



## CASE REPORT

# True Trichilemmal Cyst or Pilar Cyst: A Case Report

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## ABSTRACT

**Introduction:** Trichilemmal cyst is one of the most common cutaneous cyst occurring on the scalp. It is seen more frequently in females, originated from the outer root sheath of the hair follicle.

**Case report:** A 65 years old male patient reported with a complaint of swelling on the right side of the cheek. On clinical, histopathological examination, we concluded as a trichilemmal cyst.

**Management:** Lesion was surgically excised in toto under local anesthesia and the specimen was sent for histopathological examination

**Conclusion:** Trichilemmal cyst (TC) occurs more commonly on the scalp region, affecting female more commonly than male, which should be diagnosed as earlier or it might proliferate and convert into the malignant proliferating trichilemmal tumor (MPTT) which is a malignant counterpart of the trichilemmal cyst. The epidermoid cyst should be differentiated from trichilemmal cyst by having prominent granular cell layer in the epidermis which is lacking in the trichilemmal cyst. Epidermoid cyst originates from entrapped pluripotent cells or implanted epithelium. Our case report is a rare case because here the site of the lesion is cheek and seen in the male patient.

**Keywords:** Cyst, Epidermoid cyst, Trichilemmal cyst, Pilar cyst, Proliferating trichilemmal tumor.

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## INTRODUCTION

A cyst is a pathological cavity having fluid, semifluid or gaseous content.<sup>1</sup> Cysts of the skin are very common and most frequent cutaneous cysts are follicular cysts the walls

of which are lined by stratified squamous epithelium.<sup>2</sup> Follicular cysts of the skin are developmental in origin. They are common keratin-filled lesions that arise from one or more portions of the hair follicle. Most common cyst occurring on the skin is an epidermoid cyst, sebaceous cyst, dermoid cyst, a trichilemmal cyst containing keratin and it breaks down products usually situated on the scalp.<sup>3</sup> The trichilemmal cyst is the second most common cyst in the head and neck region.<sup>4</sup> They are derived from the outer root sheath of the deeper parts of a hair follicle and consist of a well-keratinized epidermal wall surrounding semisolid hair keratin.<sup>5</sup> Different names were given for trichilemmal cyst like pilar cyst, isthmus-catagen cyst.<sup>6,7</sup> These cysts are believed to be genetically inherited.<sup>7</sup> Cutaneous cyst and tumors derived from the outer root sheath of hair follicles, which show trichilemmal keratinization are trichilemmal cysts (TC), proliferating trichilemmal cysts (PTT) and malignant proliferating trichilemmal tumor. Malignant proliferating trichilemmal tumor (MPTT) are rare and pose a diagnostic dilemma for the pathologist.<sup>8</sup> MPTT clinically mimics squamous cell carcinoma because of its large size, exophytic nature of growth and ulceration of the overlying skin. It has also been stated that the tumor has a tendency to recur and metastasize more frequently than squamous cell carcinoma.<sup>9</sup> As the oncological transformation of trichilemmal tumor occurs, Saida et al. defined three stages, the adenomatous stage (trichilemmal cyst); the epitheliomatous stage (proliferating trichilemmal cyst); the carcinomatous stage (MPTT). Malignant transformation to squamous cell carcinoma or spindle cell carcinoma is a rare phenomenon.<sup>9,10</sup>

## CASE REPORT

### Case Details

A 65-year-old male patient reported to the Department of Oral and Maxillofacial Surgery, Yenepoya dental college, Deralakatte, Mangalore with a complaint of small swelling on the right side of the cheek. The lesion was slow growing and patient noticed swelling one and half year back. The swelling was asymptomatic and started increasing in size for 6 months. No history of pain, discharge, and no relevant family history. On extraoral examination, the swelling was well circumscribed, soft in consistency, measuring about 1 × 1 cm in size, which is freely movable

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not fixed to underlying tissue, non-tender and skin over the swelling was normal. Lymph nodes of the neck were non-tender and not enlarged. Clinical provisional diagnosis was a lipoma, an excisional biopsy was performed under local anesthesia, under aseptic condition. A semilunar incision was placed over the lesion along the relaxed skin tension lines. Blunt dissection was done and the lesion was freed from the surrounding tissue. The stalk was cut and the lesion was removed in Toto (Fig. 1). Irrigation was done using betadine and saline. Suturing was done using 3-0 black silk. Antibiotic and analgesics were prescribed.

### Gross and Histopathology Details

On gross examination the lesion was well encapsulated, soft in consistency, greyish to whitish in color, measuring about  $1.5 \times 0.5 \text{ cm}^2$  (Fig. 2). The cut section shows a lumen filled with cheesy material. Cut tissue Sections were taken for fixation and routine processing, and paraffin wax embedding was done. Sections were made using rotary microtome, stained with hematoxylin and eosin and viewed under a microscope.

On microscopic examination, lesion revealed orthokeratinized stratified squamous epithelium without skin appendages. The lumen has abundant keratin. There is an absence of the granular cell layer. Epithelium and connective tissue interface were flat. Underlying connective tissue stroma is fibrocellular with blood capillaries (Figs 3 and 4). Based on clinical & histopathological features a trichilemmal cyst was considered.

### DISCUSSION

The trichilemmal cyst is keratin-containing cyst occurring more commonly on the scalp and accounts for 5 to 10% of keratinous cysts with a female predilection. It can

be solitary/multiple, intradermal/subcutaneous in location, which appears clinically as smooth, mobile, nodular growth. Women are affected more commonly than men.<sup>3</sup> In the present case, the male patient affected. The trichilemmal cyst can occur spontaneously or with a family history with autosomal dominant transmission. There are some clinical criteria for identifying hereditary variant of trichilemmal cyst which are:

- Diagnosis of trichilemmal cysts in at least 2 first-degree relatives, or in 3 first- or second-degree relatives in 2 consecutive generations;
- Trichilemmal cysts diagnosed with less than 45 years of age minimum in 1 family member;
- Diagnosis of multiple cysts, giant cysts (greater than 5 cm), or cysts with rare histopathologic features, such as proliferation or ossification. The authors noted and concluded that the clinical suspicion of hereditary disease would result in earlier diagnosis and screening of younger family members, with a correspondingly reduced risk of malignant transformation.<sup>11</sup> In the present case, the patient had no relevant family history. It can be solitary/multiple. Here in the present case, the lesion is solitary. In the literature, few cases of trichilemmal cyst got transformed into a proliferating trichilemmal tumor.<sup>12</sup> The clinical differential diagnosis for trichilemmal cyst is an epidermoid cyst, lipoma. The epidermoid cyst can be differentiated from trichilemmal cyst histopathologically by the way the lining cells mature. They do not flatten and form a granular layer and contain keratin in the inner margin of the lining, unlike the lamellated keratin flakes in an epidermoid cyst.<sup>3</sup> Histopathological examination revealed the absence of granular cell layer and having abundant keratin, which itself indicates that it is a true trichilemmal cyst rather than an epidermoid cyst. Proliferating trichilemmal tumor (PTT) shows variable

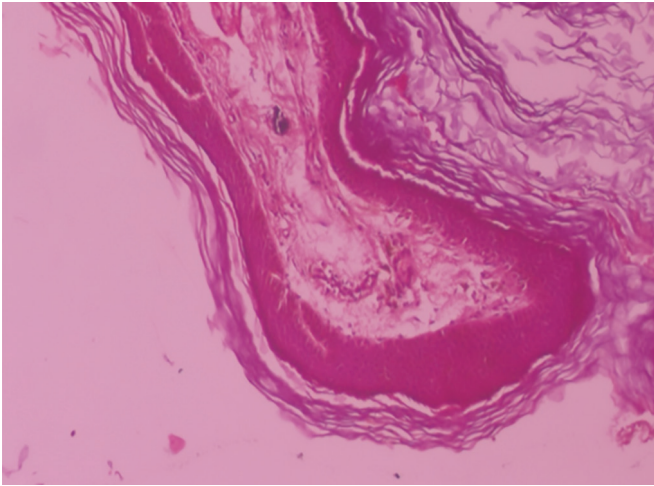


Fig.1: Surgical removal of the lesion which is on the right side of the face measuring about  $1 \times 1 \text{ cm}$  in size

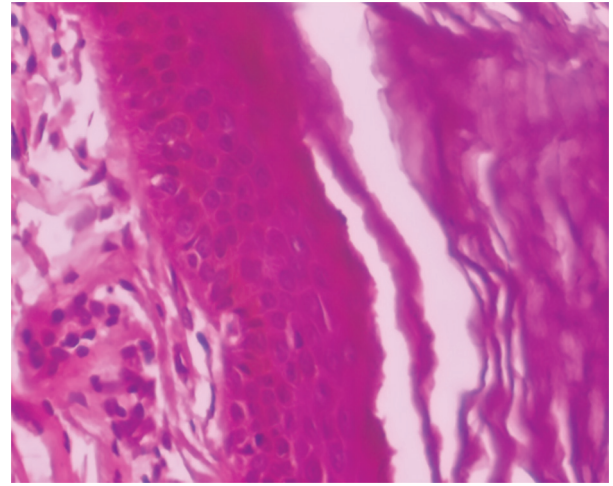


Fig. 2: Gross appearance of the cystic lesion





**Fig. 3:** Cystic lining with lumen under low magnification 10X



**Fig. 4:** Light microscopic view under high power 40 X shows orthokeratinized skin epidermis with absence of granular cell layer and skin appendages

cytological atypia, extensive epithelial proliferation, mitotic activity, which is not a feature of the trichilemmal cyst. Malignant proliferating trichilemmal tumor (MPTT) shows trichilemmal keratinization with high mitotic rate, atypical mitosis, severe nuclear pleomorphism, and tumor invasion into the adjacent tissues, which are not seen with a trichilemmal cyst (TC).<sup>9,10</sup> Treatment involves complete surgical excision of the cyst. The trichilemmal cyst should be considered based on familial history, clinical examination, histopathology. In the present case male patient with solitary cyst located on the face, and no previous family history is a rare case considering the site of the lesion and sex of the patient and these features are not similar with the literature. Considering clinical and histopathological features it was diagnosed as a true trichilemmal cyst. Very rare cases of trichilemmal cyst got transformed to proliferating trichilemmal tumor in the literature, so proper history and close observation both clinical & histopathology is needed in the management of trichilemmal cyst.

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