

# Ear Reconstruction with Preauricular Transposition and Helical Chondrocutaneous Advancement Flap After Excision of Trichilemmal Carcinoma

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## ABSTRACT

Trichilemmal carcinoma (TLC) is a fairly uncommon cutaneous malignancy with a favorable prognosis in the majority of cases. The gold standard of treatment is extensive local excision. The purpose of this study is to demonstrate the outcomes of a single-stage surgical approach that preserves the ear's anatomical characteristics. We present a case of a 70-year-old man who was treated with a single-stage surgical technique for trichilemmal cancer of the ear. After six months, the ear seemed to have entirely healed with no evidence of recurrence.

**Keywords:** Trichilemmal carcinoma, single-stage surgical approach, helical chondrocutaneous advancement flap, preauricular transposition flap, ear reconstruction

## INTRODUCTION

Trichilemmal carcinoma (TLC) is a relatively uncommon cutaneous adnexal tumor that most usually appears on the sun-exposed skin of the elderly face (1). It appears clinically as an asymptomatic nodular or polypoid tumor with ulceration and squamas similar to basal cell carcinoma, squamous cell carcinoma, or keratoacanthoma (2). We describe a case of a 70-year-old man with auricular trichilemmal cancer.

## CASE PRESENTATION

In June 2020, a 70-year-old man presented to our hospital with a nodular, painless lesion measuring 3 \* 2.5cm developing from the triangular fossa of the auricle (Figure 1). A biopsy that was performed a year before in another institution classified it as squamous cell carcinoma. A second biopsy was performed, and the pathology findings confirmed the presence of a TLC. No other abnormalities were seen on magnetic resonance imaging of the head and neck. We selected a single-stage approach to achieve a complete excision of the tumor with a satisfactory

aesthetic and functional result. The surgery was performed under general anesthesia. The lesion was excised through a wide local excision (Figure 2). To address the resulting tissue defect, a helical chondrocutaneous advancement flap and a preauricular transposition flap were employed (Figure 3). Six months after the surgery, the ear seemed to be completely healed, with no recurrent symptoms (Figure 4).

## DISCUSSION

Headington was the first to coin the term "TLC" (3). The majority of patients with TLC are men aged 60-80 years and women over 80 years old. This difference in age distribution is likely due to the fact that women generally pay more attention to sun protection (4). The pathophysiology is unknown; however, sun exposure seems to be the primary causing factor. UV radiation, solid organ transplantation, immunosuppression, scarring, burns and hereditary illnesses such as xeroderma pigmentosum and Cowden disease are all established as risk factors for this malignancy (5). Given the recent progressive increase in the incidence of TLC, one should be alert to the

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Figure 1: Tumor arising from triangular fossa of auricle.



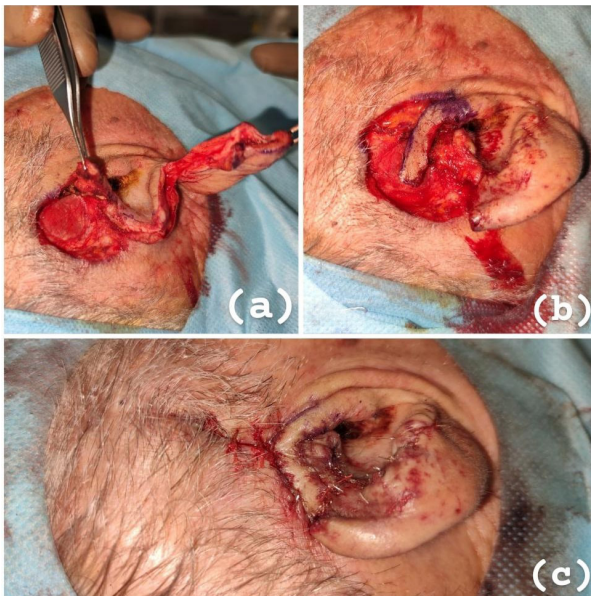
Figure 2: Wide local excision of lesion

possibility of TLC when faced with adnexal skin tumors of the head and neck (4).

Currently, the differential diagnosis of TLC is mainly based on Hematoxylin-eosin (HE) staining. Periodic acid–Schiff (PAS) staining has also been widely used. However, we cannot rely on PAS staining alone to diagnose TLC (6,7). For cases in which differential diagnosis is difficult, special stains may be helpful.

Differential diagnosis of TLC from cancers such as clear-cell squamous cell carcinoma, clear-cell basal cell carcinoma, balloon cell melanoma, hidradenocarcinoma, sebaceous carcinoma, and metastatic clear-cell adenocarcinoma can be made with special stains (4). While TLC stains positively with Pan CK, CK15, Ki-67, p63, p53, and CK1, it stains negatively with S-100, CEA, HMB-45, Vimentin, MelanA, and SMA (4).





**Figure 3:** (a) Helical chondrocutaneous advancement flap harvested (b) preauricular transposition flap harvested (c) intraoperative appearance after reconstruction.

TLC has a slow-growing clinical history and is susceptible to curative resection with standard surgery (5). However, incidences of profound invasion and local recurrence have been recorded occasionally in the literature. Furthermore, in immunocompromised transplant recipients, TLC may metastasize to the liver and lung, with a poor prognosis (8).

The first line treatment for curative purpose is surgical excision with 1 cm safety margins and no adjuvant therapy. Postoperative monitoring of the patient is required to allow for early detection of recurrence and metastases (9). Mohs micrographic surgery is an effective treatment method for malignant trichilemmal tumors (2). We were able to do an intervention that preserved the anatomy of the ear in terms of size, shape and helix fold without jeopardizing the procedure's safety in terms of total tumor removal. Using two flaps, we restored the helix profile and original anatomical thickness. Finally, under general anesthesia, this single-staged method may be conducted in the same day clinic.

## CONCLUSION

Our single-stage surgical approach preserved the ear's anatomy after full removal of the tumor.

**Informed Consent:** Written informed consent was obtained.

**Peer Review:** Externally peer-reviewed.

**Conflict of Interest:** The author has no conflict of interest to declare.

**Financial Disclosure:** The author declared that this study has received no financial support.



**Figure 4:** Six months after the operation, the ear appeared completely healed, with no signs of recurrence.

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