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David Kereh

Division of Oncology Surgery, Departement of Surgery, Faculty of Medicine Universitas Hasanuddin, Makassar, dkereh@gmail.com

Septiman Septiman

Division of Oncology Surgery, Departement of Surgery, Faculty of Medicine Universitas Hasanuddin, Makassar

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A Rare Case of Giant Epidermal Cyst of The Parietooccipital Region: A Case Reports

David Kereh, Septiman

Division of Oncology Surgery, Department of Surgery, Faculty of Medicine Universitas Hasanuddin, Makassar

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Abstract

Introduction. Epidermal cysts are common benign cutaneous cysts. An epidermal cyst may be classified as a giant epidermal cyst if it exceeds 5 cm. Giant epidermal cysts with a diameter of 5 cm or more are rare but have been reported. The epidermal cyst rarely discloses malignancy. Although rare, a case of malignant change of benign epidermal cyst is possible. We describe here a rare case of a giant epidermal cyst of the parietooccipital region in a 35-year-old man.

Case Illustration. A 35-year-old man was admitted to the hospital with a huge swelling over the scalp for the past 30 years. The swelling was non-tender, cystic, measuring 18x13x 9 cm, and was situated in the parietooccipital region. Skull CT revealed an oval shape, hypodense mass, well defined, in the parietooccipital scalp with no intra-cranial extension. Complete excision of the lesion was carried out. Excision of redundant skin is needed to achieve good aesthetic results. Histopathological examination showed a thin layer of benign stratified squamous epithelium and lamellated keratin debris present in the cyst. There is no sign of malignant transformation.

Conclusions. It can be stated that although epidermal cyst is a slow-growing benign tumor, it can cause diagnostic difficulties when located in the scalp area and when there is a possibility that cranial bones and even intracranial structures are affected by the cyst. CT, MRI or ultrasonography are crucial to determine if the cyst contacts intracranial structures. The histopathology examination should be done to detect malignant transformation.

Keywords: Giant, epidermal, epidermoid, cyst

Introduction

Epidermal cysts, which are also known as epidermoid cysts or epidermal inclusion cysts, are common benign cutaneous cysts,¹ generally asymptomatic, slowly enlarging,² mildly tender, soft to firm masses that rarely reach a size >5 cm.³ An epidermal cyst may be classified as a giant epidermal cyst if it exceeds five cm.¹ Giant epidermal cysts with a diameter of 5 cm or more are rare but have been reported.⁴ These lesions might or might not be adherent to the surrounding soft tissue structures.³ The most frequent site was the face (19-0%) followed by the chest wall (12-41%), thigh (10-74%), gluteal region (8-34%), and scalp (8-26%).⁵ The epidermal cyst rarely discloses malignancy.⁶ A study showed that squamous cell carcinoma, basal cell carcinoma, and Merkel cell carcinoma might develop in epidermal cysts.⁷ Histologically, the epidermal cyst lined by cornified epithelium has a distinct granular layer, and contains lamellated keratin without calcification.⁸ Although some of these cysts result from traumatic inclusion of the epidermis – hence the term epidermal inclusion cyst – the majority probably developed from cystic dilation of the infundibular portion of hair follicles.⁸ We report a rare case of a thirty-five-year-old male with a giant epidermal cyst on the parietooccipital region with bone invasion.

Case Reports

A male of 35 years old worker admitted to the surgical oncology ward, Hasanuddin University Hospital, Makassar, with the massive lump over the scalp for the past 30 years. The

lump was non-tender, cystic, measuring of 18x13x 9 cm, located in the parietooccipital region of the scalp (Fig 1).

Figure. 1. Clinical pictures are showing a a large sized epidermal cyst of the parietooccipital region.

The first noticed off the lump when he was five years of age. It kept on slowly enlarging for thirty years. He was not even able to sleep or lie down on that side — no history of trauma or surgical procedure and no family history of the same entity. In the presentation, the left-sided parietooccipital mass measuring of 18x13x9cm, non-tender, cystic, and located in the parietooccipital region. General status and routine laboratory tests were normal. CT scan revealed an oval shape measuring 18x11x7cm, hypodense, well defined. Erosion of the parietooccipital bone and calcification of mass showed no intracranial extension. (Fig. 2)

Figure 2. CT revealed a hypodense mass, oval shape, measuring 18x 11x7 cm with no intracranial extension.

Complete surgical removal of the lesion carried out through an elliptical incision. Following scalp harvesting, the dissection extended from the subcutaneous layer to the sub-galea plane to expose the mass. After confirming the encapsulation of the mass, it completely excised. It had erosion of some part of the parietooccipital bones. (Fig.3)

Figure 3. Intraoperative findings were showing the erosion of some part of the parietooccipital

We resected the redundant skin that had expanded to accommodate the mass and performed primary closure. The wound was closed in layers. The surgery procedure took about one hour.

The patient discharged a day postoperatively and had no complaint on the third day follow up. The wound healed with no complications, and the stitches removed on the seventh postoperative days (Fig. 4).

Figure. 4 The postoperative outcome was uneventful with no complications.

Histopathological examination showed the tumor with a thin layer of benign stratified squamous epithelium and lamellated keratin debris within the cyst. (Fig.5)

Figure. 5. Epidermal cyst wall with a thin layer of benign stratified squamous epithelium (HE 100x).

Discussion

Although scalp mass is common in daily practice, there is an ignored type of pathology, and less considered before intervening with this potentially troublesome lesion. A careful examination and even radiological assessment should be carried out in selected cases since the external appearance can mislead, mainly when a benign entity is in mind. The aetiology may be evaluated under two headings concerning the site of origin: "superficial" type, including lesions that arise from cutaneous and subcutaneous layer, or "deeper" such as a bone tumor or intracranial pathology. Thus, a clinician should consider this perspective when dealing with a scalp mass, which can be a reflection of clinically significant pathology in the intracranial region.

Epidermoid cysts typically manifest as painless small lumps in hair-bearing areas, particularly the scalp, neck, shoulder, and the back. They are slow-growing lesions and tend to be neglected. The most patient seeks surgical advice when the small cyst is growing like a giant epidermoid cyst. A giant epidermal cyst rarely seen in surgical practice. Pathologically, the epidermal cyst lined by cornified epithelium has a distinct granular layer and contains lamellated keratin without calcification.⁸ There are three types of the lesion, namely 1) congenital sequestration of surface ectoderm, 2) occlusion of the pilosebaceous unit, and 3) implantation of epidermal cells into the dermis secondary to a penetrating injury and surgery.⁹

The diagnosis instituted through a careful physical examination, imaging (skull radiographs, CT scan, MRI), and confirmed by pathology. The sonographic of epidermal cyst shows mostly well-circumscribed, mildly echogenic masses confined to the subcutaneous layer. They might show internal linear echogenic reflections, dark clefts, or a hypoechoic rim.^{4,10} On MRI, an intermediate to high T2 signal mass with occasional low signal debris with no central enhancement strengthens the diagnosis.¹⁰ CT scan allows the useful assessment of both skull involvement and intracranial extension and reveals the exact site, limits, and characteristic bone defects of the lesions. The typical CT aspect is a large homogenous hypodense non enhancing mass, with or without calcifications.^{9,11,12}

Although the clinical course of epidermoid cysts referred to as a benign type, rarely, basal cell carcinoma, squamous cell carcinoma, epithelioid carcinoma, and other malignancies have been reported to be associated with these cysts.¹³ For this reason, the treatment of choice is complete surgical removal to

ensure complete removal and prevent the recurrence. For giant epidermal cysts, the excision of redundant skin is needed to achieve good aesthetic results.

In the reported case, it took 30 years to be treated surgically as the subject fear of being sentenced to cancer by the physician. After he bothered in his daily activities, he looked for surgical advice. We do not have any difficulties in diagnosing this patient. It is because of the modalities of diagnostic we have, such as radiology imaging and histopathology examination. On the other hand, when the patient comes to a health facility with a limitation of diagnostic modalities, the doctor may have difficulties to diagnosed and managed it properly. Surgical excision is the primary modality of this case. With a broader margin of removal, we can reduce recurrence risk. Adverse events that could occur after the removal of a giant cyst are necrotic of skin flap, haemorrhage, and infection. In this case, we do not meet any adverse events. Histopathologic examination is necessary for diagnosis. Although rare, a case of malignant change of benign epidermal cyst is possible. The histopathology examination showed no sign of malignancy or malignant degeneration.

Conclusion

Although the epidermal cyst is a slow-growing benign tumor, it may lead to diagnostic difficulties. Primarily when located in the scalp area, and there is a possibility that cranial bones and even intracranial structures are affected by the cyst. Imaging like CT, MRI, or ultrasonography is crucial to determine if the cyst contacts intracranial structures. Surgical removal is the primary modality treatment for epidermal cyst cases.

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