



CASE REPORT

MORE THAN A BUMP: DISTINGUISHING TRICHOEPITHELIOMA FROM EPIDERMOID CYST THROUGH CLINICAL AND HISTOPATHOLOGICAL INSIGHTS

Dinda Rozita Maharani^{1,2}, Septiana Widyantari^{1,2}, Bagus Haryo Kusumaputra^{1,2}, Irmadita Citrashanty^{1,2}, Maylita Sari^{1,2}, Mohammad Yulianto Listiawan^{1,2}

¹ Department of Dermatology Venereology and Aesthetic, Dr. Soetomo General Academic Hospital

² Department of Dermatology Venereology and Aesthetic, Faculty of Medicine, Universitas Airlangga

***Corresponding Author** Septiana Widyantari, Department of Dermatology Venereology and Aesthetic, Dr. Soetomo General Academic Hospital / Department of Dermatology Venereology and Aesthetic, Faculty of Medicine, Universitas Airlangga, Jalan Prof. Dr. Moestopo No. 6-8, Surabaya, Indonesia 60286, Phone: +62-812-3213-249, e-mail: widyantariseptiana3@gmail.com

Received: Jun 7, 2025; **Accepted:** Jul 28, 2025; **Published:** Aug 17, 2025

ABSTRACT

Introduction: Trichoepithelioma (TE) is a rare benign adnexal tumor of follicular origin, frequently misdiagnosed due to its clinical resemblance to other cutaneous lesions, including epidermoid cysts and basal cell carcinoma. Distinguishing these lesions is critical to prevent overtreatment or mismanagement, particularly on cosmetically sensitive facial areas.

Case Illustration: We report a case of a middle-aged female presenting with a solitary, slow-growing, skin-colored nodule on the nasal bridge. The lesion was initially suspected to be an epidermoid cyst. Dermoscopic examination revealed arborizing vessels and milia-like cysts, suggestive of TE. Histopathological evaluation confirmed the diagnosis, showing basaloid cell proliferation with follicular differentiation and keratin-filled cysts, without cellular atypia. The lesion was completely excised, and no recurrence was observed during follow-up.

Discussion: Epidermoid cysts, while also benign, exhibit different histological features such as a stratified squamous epithelial lining and keratinous content. Misdiagnosis may occur due to overlapping clinical appearance. Dermoscopy provides valuable clues, but histopathology remains the definitive diagnostic modality. Surgical excision remains the standard of care for both conditions when symptomatic or for cosmetic reasons.

Conclusion: This case highlights the diagnostic challenges in differentiating trichoepithelioma from epidermoid cysts. A multidisciplinary approach incorporating clinical examination, dermoscopy, and histopathology is essential for accurate diagnosis and appropriate management. Increased clinical awareness is crucial, especially in primary care and dermatologic settings.

Keywords: Dermoscopy; Differential Diagnosis; Epidermoid Cyst; Histopathology; Trichoepithelioma

INTRODUCTION

Trichoepithelioma (TE) is a benign adnexal neoplasm originating from immature hair follicles, typically appearing as solitary or multiple skin-colored papules or nodules on the face, particularly around the nose, nasolabial folds, and central facial regions. Although clinically indolent, its resemblance to basal cell carcinoma or epidermoid cysts presents a

diagnostic challenge, especially in elderly patients or those with comorbidities requiring careful lesion management^{1,2}.

On the other hand, epidermoid cysts are among the most frequently encountered benign cutaneous cysts, developing from the proliferation of epidermal cells within the dermis. They often present as soft, slow-

growing, freely mobile nodules, occasionally with a central punctum, and may become inflamed or secondarily infected³. Both lesions are often confused due to overlapping clinical features, particularly when located on the face or scalp, necessitating further diagnostic evaluation. Histopathologically, TE is characterized by basaloid cell islands with peripheral palisading and keratin-filled cystic structures, whereas epidermoid cysts consist of a stratified squamous epithelium lining with laminated keratin content and absence of basaloid features^{4,5}. Dermoscopy has emerged as a non-invasive diagnostic tool that may assist in differentiating these lesions based on specific vascular and pigmentation patterns⁶.

Due to their similar clinical appearance, accurate diagnosis relies heavily on histopathological examination. Recent case reports and reviews highlight the importance of careful biopsy in suspected TE cases to distinguish them from malignant mimics and other benign tumors^{2,5}. Given the differing management strategies, ranging from simple excision for cysts to more nuanced surgical decisions in TE, recognizing the subtle differences is critical for dermatologists and general practitioners alike.

This presents a case of facial nodule initially suspected as an epidermoid cyst but ultimately diagnosed histologically as trichoepithelioma, emphasizing the importance of biopsy in the diagnostic workup of solitary cutaneous nodules.

Case Illustration

A 56-year-old female presented with a solitary, flesh-colored nodule on the nasal region that had been gradually enlarging over the past year. The lesion was initially small, like a spot, and occasionally itchy. It was slightly tender upon palpation but non-mobile, non-ulcerated, and without signs of secondary infection. The patient denied any previous treatment or trauma at the site. Past medical history was significant for coronary artery disease, inflammatory spondylopathy, and multiple chronic medications, including methotrexate and NSAIDs. No family history of similar lesions was reported (**Figure 1**).

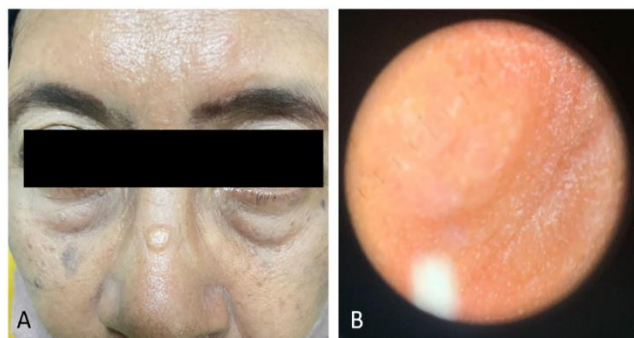


Figure 1. (A) Physical examination in first visit. (B) Dermoscopy examination shows arborizing vessels and millia-like cyst formations.

Physical examination revealed a solitary nodule, well-demarcated, skin-colored nodule approximately 0.5 cm in diameter with no erosion. No discharge or punctum was noted. Given the clinical presentation and differential diagnosis of trichoepithelioma versus epidermoid cyst, a punch biopsy was performed. Histopathological analysis demonstrated atrophic epidermis with flat rete ridges. The dermis exhibited islands of basaloid follicular epithelial cells with peripheral palisading and the presence of keratin cysts. There were no malignant features. Based on these findings, the diagnosis of trichoepithelioma was confirmed (**Figure 2**).

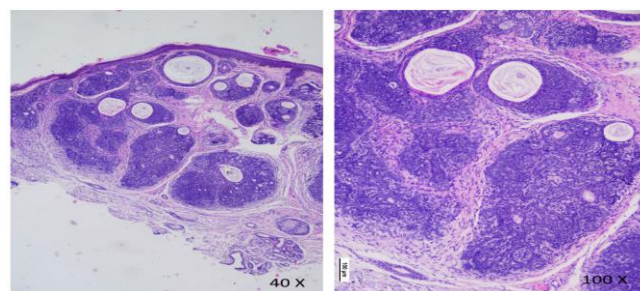


Figure 2. Shows a tissue piece coated with atrophic skin epidermis with flat rete ridge. The dermis showed proliferation of hair follicle epithelial cells forming islands with palisading edges accompanied by keratin cysts.

Therapeutic intervention involved complete excision of the lesion, intraoperative view immediately after total excision of the lesion using an elliptical excision technique under local anesthesia. Immediate postoperative view after primary closure with interrupted non-absorbable sutures, followed by oral clindamycin 300 mg three times daily and topical wound care. Gross specimen of the excised lesion sent for histopathological examination, later identified as trichoepithelioma. (**Figure 3**). On follow up, Day 1 post-surgical appearance showing well-approximated wound edges with mild erythema and minimal edema. Day 3 follow-up demonstrating progressive reduction of local inflammation and intact sutures without signs of infection. Day 7 showing satisfactory wound healing with early signs of epithelialization and no dehiscence or hypertrophic scarring. Serial dermatological evaluations postoperatively showed good wound healing with no signs of recurrence. The patient remained stable, and cosmetic outcomes were satisfactory (**Figure 4**).

This case highlights the importance of differentiating trichoepithelioma from other adnexal tumors such as epidermoid cysts. Despite overlapping clinical features, histopathological evaluation is essential for definitive diagnosis. Early recognition and appropriate excision prevent unnecessary concerns and ensure optimal outcomes in benign cutaneous tumors.



Figure 3. Clinical and Surgical Stages of Lesion Excision on the nose. (A) Preoperative appearance (B) Intraoperative view. (C) Immediate postoperative view. (D) Gross specimen identified as TE.



Figure 4. Postoperative Follow-Up of Surgical Site on the Nose. (A) Day 1 post-surgical appearance. (B) Day 3 follow-up. (C) Day 7 showing satisfactory wound healing.

DISCUSSION

Trichoepithelioma (TE) is benign adnexal neoplasm arising from follicular germinative cells, predominantly affecting facial regions. The clinical manifestation, especially in solitary forms, can resemble several other cutaneous tumors such as basal cell carcinoma (BCC), syringoma, or epidermoid cysts, posing a significant diagnostic challenge in routine dermatological practice⁷. In the presented case, the patient exhibited a solitary, skin-colored nodule on the nasal area that had slowly increased in size over the course of a year without ulceration, pain, or spontaneous bleeding. Such features, though typical for TE, are often underrecognized, especially in settings lacking advanced histopathological or dermoscopic diagnostics.

Differential diagnosis with epidermoid cysts is particularly challenging as both entities may present as well-demarcated nodular lesions located on the face. Epidermoid cysts, however, generally exhibit a central punctum, are compressible, and may release keratinous material upon rupture. Histologically, they consist of a stratified squamous epithelium lining and laminated keratin content, in contrast to the basaloid cell proliferation with follicular differentiation and keratin-filled cysts found in TE⁸. In the case described, the absence of punctum or discharge prompted further investigation, reinforcing the importance of not relying solely on clinical features.

Dermoscopy and histopathological analysis were pivotal in establishing a definitive diagnosis. The dermoscopic features included milia-like cysts and arborizing vessels, findings frequently associated with TE and useful in ruling out malignant conditions such as BCC⁹. Histopathological analysis confirmed the diagnosis by identifying basaloid cell islands with peripheral palisading and keratin cysts, without signs of atypia or malignancy^{7,9}.

Management of TE typically involves surgical excision, especially for solitary lesions with cosmetic or symptomatic concerns. The patient underwent successful excision with favorable wound healing and no signs of recurrence observed during follow-up. This aligns with existing literature suggesting excision is curative in isolated TE cases¹⁰. In contrast, treatment of epidermoid cysts may vary from observation to excision, particularly in inflamed or cosmetically bothersome lesions⁸.

This case underscores the importance of an integrated diagnostic approach involving detailed clinical assessment, dermoscopic examination, and confirmatory histopathology to differentiate between TE and other benign or malignant adnexal tumors.

Increased awareness among clinicians regarding the overlapping clinical features is essential, particularly

in primary care or low-resource settings where access to biopsy may be limited^{7,9}.

In conclusion, although TE and epidermoid cysts are benign, accurate diagnosis is crucial to avoid overtreatment or misdiagnosis, especially with malignancies such as BCC. This case highlights the nuanced but clinically significant differences between these lesions and advocates for continued education and diagnostic vigilance^{7,10}.

CONCLUSION

Trichoepithelioma and epidermoid cyst, while both benign and often presenting as similar-appearing facial nodules, require careful clinical, dermoscopic, and histopathological evaluation to ensure accurate diagnosis. In this case, the integration of dermoscopy and histopathology confirmed trichoepithelioma and excluded other differential diagnoses such as epidermoid cyst or BCC. Prompt surgical excision yielded favorable outcomes. This case underscores the critical need for accurate diagnostic evaluation to prevent misdiagnosis and reinforces the pivotal role of histopathological examination as the definitive method for distinguishing adnexal tumors.

DECLARATIONS

ACKNOWLEDGMENTS

Data availability statement

The data used to support the findings of this study are included within the article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this case report.

Consent

Written informed consent was obtained from the parent's patient for submission and publication of this case report and accompanying images.

Conflict of interest

none declared.

REFERENCES

1. Zarea I, Doss N, Kort R, Mokni M. Trichoepithelioma: Clinical features and histologic variants. *Ann Dermatol Venereol*. 2020;147(3):201–207.
2. Tolkachjov SN, Comfere NI, Speicher PJ, Brewer JD. Trichoepithelioma: A Clinical and Histopathologic Review. *Dermatol Surg*. 2021;47(8):1114–1121.
3. Jha AK, Senapati S, Tiwary AK, Dey RK. Epidermoid cysts: A clinicopathological study of 100 cases. *J Family Med Prim Care*. 2020;9(1):170–174.
4. Kumari R, Manoharan M, Srinivasan S. Differentiating Trichoepithelioma from Basal Cell Carcinoma: A Diagnostic Challenge. *Indian Dermatol Online J*. 2023;14(2):233–236.
5. Müller CSL, Pföhler C, Vogt T. The histological spectrum of trichoepithelioma: diagnostic pitfalls and clinical relevance. *J Cutan Pathol*. 2020;47(9):785–792.
6. Verzi AE, Rodriguez Bandera AI, Garcia-Hernandez MJ. Dermoscopy of trichoepitheliomas: a comparative analysis with other facial adnexal tumors. *Skin Res Technol*. 2022;28(3):497–503.
7. Dhingra N, Sahoo R, Khurana A. Solitary trichoepithelioma mimicking basal cell carcinoma: a diagnostic dilemma. *Indian J Dermatol*. 2021;66(2):203–205.
8. Kandhari R, Bansal A, Saluja G. Histopathological study of epidermoid cysts: A diagnostic approach. *J Clin Diagn Res*. 2020;14(7):EC01–EC03.
9. Wang L, Li Y, Wang J. Dermoscopy in the diagnosis of adnexal tumors: distinguishing features of trichoepithelioma and basal cell carcinoma. *Dermatol Pract Concept*. 2022;12(3):e2022083.
10. Park SW, Kim TH, Lee SE. Surgical outcomes of facial trichoepithelioma: A retrospective case series. *Ann Dermatol*. 2021;33(4):355–359.