

CASE REPORT

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Postauricular dermoid cyst: a rare lesion in an extremely rare location

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Abstract

Background: Dermoid cysts are benign lesions commonly seen in the body's midline, such as the orbit, oral cavity, and nose. They are rare in the head and neck and exceptionally rare in and around the auricle.

Case presentation: A case of postauricular dermoid cyst in a 28-year-old female patient is reported. The clinical features, diagnosis, and management of this rare clinical condition are reviewed.

Conclusion: A postauricular dermoid cyst is an extremely rare clinical condition; however, it should be considered in the differential diagnosis of any cystic lesion around the auricle.

Keywords: Cyst, Dermoid, Postauricular, Rare, Region

Background

A cyst is defined as a closed abnormal sac with a distinct wall that may contain a liquid, semi-liquid, or gaseous material, and it is differentiated from an abscess by the absence of pus accumulation [1].

Dermoid cyst is an uncommon benign lesion in the head and neck region [2]. Head and neck dermoid cysts constitute about 7% of all dermoid cases [3]. Dermoid cysts are described as soft, cystic, unilocular, and moveable lumps [4]. They commonly have no symptoms unless they get infected [4]. The presence of skin adnexal features such as hair follicles and sebaceous glands, as well as the squamous epithelium, characterizes the dermoid cysts [5]. Dermoid cysts are rare in the head and neck, and they are extremely rare in the post-auricular region with only very few cases reported in the literature [5]. The treatment of choice for a dermoid cyst is complete surgical excision to prevent a recurrence. The prognosis is excellent without further complications.

Case presentation

A 28-year-old female patient with no previous medical illnesses presented to the otorhinolaryngology clinic with a right postauricular swelling for about 2 years. She had no symptoms of pain, fever, discharge, or hearing impairment; no history of recent ear infection; and no history of postauricular trauma or surgery. The patient denied weight loss or night sweating. Personal and family history were unremarkable.

On examination, the patient was well-looking with normal vital signs. Right ear examination revealed a 2 × 2 cm well-defined, soft, cystic, non-tender swelling in the postauricular region with no signs of acute inflammation. There was no sinus, fistula, scar, or other skin abnormalities. The right auricle, external auditory canal, and tympanic membrane were normal. Examination of the throat, nose, left ear, and neck was unremarkable.

Complete blood count, ESR, renal function test, and serum electrolytes all were within normal limits. Fine needle aspiration cytology result of the right postauricular cyst aspirate was nonconclusive. For diagnostic and therapeutic indications, the patient underwent complete surgical excision of the right postauricular cyst under local anesthesia (Figs. 1 and 2). Gross examination of the excised specimen showed a tuft of hair inside the cyst cavity (Fig. 3). Histopathological

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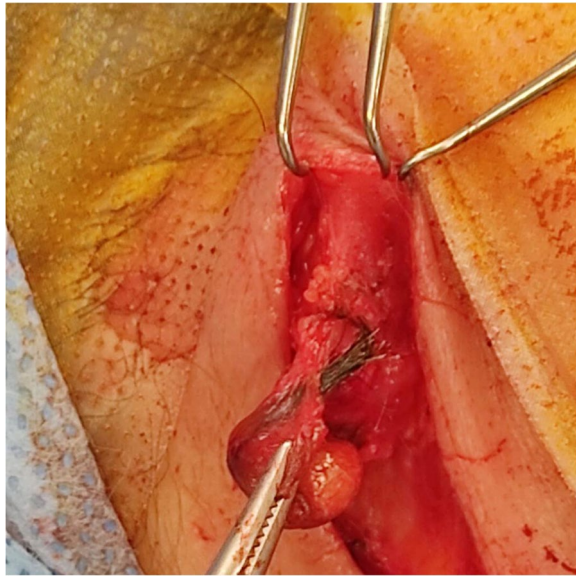


Fig. 1 Intraoperative photo clearly demonstrating a tuft of hair inside the cyst



Fig. 3 The excised cyst wall with a tuft of hair inside the cyst

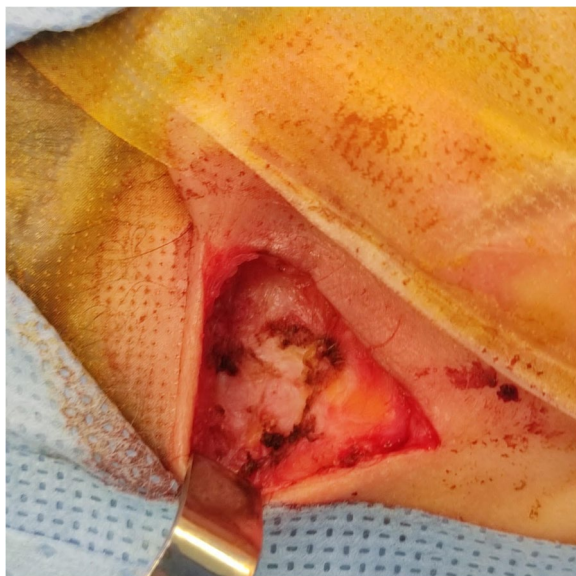


Fig. 2 Intraoperative photo demonstrating complete excision of the cyst

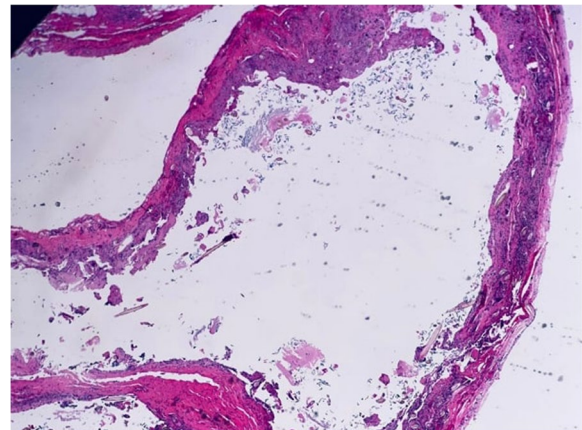


Fig. 4 Hematoxylin and eosin-stained histopathological picture showing a keratin-filled cyst lined by stratified squamous epithelium with a hair shaft

examination confirmed the diagnosis of a dermoid cyst (Figs. 4 and 5).

The patient had a smooth postoperative recovery, and there was no evidence of recurrence after a follow-up period of 15 months (Fig. 6).

Discussion

In general, cystic malformations are classified into epidermoid, dermoid, and teratoid cysts. These are lined with stratified squamous epithelium which is derived from the ectodermal component of the germ layer. Dermoid cyst is characterized by the presence of skin adnexal structures such as hair follicles and sebaceous glands along with the squamous epithelium. In contrast, the epidermoid cyst only has a simple squamous epithelium with no adnexal structures while the teratoid cyst is characterized by the presence of other abnormal tissues derived from all three germinal layers such as muscles, bone, and cartilage [6].

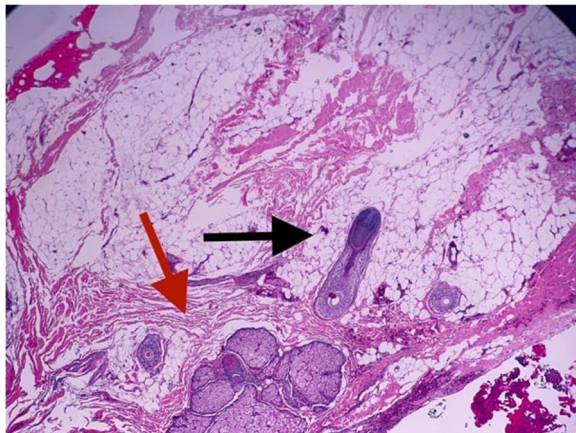


Fig. 5 Hematoxylin and eosin-stained histopathological picture in which the black arrow shows a hair shaft and the red arrow shows a sebaceous gland



Fig. 6 Postoperative photo taken 15 months post-surgical excision of the cyst demonstrating no evidence of recurrence. The white arrow points to the surgical scar

The exact histopathological mechanism of dermoid cyst formation remains mostly unknown; however, the following theories have been postulated regarding the origin of dermoid cysts: (i) there is congenital inclusion of dermal and epidermal elements of germ layers in deeper tissues along the embryonic lines of fusion, (ii) implantation of dermal and epidermal elements of surface epithelium which may proliferate and keratinize can occur after birth due to trauma, and (iii) growth can occur from the rest of the totipotent stem cells displaced from the blastomere [7].

Head and neck dermoid cysts are considered rare. About 7% of all dermoid cyst cases occur in this region, and they are mostly found in the lateral eyebrow followed

by the submental region and the floor of the mouth [8]. It is extremely rare to involve the auricle or the postauricular region. In one study done by New and Erich, they did not report any single case of postauricular dermoid cyst in their analysis of 1495 patients [9].

Table 1 summarizes some of the most recently reported cases of postauricular dermoid cysts. It clearly shows that the most common presenting symptom is a painless lump behind the ear. It also demonstrates that this rare clinical entity affects both males and females in any age group. After an extensive search in the literature and to the best of our knowledge, this case is the first case of postauricular dermoid cyst reported from the Kingdom of Saudi Arabia.

Although the most common presentation of the postauricular dermoid cyst as seen in our case is painless swelling, it may get inflamed and become painful [10, 11].

Postauricular dermoid cyst usually takes a longer period of time to be noticed by the patients due to its location which makes it unnoticeable by the patients and because of its painless character. Most of the patients seek medical care for cosmetic purposes [12].

Fine needle aspiration cytology is helpful to differentiate the dermoid cyst from other lesions such as sebaceous cyst, lymphadenopathy, lipoma, and hemangioma [13]. Diagnosis of the dermoid cyst is usually established by the characteristic histopathological features including the stratified squamous epithelium and the adnexal structures.

Intracranial extension is common with midline or scalp lesions, and due to this potential, the radiological imaging should be done before any biopsy or intervention [14]. Surgical excision is the recommended treatment of choice for dermoid cysts in any location [15]. Early surgical intervention is preferred to establish the diagnosis and to have a better cosmetic outcome [16, 17].

Complete surgical excision with removal of all cyst walls and contents is essential to prevent local recurrence [16]. Infected cyst has a greater risk of recurrence reaching 20% [18].

The overall prognosis for patients with a dermoid cyst is excellent, especially when there is no intracranial or intraspinal extension [16]. Malignant transformation of a dermoid cyst is extremely rare; however, it has been reported in some cases [19, 20].

Conclusion

Although dermoid cyst of the postauricular region is an extremely rare condition, it should be considered in the differential diagnosis of postauricular lumps. Complete surgical excision is mandatory to prevent a recurrence.

Table 1 Summary of the most recently reported cases of postauricular dermoid cysts

No.	Year	Author	Reported case country	Patient's age	Patient's gender	Presenting symptoms	Duration of symptoms	Treatment	Outcome
1.	2022	Kharche et al.	India	15 years	Male	Left postauricular swelling	Since birth, increased size over the last 2 years	Surgical excision	No recurrence for 6 months
2.	2020	Jeong, Junhui et al.	Korea	31 years	Female	Left postauricular painless swelling	10 years	Surgical excision	No recurrence for 9 months
3.	2020	Bhushan Kathuria et al.	India	30 years	Female	Left postauricular swelling	6 months	Surgical excision	No recurrence for 6 months
4.	2018	Alpay Duran	Turkey	21 years	Male	Right postauricular lump	Since childhood	Surgical excision	Not mentioned
5.	2018	Byeon, Jeyeon et al.	Korea	19 years	Male	Cystic mass behind the ear	Since childhood	Surgical excision	Not mentioned
6.	2018	Abdullahi Mohammed	Nigeria	20 years	Male	Left postauricular mass	2 years	Surgical excision	Not mentioned
7.	2017	Awasthi Nidhi	India	25 years	Male	Left postauricular painless swelling	2 years	Surgical excision	No recurrence for 2 months
8.	2014	Horikiri et al.	Japan	6 years	Female	Right postauricular mass	4 years	Surgical excision	No recurrence for 9 months
9.	2013	Rachana Tiwari, Vaishali Sangole	India	18 years	Female	Right postauricular swelling	6 years with a history of previous surgery	Surgical excision	Not mentioned
10.	2008	E. Phelan, M. Colreavy	Ireland	12 years	Male	Left postauricular swelling	18 months	Surgical excision	Not mentioned

Abbreviation

ESR: Erythrocyte sedimentation rate.

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Authors' contributions

DA: editing and finalization of the manuscript. AA: draft manuscript formulation. OA: technical support and writing the finalized manuscript. WA: scientific data collection. All authors have read and approved the final manuscript.

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Availability of data and materials

All data generated or analyzed in this scientific material are included in this published report and are available from the corresponding author on reasonable request.

Declarations**Ethics approval and consent to participate**

The Alhada Armed Forces Hospital's research and ethical committee approved this case report.

Consent for publication

Written consent was obtained from the patient.

Competing interests

The authors declare that they have no competing interests.

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References

1. Dive AM, Khandekar S, Moharil R, Deshmukh S (2012) Epidermoid cyst of the outer ear: a case report and review of literature. *Indian J Otol* 18(1):34
2. Masaru H, Kazuki U, Motoi K. Dermoid cyst of the auricle: a rare manifestation. *BMJ Case Rep*. 2014;2014:bcr 2014205826.
3. Shankar DU, Sarmaik DA, Kumari DR (2020) Rare occurrence of dermoid cyst in postauricular region: a case report. *Int J Sci Res Publ* 10(05):509–511
4. Jeong J, Choi YJ, Lee K, Choi HS (2020) Dermoid cyst in the postauricular area. *J Craniofacial Surg* 31(7):e664–e665
5. Kathuria B, Dhingra H, Arora M, Rana D (2020) Post-auricular dermoid cyst uncommon lesion at an uncommon site. *Int J Otorhinolaryngol Head Neck Surg* 6(7):1374–1376
6. Jham BC, Duraes GV, Jham AC, Santos CR (2007) Epidermoid cyst of the floor of the mouth: a case report. *J Can Dent Assoc* 73:525–528
7. Yogesh TL, Anjani Kumar J, Devatwisha G, Aggi Susan S (2016) Post-auricular dermoid cyst: a case report. *IOSR J Dental Med Sci* 15(6):99–102 [[Google Scholar](#)]
8. Batsakis JG (1979) Teratomas of the head and neck. In: *Tumours of the head and neck*, 2nd edn. Lippincott Williams and Wilkins, Baltimore, pp 226–232

9. New GB, Erich JB. Dermoid cyst of head and neck. *Surg Gynecol Obstet.* 937;65:48–55.
10. Cho Y, Lee DH (2017) Clinical characteristic of idiopathic epidermoid and dermoid cyst of the ear. *J Audiol Otol* 21:77–80
11. Al-Khateeb TH, Al-Masri NM, Al-Zoubi F (2009) Cutaneous cysts of the head and neck. *J Oral Maxillofac Surg* 67:52–57
12. Mohammed A, Abdullahi K (2018) Postauricular epidermoid and dermoid cysts in adults. *Egypt J Otolaryngol* 34(4):213–216
13. De Soa BA, Dey C, Carver N (2003) A rare case of dermoid cyst behind the ear. *Plast Reconstr Surg.* 112(7):1972
14. Linkov G, Kanev PM, Isaacson G (2015) Conservative management of typical pediatric postauricular dermoid cysts. *Int J Pediatric Otorhinolaryngol* 79:1810–1813
15. Cao L, Wang Y, Zhao L, Hu X, Cai C (2020) Congenital dermoid inclusion cyst over the anterior fontanel in Chinese children. *Clin Dysmorphol* 29(2):81–85 [Medline]
16. Orozco-Covarrubias L, Lara-Carpio R, Saez-De-Ocariz M, Duran-McKinster C, Palacios-Lopez C, Ruiz-Maldonado R (2013) Dermoid cysts: a report of 75 pediatric patients. *Pediatric Dermatol.* 30(6):706–711 [PubMed]
17. Prior A, Anania P, Pacetti M, Secci F, Ravegnani M, Pavanello M, Piatelli G, Cama A, Consales A (2018) Dermoid and epidermoid cysts of scalp: case series of 234 consecutive patients. *World Neurosurg.* 120:119–124 [PubMed]
18. Dabholkar JP, Patole AD, Sheth AS, Saaj R (2003) Congenital cystic lesions in head and neck. *Indian J Otolaryngol Head Neck Surg.* 55:128–130
19. Tsugu H, Fukushima T, Hayashi S, Iwaasa M, Matsuda T (2001) Squamous cell carcinoma arising in an intracranial dermoid cyst. *NeurologiaMedico Chirurgica.* 41(4):213–216
20. Devine JC, Jones DC (2000) Carcinomatous transformation of a sublingual dermoid cyst. *Int J Oral Maxillofacial Surg.* 29(2):126–127

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