular and cystic/necrotic components [8,9] while Trichilemmal carcinomas typically appear as rim-enhancing cystic lesions [10].

Contrast enhanced MRI may contribute to differentiation between Trichilemmal carcinomas and proliferating trichilemmal tumours. However, our patient did not undergo contrast enhanced MRI.

Owing to its rarity in incidence, proper treatment guideline of such cases has not been established. Benign Trichilemmal tumours can be surgically treated. However, because proliferating trichilemmal tumours are categorised as malignant by the World Health Organisation [11], they would require the surgical margin of the lesion to be excised. Therefore, it appeared that establishing the surgical margin and evaluating the tumour's aggressiveness requires preoperative imaging.

CONCLUSION

In conclusion, the scalp is the most common site of Trichilemmal carcinomas and proliferating trichilemmal tumours. Although both Trichilemmal carcinomas and proliferating trichilemmal tumours typically had hyperdense and calcified areas on their CT scans, soft tissue density areas are frequently the main finding. A proper clinico-pathological correlation is required to confirm the diagnosis. Radiological imaging can be used for determining tumour size, location and invasion of the tumour.

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