RESEARCH PAPER

STEATOCYSTOMA SIMPLEX OF THE SCALP: A CASE REPORT

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ABSTRACT
Background: Steatocystoma simplex is a rare, benign dermal cyst originating from the pilosebaceous duct junction. Unlike steatocystoma multiplex, the simplex variant presents as a solitary lesion. Scalp-specific cases are exceedingly rare in the literature. Its clinical resemblance to other cutaneous cysts necessitates histopathological confirmation.
Case Presentation: A 37-year-old male presented with a painless, slow-growing scalp swelling of one year duration. Surgical excision was performed under a clinical diagnosis of sebaceous cyst. Histopathological examination demonstrated a cyst wall lined by stratified squamous epithelium lacking a granular layer, with a sawtooth luminal pattern and sebaceous gland lobules abutting the epithelium — confirming Steatocystoma simplex.
Conclusion: Steatocystoma simplex of the scalp is an exceedingly rare entity that mimics common cutaneous cysts. Accurate diagnosis depends on histopathological evaluation. Complete surgical excision is curative, with no risk of recurrence or malignant transformation.
Keywords: Steatocystoma simplex, sebaceous duct cyst, scalp cyst, cutaneous cyst, histopathology
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1. Introduction

Steatocystoma simplex is a rare benign cutaneous cyst arising from the sebaceous duct of the pilosebaceous unit, first described by Brownstein in 1982.[1] It is distinct from steatocystoma multiplex, which is associated with autosomal dominant inheritance and mutations in the *KRT17* gene.[2] While the multiplex form features numerous small cysts over the trunk and axillae, the simplex variant presents as a solitary lesion without systemic or familial associations.[3] Clinical differentiation from epidermal inclusion cyst, trichilemmal cyst, or dermoid cyst is unreliable, making histopathological examination essential for definitive diagnosis. We report a scalp case confirmed on histopathology.

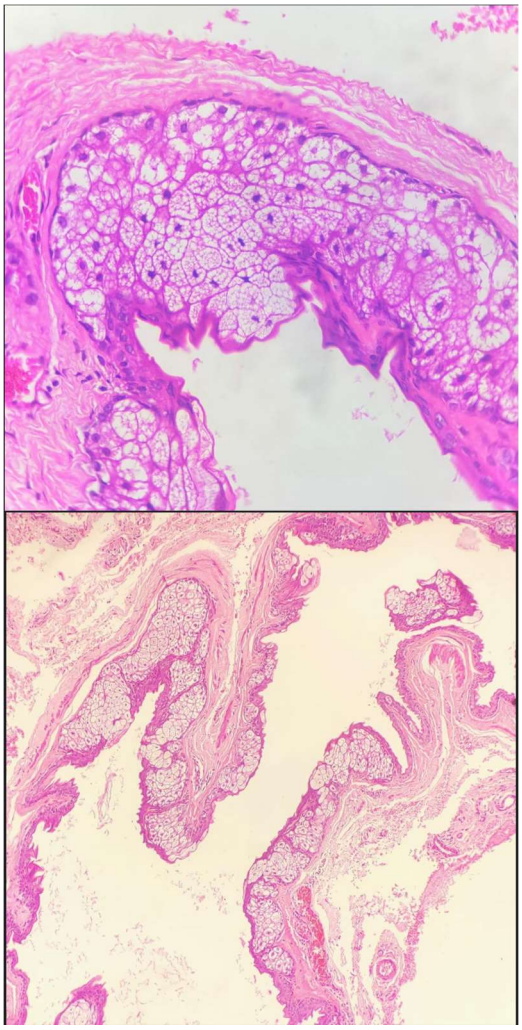
2. Case Report

A 37-year-old male presented with a painless, slow-growing scalp swelling of one year. No discharge, ulceration, or tenderness was noted. Family history was unremarkable. Local examination revealed a single, well-defined, soft to firm, non-tender, subcutaneous nodule that was freely mobile, with normal overlying skin and no punctum or lymphadenopathy. A provisional diagnosis of sebaceous cyst was made, and surgical excision was performed under local anaesthesia.

Gross Examination: Grey-brown, soft to firm membranous tissue measuring 1.5 × 0.5 × 0.5 cm with smooth inner surface and 0.5 cm maximum wall thickness.

Microscopic Examination: The cyst wall is lined by thinned-out stratified squamous epithelium lacking a granular layer. A characteristic sawtooth intraluminal folding pattern was noted. Sebaceous gland lobules abutted the cyst wall epithelium — the hallmark of steatocystoma. The stroma was fibrocollagenous with hair follicles and scattered capillaries. Negative for dysplasia or malignancy.

Image 1 (left): Cyst wall lined by stratified squamous epithelium lacking a granular layer with sebaceous gland lobules abutting the epithelium (H&E, ×100).
Image 2 (right): Sawtooth intraluminal folding pattern on a fibrocollagenous stroma with hair follicles (H&E, ×40).



Final Histopathological Diagnosis: Steatocystoma simplex — "cyst over scalp." The postoperative period was uneventful, with complete wound healing and no recurrence at follow-up.

3. Discussion

Steatocystoma simplex is a benign cystic hamartoma of the pilosebaceous unit classified under follicular cysts in the WHO classification (ICD-10: L72.2).[1,3,6] Scalp-specific cases are rare, with fewer than five well-documented reports.[7] Unlike steatocystoma multiplex, which has a genetic basis (*KRT17* mutations), the simplex form arises sporadically.[2] Our patient had no relevant family history which is, consistent with the sporadic nature of the lesion.

Key differential diagnoses for a scalp cyst include epidermal inclusion cyst, trichilemmal cyst, dermoid cyst, and lipoma.[4,5] Lipoma is an important differential: a benign mesenchymal tumor of mature adipocytes enclosed in a thin fibrous capsule, presenting as a soft, compressible, lobulated, non-transilluminant swelling without any cystic component or skin appendage connection — distinguishing it histologically from steatocystoma. Epidermal cysts show a well-formed granular layer and lamellated keratinous content — features absent in steatocystoma. Trichilemmal cysts show outer root sheath-type epithelium with abrupt keratinization but lack the characteristic sebaceous lobules.[4] Dermoid cysts contain multiple skin appendages within their walls.

The histopathological features in our case were pathognomonic: stratified squamous epithelium without a granular layer, sawtooth intraluminal folding, and sebaceous lobules directly abutting the cyst wall on a fibrocollagenous stroma.[3,9] No atypia or malignancy was identified. Complete surgical excision is curative; treatments used for the multiplex form (CO_2 laser, isotretinoin) are not applicable here. Histopathological examination of all excised scalp cysts is essential to avoid diagnostic errors.

Table 1: Different differential diagnosis of Steatocystoma simplex.[9]

Condition	Age and Gender	Clinical Features	Site	Investigations (HPE)
Steatocystoma simplex				
Steatocystoma multiplex	Adolescence to early adulthood; slight male predominance	Multiple dermal cysts (0.5 – 2 cm), soft to firm, smooth, mobile nodules	Chest, neck, axilla	Cyst located in dermis lined by stratified squamous epithelium with no granular layer, sebaceous gland attached to cyst wall
Dermoid cyst	Children; no gender predilection	Asymptomatic, pale, flesh-colored, pearly, dome-shaped, firm,	Head and neck region	Wall lined by stratified squamous epithelium; lumen may

Condition	Age and Gender	Clinical Features	Site	Investigations (HPE)
		deep-seated nodule		contain hair follicles, sebaceous and eccrine glands
Epidermoid or infundibular cyst	Young to middle-aged; no sex predilection	Slow-growing, yellowish/white, firm, smooth, dome-shaped; central keratin-filled punctum	Scalp, face, neck, upper trunk	Lined by stratified squamous epithelium with granular layer; laminated keratinous content
Trichilemmal or pilar cyst	More common in middle-aged women	Smooth, mobile, firm, rounded; no punctum; may become tender and rupture if infected	Scalp	Lined by squamous epithelium with peripheral palisading; no granular layer; homogenous eosinophilic content with cholesterol clefts

4. Conclusion

Steatocystoma simplex of the scalp is an exceedingly rare benign cutaneous cyst that closely resembles other common cystic lesions clinically. The definitive diagnosis of this entity rests on characteristic histopathological features. Complete surgical excision remains curative, with no risk of malignant transformation. This case highlights the importance of submitting all excised cutaneous cysts for histopathological examination, as clinical diagnosis alone is insufficient to differentiate steatocystoma simplex from other scalp cysts.

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