CASE REPORT

Dermoid cyst of the auricle: a rare manifestation

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Accepted 23 October 2014

SUMMARY

Cases of dermoid cysts of the auricle are presumed to be quite rare. We report such a case and make references to 10 previously reported cases. It is important to treat a tumour in the auricular area at an early stage to prevent it from transforming into malignancy.

BACKGROUND

A dermoid cyst is generally considered to be a congenital lesion that occurs in childhood. The characteristic clinical picture is a small, round and slowly growing asymptomatic solitary subcutaneous cystic mass present from birth, located in the lateral aspect of the upper eyelid. Pollard *et al*¹ reported 231 dermoid cases, 29.7% and 17% of which were found in the eyebrow and neck area, respectively. On the other hand, a dermoid cyst of the auricle is thought to be very rare. We treated a patient with an auricular dermoid cyst and present the case with a brief review of past reports.

CASE PRESENTATION

A 6-year-old girl presented to us with a gradually enlarging mass in the right postauricular area, which had been developing for 4 years. There was no familial history. Physical examination findings revealed a 22×20 mm soft mass fixed to the underlying tissue (figure 1). A radiological examination with MRI clarified that the mass was a subcutaneous cyst not communicating with the intracranial space in the postauricular area (figure 2). Surgical excision was performed under general anaesthesia. During the procedure, a large adhesion was found between the mass and the periosteum (figure 3), while there was no evidence of prolonged intraosseous infusion.

Figure 1 Preoperative view of postauricular dermoid cyst.

INVESTIGATIONS

Pathologically, the cyst walls were lined with a layer of keratinised squamous epithelium, while the inner surface was lined with keratin lamella, and contained hair follicles and sebaceous glands (figure 4A–C).

DIFFERENTIAL DIAGNOSIS

The most important differential diagnosis of a post-auricular cyst is an epidermal cyst. Histopathological findings show that while both cysts are lined by epidermis, the dermoid cyst also possesses hyperplastic sebaceous glands and hair follicles in the wall.

OUTCOME AND FOLLOW-UP

Nine months after the operation, healing had progressed well and no recurrence was noted (figure 5).

DISCUSSION

A dermoid cyst is a pathological type of congenital or acquired cyst. As with other types of epidermal cysts, it is lined with epidermis, though it can be distinguished from a simple epidermal cyst by the presence of all skin elements.² A congenital dermoid cyst may arise as a result of intrasutural sequestration during bone development.³ Notably, a dermoid cyst in the postauricular area may have arisen on the dividing line between the squamous part of the temporal and parietal bones.

Congenital dermoid cysts in the auricular area are considered to be very rare.^{3–11} New and Erich classified dermoid cysts of the head and neck into four types: (1) cysts in the eyes and orbits, (2)

Figure 2 MRI imaging revealing an encapsulated tumour on the temporal bone.

To cite: Horikiri M, Ueda K, Kato M. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2014-205826

Figure 3 Intraoperative view of dermoid cyst during removal from posterior auriculocephalic sulcus.

those in the nose area, (3) those in the floor of the mouth, and submental and submaxillary regions, and (4) a miscellaneous group. However, they found no such occurrence in the auricular area in a review of 1495 cases,¹² which seems to indicate its

Figure 5 Nine months after surgery, no recurrence was seen.

rarity. On the other hand, Pollard *et al*¹ reported a 9.9% prevalence rate in the auricular area in a total of 231 cases, though the precise locations were not noted. Furthermore, McAvoy and Zuckerbraun reported a rate of 3% (1 of 33 cases)² and Taylor *et al*¹³ a rate of 5.5% (10 of 183 cases). These reports suggest that congenital dermoid cysts may not be as rare as previously thought. In addition, the number of surgical procedures regarding these cysts may be increasing,¹⁴ thus the frequency of occurrence in the auricular area, such as that in the present case, should be re-evaluated.

All case reports of congenital dermoid cyst including the present are shown in table 1. Almost all lesions tend to be perceived in childhood. However, some cases are treated after a long interval from onset. Patients with dermoid cysts are unable to see them in their own auricular area and tend not to complain of pain due to them, therefore these cysts take longer to be noticed than do other benign tumours.

Figure 4 Dermoid cyst with sebaceous glands and hair follicles (H&E, original magnification $\times 40$) (A). Hair follicle in dermoid cyst (H&E, original magnification $\times 200$) (B). Sebaceous gland in dermoid cyst (H&E, original magnification $\times 200$) (C).

Table 1 Past reports of congenital dermoid cysts in auricular region (Ref. 3–11, and our cases)

Number	Year	Author	Age (years)	Sex	Region	Size (mm)	Duration (years)
1	1974	Pap	NA	NA	Right, auricle	NA	NA
2	1990	Ikeda <i>et al</i>	63	M	Right, posterosuperior aspect of auricle	50×30	NA
3	1990	Ikeda <i>et al</i>	15	M	Left, posterosuperior aspect of auricle	30×20	NA
4	1994	Bauer <i>et al</i>	30	M	Right, posterior surface of auricle	70×50	20
5	1996	Akgüner <i>et al</i>	24	M	Left, postauricular sulcus	34×24	24
6	2000	Samper <i>et al</i>	39	M	Auriculotemporal area	30×20	35
7	2001	Meagher and Morrison	8	M	Right, posterior auriculocephalic sulcus	NA	8
8	2003	De Souza <i>et al</i>	39	M	Right, postauricular	NA	35
9	2007	Srivastav and Srivastav	18	M	Left, behind ear	NA	2
10	2011	Ho <i>et al</i>	54	M	Right, postauricular lump	30×30	50
11	2014	Horikiri <i>et al</i>	6	F	Right, postauricular sulcus	22×20	4

F, female; M, male; NA, data not available.

Recently, transformation of a subcutaneous dermoid cyst to a squamous cell carcinoma was reported;^{15–18} many such cases present with poor prognosis.^{15–17} The cause of this malignant transformation has yet to be revealed. However, prolonged chronic inflammation is indicated as a factor.¹⁶ Although the postauricular area can be stimulated mechanically by the frame of a pair of glasses, it is not considered important. For this reason, lesions around the postauricular area tend to be left unnoticed for a long time. Considering the high malignancy in such cases, it is important to investigate and treat this type of lesion at an early stage.

Learning points

- ▶ A dermoid cyst is not a rare lesion, but its occurrence in the postauricular area is very rare.
- ▶ Patients with dermoid cysts are unable to see them in their own auricular area and tend not to complain of pain due to them, therefore these cysts take longer to be noticed than do other benign tumours.
- ▶ Lesions around the postauricular area are often left unnoticed for a long time. Considering the transformation to malignancy, it is important to investigate and treat this type of lesion at an early stage.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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