A Rare Case of Facial Multiple Epidermal Cysts: Successfully Treated by Surgical Excision

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Case report

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Abstract

Background Epidermal cysts are common skin tumors that are composed of a keratinocytic cyst wall and central keratin material, which can occur anywhere in the body, especially on the face. However, there are no relevant reports of multiple epidermal cysts coexisting at the same location.

Case presentation Here, we report one rare case of facial multiple epidermal cysts, who underwent sequential resection of all cysts. A 45-year-old male presented with facial multiple masses for over 2 years. Physical examination showed multiple cysts with varied sizes on the face. All cysts were smooth, dome-shaped, freely movable, and some of them were attached to the skin by a central pore. The histopathology revealed cysts in the dermis, the wall of which were composed of stratified squamous epithelium, and the cavity were filled with keratin. Therefore, the patient was diagnosed as facial multiple epidermal cysts.

Conclusions This is the first well-documented case of multiple epidermal cysts on the face. We report this rare case to highlight that although epidermal cysts usually appear single, they may also appear multiple in the same location, especially in those patients with vigorous sebaceous gland function. Surgical excision is the first-line effective treatment for epidermal cysts.

Background

Epidermal cysts are keratin-filled epithelial-lined cysts, which are most commonly located in the area of face, scalp, neck, back and trunk, rarely seen in the area of palms and feet [1]. Epidermal cysts are usually single, and few cases have reported multiple epidermal cysts that occurred at the same site before [2]. Here, we report the first well-documented case of multiple epidermal cysts on the face, and the patient's appearance was corrected by surgical removal.

Case Presentation

A 45-year-old male presented with facial multiple masses for over 2 years. The first mass was found on the right side of cheek, and the patient was not taken seriously. Then, the masses were gradually becoming enlarged, and the number gradually increased, without pain or any other symptoms in the next 2 years. The patient exhibited depression and came to our department due to the negative cosmetic consequences of the facial masses. There was no history of trauma or any previous surgery. He had no other systemic symptoms, and the family history and personal history are nothing special.

Physical examination showed multiple cysts with varied sizes on the face (Fig. 1), ranging from 0.5×0.5cm to 3×3cm, and some of them were fused on the right cheek (Fig. 1B). All cysts were smooth, dome-shaped, freely movable, and some of them were attached to the skin by a central pore.

A cyst excision was done for histopathologic examination, which revealed a cyst in the dermis, the wall of which was composed of stratified squamous epithelium, and the cavity was filled with keratin debris

(Fig. 2B, 2C). We established the diagnosis of epidermal cyst.

Then, the patient underwent sequential excision of the remaining cysts in the next two months (Fig. 2A), which showed the same pattern of histopathological manifestations as the previous one. Hence, we established the final diagnosis of facial multiple epidermal cysts. For the largest cyst, we make a small incision to first squeeze out the contents of the cyst, then separate the cyst wall, and finally lift out the cyst wall. After 2 months of follow-up, the patient's appearance was significantly improved, and all cysts did not recur (Fig. 3).

Discussion

Epidermal cyst is one of the most common benign cutaneous cysts, which usually grows slowly, presented with dome-shaped raised nodules or flat with skin surface. As the tumor grows slowly, most patients came to clinics due to the pressure exerted on surrounding structures, as well as cosmetic problems. The content of epidermal cysts is mainly keratin, a few of which can be accompanied by infection, and quite a few can eventually develop into squamous carcinoma [3, 4]. It has been reported that chronic inflammation caused by repeated rupture of the cyst may resulted in the ossification [5]. Epidermal cysts mostly manifest as masses, but cysts may appear as granulation tissue with foreign-body granulomatous reaction and chronic inflammation when infection and cyst wall rupture occur. Although epidermal cysts tend to occur in an area with abundant pilosebaceous follicles, such as face, scalp, neck, back and trunk, some rare locations, such as vulvar, have also been reported [6]. When blunt, penetrating injury implant epidermal fragments into the dermis, it may also occur in the hairless skin, such as in soles and palms [7].

Although epidermal cysts are common, multiple epidermal cysts at the same site are extremely rare and reported. Our patient showed multiple epidermal cysts on the face, which may be related to the excessive oil secretion caused by the vigorous facial sebaceous gland function. It is sometimes difficult to distinguish epidermal cysts from other cysts only from clinical features, and the specific histopathological findings of epidermal cysts can give a clear diagnosis. The most misdiagnosis is sebaceous cysts.

Surgical excision is the most curative treatment of epidermal cyst. If the cyst wall is not completely removed, the epidermal cyst would recur. Minimal incision or laser is used to remove the epidermal cyst with minimal injury to the skin in recent years [8]. It should be noted that when the epidermal cyst is in the acute inflammation stage, anti-infection treatment is required first, and after the inflammation subsides, the cyst is surgically removed [9]. In our case, we conducted complete surgical resection of cysts and cyst removal through a minor incision to achieve satisfactory therapeutic effect.

Conclusion

In addition to single epidermal cysts, the cysts may also appear multiple in the same location over a period of time. Surgical excision is the first-line effective treatment, and it is important to remove the cyst wall to minimize the risk of recurrence.

Declarations

Ethics approval and consent to participate

Approval for the study was obtained from the institutional review board of Shanghai Tenth People's Hospital.

Consent for publication

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the corresponding author.

Availability of data and materials

We do not wish to share our patient data. Because this is a case report and privacy of this participant should be protected.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

GJ and SY were responsible for study design and concept. WY was involved in data acquisition. YQ revised the manuscript. All authors contributed to the article and approved the submitted version.

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Figures

Figure 1

1A, 1B and 1C showed multiple cysts of different sizes on the face.

Figure 2

2A showed cysts removed during surgery. 2B: Histopathological examination showed a smooth-walled cyst, and filled with keratin flakes. (H&E-stained; original magnification, x40). 2C: Histopathological examination showed the cyst wall were composed by stratified squamous epithelium with a granular layer (H&E-stained; original magnification, x200).

Figure 3

3A-3B and 3C showed postoperative cosmetic result after 2 months.