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SURGICAL REMOVAL OF THE EPIDERMAL INCLUSION CYSTS WITH SQUEEZE TECHNIQUE: CASE REPORT

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ABSTRACT

Epidermal inclusion cysts are common benign cutaneous cysts which arise from hair follicles. These cysts usually present as asymptomatic, small, smooth, firm, round, slow growing swellings on hair bearing areas such as scalp, face, neck and trunk. Epidermal inclusion cysts are easily diagnosed by their clinical features. However, trichilemmal cyst, dermoid cyst, neurofibroma, hemangioma, lipoma and liposarcoma should also be kept in mind in differential diagnosis of cutaneous cystic lesions. As malignant transformation of epidermal inclusion cysts has been reported, histopathological evaluation of epidermal inclusion cysts is mandatory in order to rule out malignancy. Moreover, giant epidermal inclusion cysts with ulceration, rapid growth, resistance to treatment, recurrence and fistula drainage may have malignant potential. Therefore, epidermal cysts should be surgically removed. There are several different types of surgical techniques to remove cutaneous cysts. A proper surgical technique should facilitate the complete removal of the cyst wall to prevent recurrence. In addition, it should provide minimal scarring and a low wound infection rate. Epidermal inclusion cysts can be easily removed surgically with squeeze technique. In this technique, the cyst is squeezed out through a small incision using both index fingers. Thus, the cyst is not ruptured. The squeeze technique allows the cyst capsule to remain intact. Therefore, the risk of wound infection, recurrence and scar formation is minimized. Hereby, we present a 48-year-old male with multiple epidermal inclusion cysts on the scalp treated surgically with squeeze technique.

UDC CODE & KEYWORDS

■ UDC: 6 ■ Epidermal inclusion cyst ■ Squeeze technique ■ Surgery

INTRODUCTION

Epidermal inclusion cysts are common cutaneous and subcutaneous cysts which usually arise on head, neck and trunk as solitary slow growing masses (Makhija, 2014; Baek, Kim, Jung, Sohn & Kwon, 2011). These lesions usually occur in adults between the ages of 30 and 40 (Mote & Shukla, 2011). Epidermal inclusion cysts may occur as a result of trauma, surgery or congenital implantation of epidermis into the dermis (Makhija, 2014). Clinically, epidermal inclusion cysts present as smooth, round, slow growing, asymptomatic, well defined swellings (Mote & Shukla, 2011). These cysts do not cause pain unless they become inflamed (Horoz, Eryılmaz, Özakpınar & Tellioğlu, 2012).

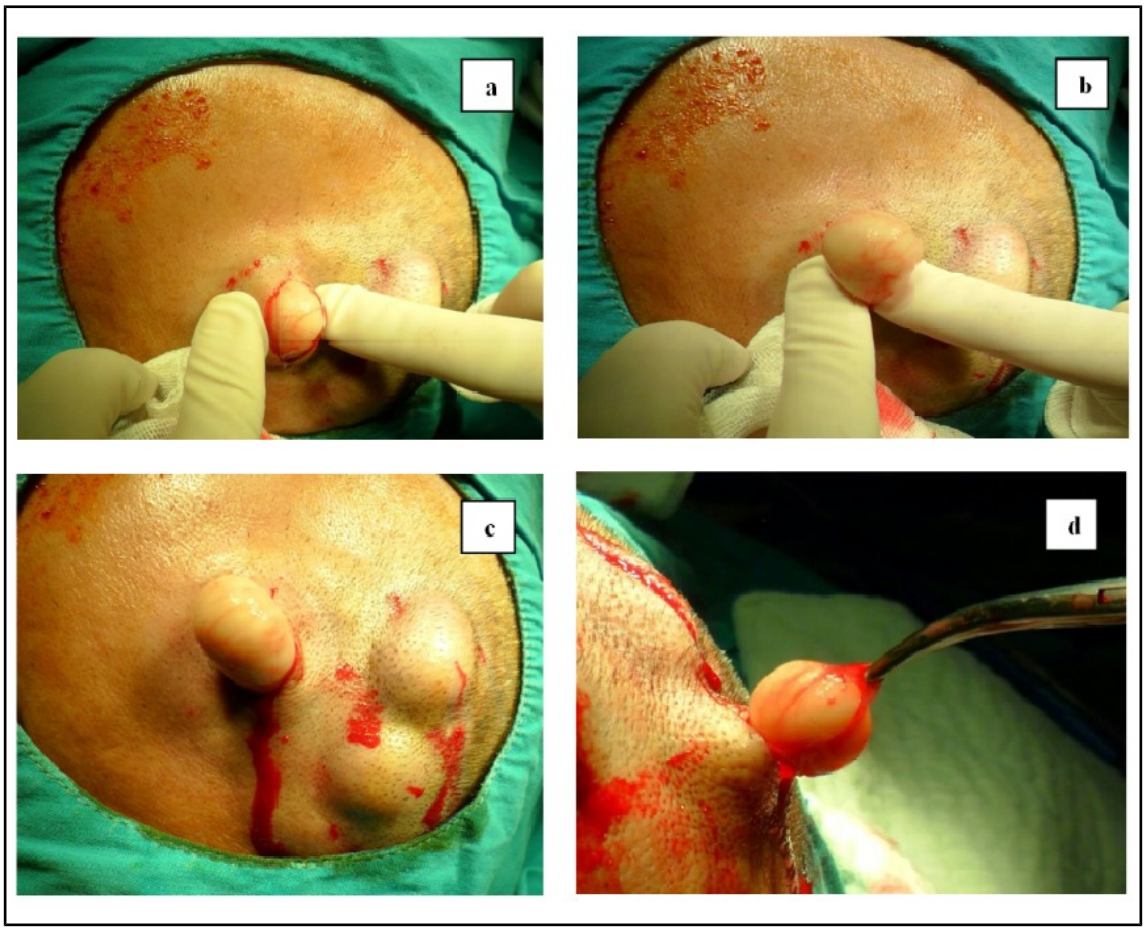
In addition to epidermal inclusion cyst, trichilemmal cyst, dermoid cyst, neurofibroma, hemangioma, lipoma and also liposarcoma should be included in differential diagnosis of the cutaneous cystic lesions. The diagnosis of an epidermal inclusion cyst can be made by its clinical features, however ultrasonography, computed tomography and magnetic resonance imaging may be helpful in suspicious lesions (Hwang, Yim, Kwon & Jung, 2008).

Complications such as infection, inflammation and hemorrhage may lead to spontaneous rupture of the cyst (Mote & Shukla, 2011). Despite the fact that epidermal inclusion cysts are classified as benign lesions, malignant transformation of epidermal inclusion cysts has been reported. It should be kept in mind that large epidermal inclusion cysts with ulceration, rapid growth, resistance to treatment, recurrence and fistula drainage might have malignant potential. Therefore, complete surgical excision and histopathological evaluation are mandatory to rule out malignancy (Antón-Badiola, San Miguel-Fraile, Peteiro-Cancelo & Ortiz-Rey, 2010; Baek, Kim, Jung, Sohn & Kwon, 2011). Hereby, we present a 48-year-old male with multiple epidermal inclusion cysts on the scalp treated surgically with squeeze technique.

Case Report

A 48-year-old Caucasian male presented with swellings on the scalp for further evaluation. The detailed physical examination of the patient revealed skin colored, smooth, round, firm masses with well defined margins on the scalp. The largest of these three lesions was 2x2 cm. The patient admitted that these painless lesions on the scalp have gradually increased in number and size in the last 20 years. There was no history of trauma or surgery. Past medical history and family history were both unremarkable. The lesions were surgically removed under local anesthesia. Hair overlying the lesions has been removed prior to surgery. Surgical site was cleaned with povidone iodine solution. Small lineer incisions were made over the skin covering the cysts. There were skin colored yellowish cysts surrounded by fibrous capsules underneath the incision sites. Pressure was applied to the base of the cysts from lateral sites using both index fingers. The cysts were completely squeezed out through the small incisions without tearing cyst wall apart. Afterwards, all of the cysts were removed gently with a curved mosquito clamp. The incisions were closed primarily. The patient did well postoperatively and he was discharged home the same day without any complications. The histopathological evaluation of the specimen revealed epidermal inclusion cysts and confirmed our initial clinical diagnosis. Figure 1 shows the intraoperative appearance and removal of epidermal inclusion cysts by the application of the squeeze technique.

Figure 1: a-b) Squeeze technique: the cyst was squeezed out through a small incision using both index fingers c) The cyst wall remained intact d) The cyst was gently held and removed with a curved mosquito clamp



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Discussion

There are several different types of surgical techniques to remove cutaneous cysts. The procedure in which the cyst is removed from surrounding tissue and extracted through an elliptical incision is called traditional wide excision. This technique may cause scar formation, however the risk of recurrence is low (Hayes). Punch incision technique refers to expulsion of the cyst components with lateral pressure through a small opening made with a dermal punch. The wound may be closed primarly with one suture. However, partial cyst wall excision carries the risk of recurrence (Mehrabi, Leonhardt, & Brodell, 2002). Minimal incision technique is used to excise the cyst components through a 2-3 mm incision. Finger pressure is applied to push out the cyst contents and gauze pad may be used to prevent the spreading of cyst material (Hayes). A technique that can be performed using the freer dissector has been described for treatment of trichilemmal cysts. The freer dissector is inserted through an elliptical incision, the cyst is dissected from the surrounding tissue and the cyst is removed from the sides and the base. This surgical technique leads to a smaller incision and causes less damage to peripheral tissue compared to the traditional technique (Ikizoglu, Kaya, Tursen & Baz, 2003).

In squeeze technique, the cyst is squeezed out through an elliptical or lineer incision. Gentle pressure is applied to the sides and the base of the cyst to move it easily (Durai, 2009; Ramakrishnan, 2002). Hereby, we applied the surgical squeeze technique in order to treat multiple epidermal inclusion cysts of the scalp. All of the cysts and their surrounding capsules were removed surgically without tearing cyst wall apart. The cysts were squeezed out through small incisions, thus the risk of scar formation was minimized.

Another surgical technique for the treatment of subcutaneous cysts has been described by Shalom et al. An 2 to 7 mm oval incision is made at the top or around the punctum of the cyst. The cyst is dissected from the surrounding tissue with blunt Steven's scissors. All of the cyst content is pulled out entirely. The space of the cyst is dissected with blunt Steven's scissors and irrigated for the presence of the cyst remnants. Shalom et al. suggested that this technique had a low risk of scarring and recurrence rate (Shalom, Persitz & Westreich, 2012).

Epidermal cysts are usually treated by surgical excision, however removal of these cysts through a hole made by an erbium:yttrium aluminum garnet (Er:YAG) laser or CO_2 laser may be the choice of treatment in order to achieve less scarring (Feng & Ma, 2015; Song, Burm, Yang & Kang, 2014).

CONCLUSION

Epidermal inclusion cysts are common benign cutaneous cysts. Even it is rare, malignant transformation of epidermal inclusion cysts has been reported. Therefore, epidermal inclusion cysts should be surgically removed for further histopathological evaluation. There are several different types of surgical techniques to remove cutaneous cysts. The appropriate surgical technique should minimize the risk of wound infection, recurrence and scar formation. Epidermal inclusion cysts can be surgically removed easily with squeeze technique. The squeeze technique facilitates the removal of an epidermal inclusion cyst with its entire intact capsule. In this technique, the cyst is squeezed out through a small incision using both index fingers. Afterwards, the cyst is gently held and removed with a curved mosquito clamp. Thus, the cyst is not ruptured. As the cyst capsule remains intact, the risk of wound infection, recurrence and scar formation is minimized. Therefore, we advise that squeeze technique should be the choice of treatment for the surgical removal of the epidermal inclusion cysts.

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