# A rare case of squamous cell carcinoma of a proliferating trichilemmal tumour

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**A Rare Case of Squamous Cell Carcinoma of a Proliferating Trichilemmal Tumour**

INTRODUCTION: *Squamous Cell Carcinoma (SCC) includes several subtypes and these can be classified according to their clinical behaviours from the least invasive to the most aggressive. Moreover, it is appropriate to analyse their clinical-pathological patterns 1. In light of its wide histopathological variability, we encountered a rare malignant cutaneous lesion: a SCC of a proliferating trichilemmal tumour (PTT) nature.*
CASE REPORT: *We describe the clinical and pathologic findings of an 82-year-old woman, who developed a SCC with areas of trichilemmal differentiation. It has a surprising thickness of 25 mm, which passes through the dermis, infiltrates the hypodermis and evolves quickly.*
CONCLUSION: *Considering its exophytic growth and the negative results of the post operative tests (ultrasounds confirmed absence of metastasis), the tumour was eradicated thanks to the surgical approach (a 1 cm border wide excision, including the periosteum in the central part of the lesion, followed by its reconstruction using a full-thickness skin graft) and the prompt intervention, without need for further complimentary treatments. The overall aesthetic results were pleasing.*

KEY WORDS: Adnexal tumour, PPT, SCC, Surgery

## Introduction

Squamous Cell Carcinoma (SCC) includes several subtypes and these can be classified according to their clinical behaviours from the least invasive to the most aggressive. Moreover, it is appropriate to analyse their clinical-pathological patterns [1]. In light of the wide histopathological variability, we encountered a rare malignant cutaneous lesion: a SCC of a proliferating trichilemmal tumour (PTT) nature.

PPT is a rare cutaneous benign adnexal tumour deriving from the outer root of the hair follicle. It usually appears on the face as well as on typical sun-exposed areas. The lesion is more commonly found in elderly patients and it especially affects the age bracket of 70 – 90 year olds. There is race and gender prevalence: Caucasian women [2]. In clinical terms, although PPTs are commonly known as non-aggressive, recent literature reveals both locoregional aggressive development and metastatic potential (a malignant proliferating trichilemmal tumour – MPTT) [3-6]. Therefore, wide local excision is the usual therapy; lymph nodes dissection and radiotherapy can be combined treatments for high-risk cases [7] such as tumours that invade bordering tissues accompanied with severe cytological atypia, anaplasia,

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necrosis and elevated turnover. According to Mayo Clinic experience, Mohs micrographic surgery can be an efficient treatment of trichilemmal carcinoma [8]. Recently, in addition to a surgical approach, pharmacological treatment seems to be a promising therapeutic option [9].

## Case report

An 82-year-old Caucasian female patient was examined at our Plastic Surgery Department due to a single, exophytic, nodular, 4 cm x 4 cm mass, located in the frontal region. Ulceration was observed (Fig. 1).
The lesion seemed to be mobile compared to the underlying tissues. The single mass appeared some weeks before medical examination and since then it had rapidly increased. The patient had previously undergone an incisional biopsy of 0.3 cm at another hospital. The diagnosis reported "a *mildly differentiated adenocarcinoma (dermic localisation). Immunophenotype* (cytokeratin pan+; EMA +; CEA +; podoplanina +; CD31 -; S100 -) *compatible with cutaneous adnexal histogenesis."*
There was no family history of cutaneous tumours. However, the patient's medical history indicated: pharmacological treated arterial hypertension, chronic ischemic cardiomyopathy, some cases of dyspnea after low stress caused by an interstitial pneumonia pathology and bladder cancer in situ from 2007, treated with intravesical chemotherapy and TURBT (2015). Moreover, the patient underwent several surgeries: decompression for carpal tunnel syndrome in 1999, left radical mastectomy with homolateral axillar lymph nodes dissection for breast cancer in 2001 and coronary artery bypass graft (CABG) with biological aortic valve substitution in 2015.
Taking into consideration the patient's age, her comorbidities and her medical history, the operation was planned. During the preoperative phase, the patient underwent a pre-anaesthetic evaluation and a cardiological consultation; some further exams were deemed necessary (lab tests, thoracic X-ray, ECG, echocardiogram, spirometry and a facial no contrast CAT scan). The thoracic X-rays showed no anomalies. The ECG revealed sinus bradycardia only. The echocardiogram showed: moderate-grade, concentric, left ventricular hypertrophy; the presence and correct positioning of the functional biological aortic valve; moderate-grade mitral valve insufficiency; medium-grade tricuspid valve insufficiency; low-grade aortic valve insufficiency. The spirometry highlighted a pronounced obstruction of the lower airways. The facial CAT scan highlighted an isodense lesion to the *galea capitis (*31.55 x 34.38 mm*),* in the frontal area, which extended from the cutaneous surface to the frontal muscle, without involving the external teca (Fig. 2A, B; Fig. 3).
The patient was hospitalised. The day before surgery, a prophylaxis for the endocarditis was started. An antithrombotic therapy was also introduced (pneumatic intermittent compression and anticoagulant therapy). The operation consisted of a 1 cm border wide excision, including the portion of the periosteum in the central part of the lesion, followed by its reconstruction using a full-thickness skin graft, taken from the anterior area

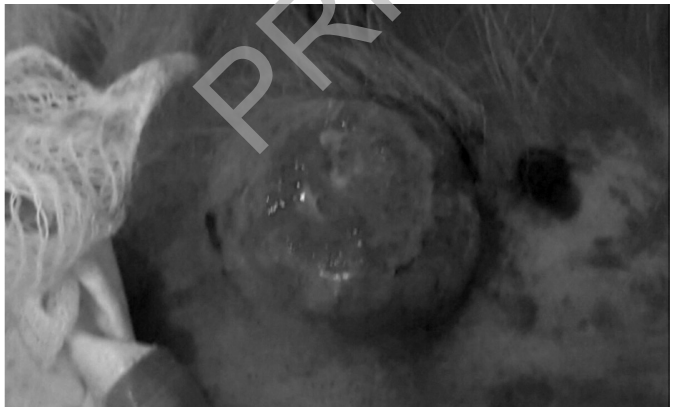

Fig. 1: Pre-operatory lesion.

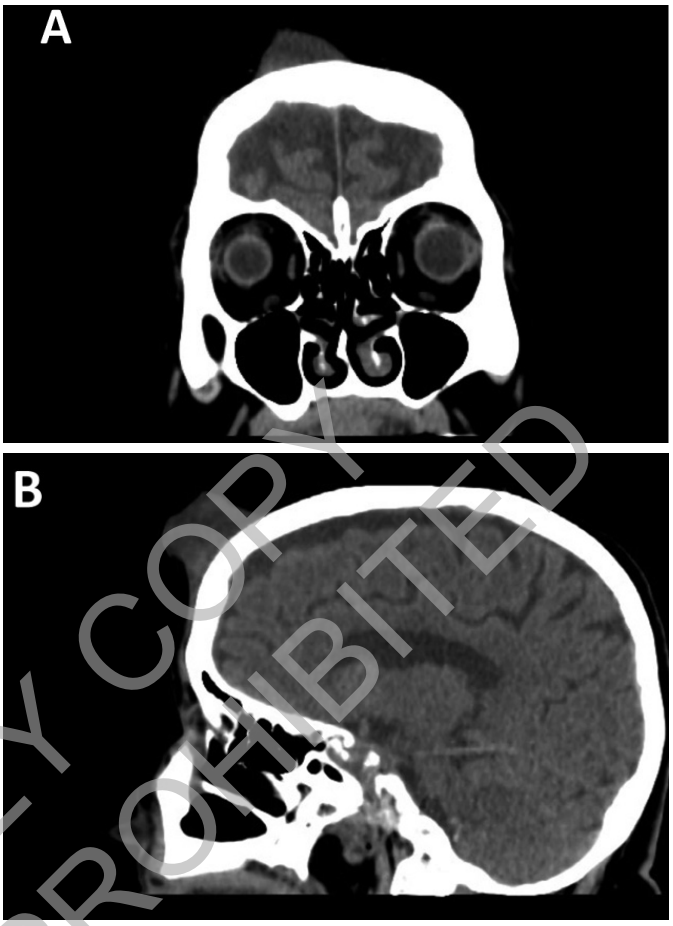


Fig. 2: No contrast facial CAT scan. Coronal Plane (A). Sagittal Plane (B). Isodense lesion in frontal area, without extension to external teca (A-B).

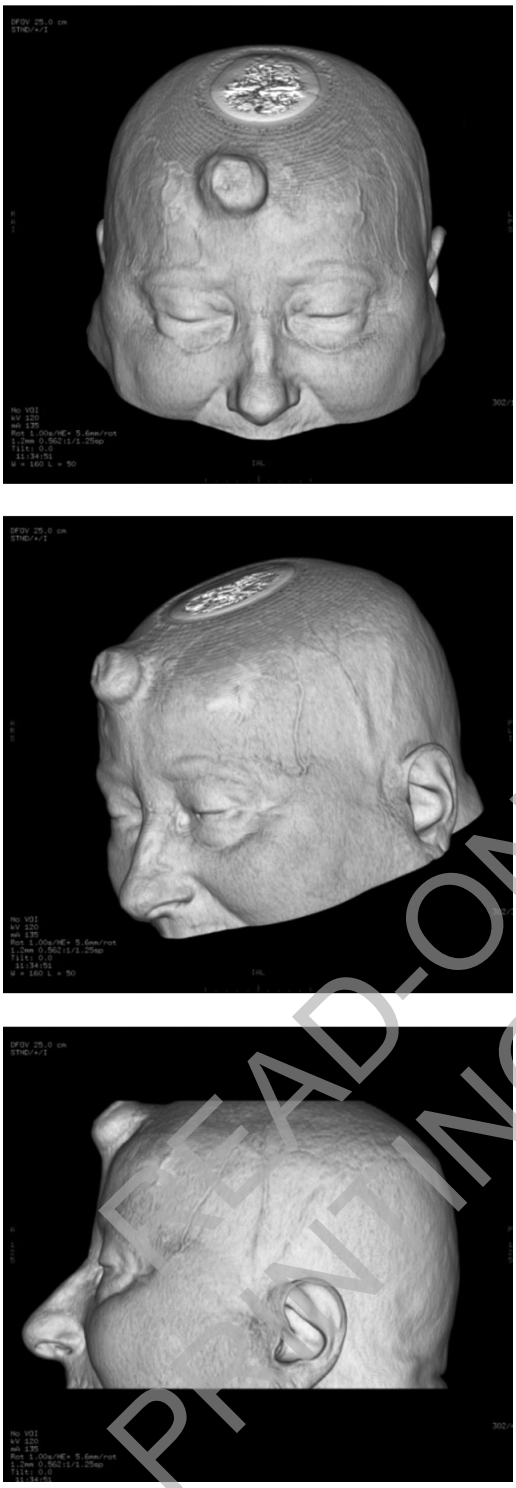

Fig. 3: 3D Facial CAT Reconstruction. Frontal, oblique and sagittal planes.

of the right arm. No complications occurred. The patient's general conditions were good.
Two days later, the patient was discharged and clinical check-ups were planned. Five days after the operation the tie over was removed. Local conditions improved progressively.

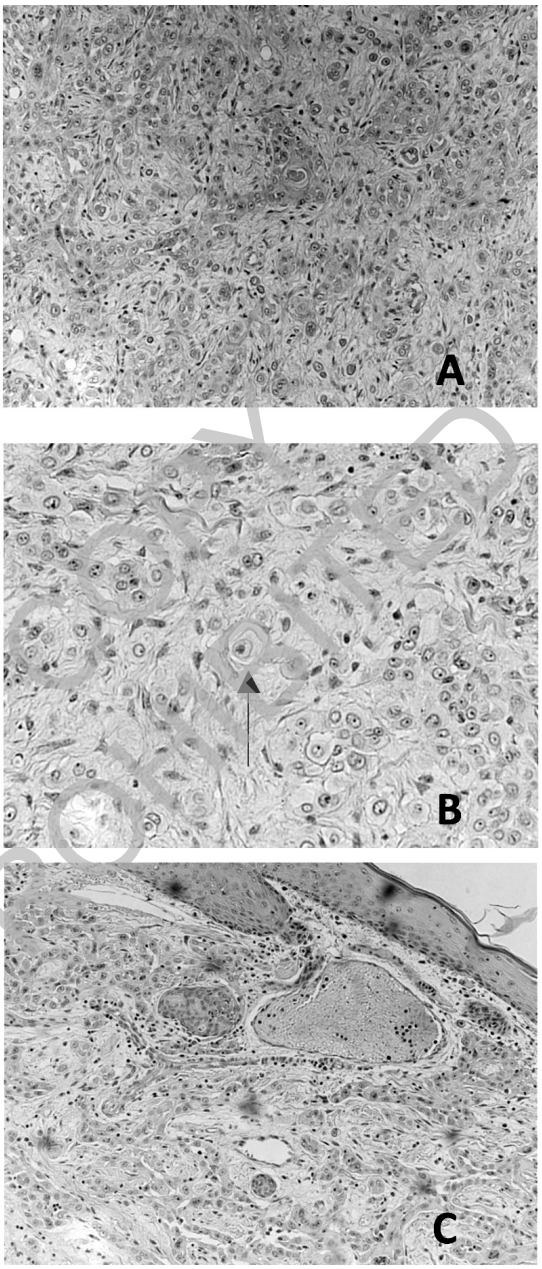


Fig. 4: [20X] – Epithelial neoplasia with diffused pattern growth and cells with squamous differentiation (wide eosinophilic cytoplasm and prominent nucleolus) mixed with great size clear cells (A). Great size cells with prominent nucleolus and horn pearls (see arrow) (B). [10X] Cluster with squamous differentiation (C).

Ten days after surgery, the anatomic pathology report documented the final diagnosis: *"malignant epithelial tumour with areas of squamous differentiation (signet ring cells formation)* (Fig. 4A, B, C).

*Immunophenotype: cyrokeratin pan +, EMA (epithelial membrane antigen) -/+, cyrokeratin 7+, cyrokeratin 20-, P63+, S-100-* (Fig. 5).

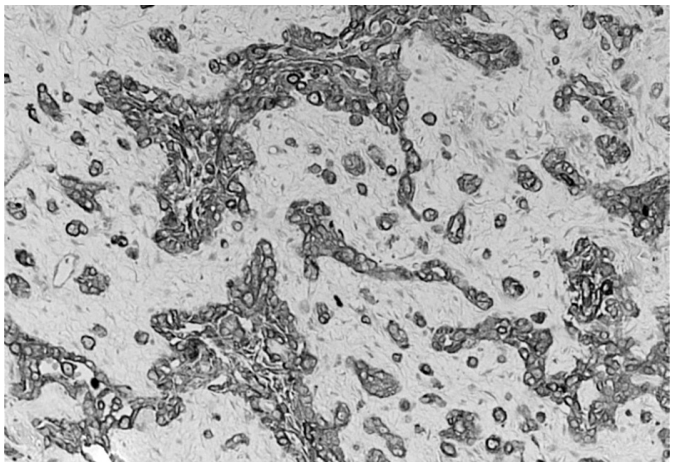

Fig. 5: [20X] – positive immunostaining for p63 in squamous epithelial component, infiltrating connective tissue.

*Conclusion: SCC, mildly differentiated, with areas of trichilemmal differentiation and infiltration of the hypodermis. Thickness: 25 mm. Tumour free surgical margins. pT2 G2"* (Fig. 6; Fig. 7).

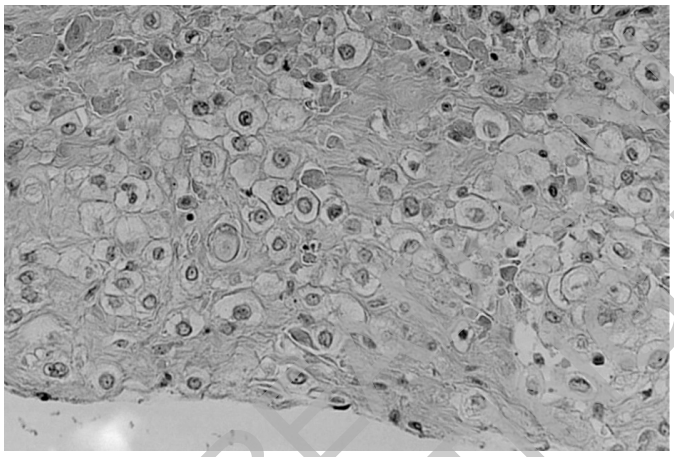

Fig. 6: [40X] – cells with clear cytoplasm, morphological marker of possible adnexal differentiation.

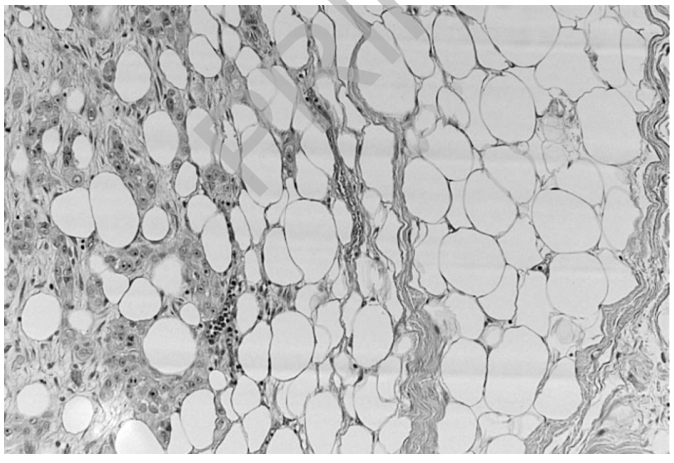

Fig. 7: [20X] – neoplastic cells, infiltrating the hypodermis.

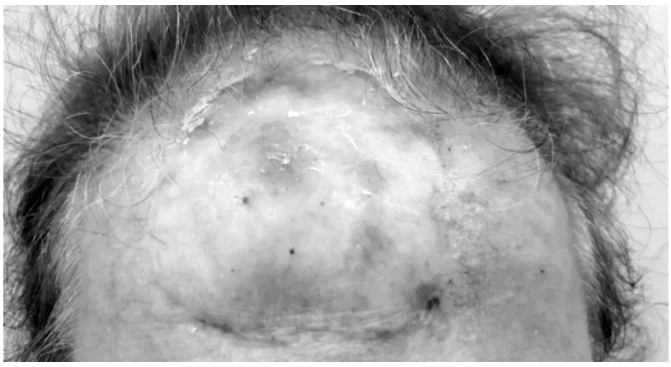

Fig. 8: Post-operative result

## Discussion

It is worth noting that SCC rarely presents adnexal differentiation whereas this happens more frequently, although seldom, with basal cell carcinoma (BCC) after tumour recurrence.
Although these skin lesions are not invasive, literature reports some cases of multiple recurrences and metastasis [10].
Indeed, careful follow-up is necessary and for this reason oncological consultation was required [11]. Therefore, careful clinical follow-up, regional ultrasound and ultrasound examination of locoregional lymph nodes were necessary.

## Conclusions

The thickness of the lesion was 25 mm, it evolved quickly and was invasive (hypodermis). That said, considering its exophytic growth and the negative results of the post operative tests (ultrasounds confirmed absence of metastasis), the tumour was eradicated thanks to the surgical approach (a 1 cm border wide excision was performed, including the portion of the periosteum, which was attached to the non-cleavable central part of the lesion, and this was followed by its reconstruction using a full-thickness skin graft) and the prompt intervention, without need for further complimentary treatments. The overall aesthetic results were pleasing (Fig. 8).


## Riassunto

Il carcinoma sqaumocellulare annovera diversi sottotipi classificabili in base alle loro aggressività. In virtù di questa grande variabilità istopatologica riportiamo il caso clinico di un'ottantaduenne caucasica affetta da una rara forma di carcinoma a cellule squamose, con aree di differenziazione trichilemmale/pilare. Tale paziente giunge alla nosta osservazione con una lesione ulcerata, esofitica, nodulare, di 4 cm x 4 cm, localizzata in regione frontale, già precedentemente sottoposta a biopsia inci-

sionale presso altra struttura e con diagnosi di *"adenocarcinoma moderatamente differenziato con immunofenotipo compatibile con istogenesi annessiale cutanea"*.
Considerate l'età della paziente, le comorbidità nonchè la sua storia clinica, effettuate le dovute indagini preoperatorie, si procede all'intervento chirurgico: ampia escissione en bloc della lesione con un margine radiale di 1 cm e approfondimento fino al periostio, incluso nella porzione centrale della lesione. Chiusura della perdita di sostanza post-chirurgica a mezzo di innesto a tutto spessore prelevato dalla regione anteriore del braccio destro. L'intervento chirurgico è privo di complicanze.
Il referto anatomo-patologico diagnostica, con valutazione definitiva, "*un carcinoma a cellule squamose, moderatamente differenziato, con aree di differenziazione trichilemmale/pilare, infiltrante l'ipoderma con uno spessore di 25mm. Margini chirurgici indenni"*.
Sebbene sia noto un comportamento non invasivo di questo tipo di lesione, la letteratura evidenzia molteplici casi di aggressività locoregionale e presenza di potenziale metastatico, strettamente legati all'infiltrazione dei tessuti adiacenti la neoplasia. Si rendono quindi opportuni follow-up e consulenza oncologica. Alla rivalutazione della paziente, non vi è evidenza di recidiva locale clinicamente nonchè a mezzo di indagine ecografica negativa si per recidia locale che per presenza di metastasi locoregionali.
Ecco che nonstante lo spessore, l'invasività della lesione e la rapidità della sua evoluzione, dato anche il suo atteggiamento esofitico, la negatività delle indagini diagnostiche e la prontezza dell'approccio terapeutico, è stato possibile eradicare il tumore grazie al solo approccio chirurgico, scongiurando la necessità di terapie complementari. L'esito estetico è stato soddisfacente.

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