EDORIUM Journals

Int J Case Rep Images 2023;14(2):138–141.
www.ijcasereportsandimages.com

CASE REPORT PEER REVIEWED | OPEN ACCESS

Squamous cell carcinoma arising in the background of an epidermoid cyst: A case report from Syria

Duaa Knaj, Michael Georgeos, Ghanem Ahmad, Rana Issa, Ali Afif

ABSTRACT

Introduction: Malignant transformation of epidermoid cysts is rare, it accounts for 1% of all diagnosed cysts. Transformation into squamous cell carcinoma and basal cell carcinoma can occur. Clinical examination, radiological examination, and pathological confirmation are necessary for diagnosis and the treatment of choice is usually surgical excision.

Case Report: A 57-year-old Syrian female patient presented to our hospital with a huge mass on the back. Computed tomography revealed a subcutaneous huge mass 25.0 × 20.0 × 9.0 cm extended from cervical vertebrae level into upper lumbar vertebrae. Surgery with the intent of wide and complete excision was performed but it was difficult to obtain complete excision of tumor because of extension into the deep muscles. The diagnosis was made by histopathologic examination. It was a malignant transformation into squamous cell carcinoma arising from the epidermoid cyst. The patient received radiotherapy after surgery because of incomplete excision of tumor.

Conclusion: This case shows an unusual presentation of a huge epidermoid cyst on the back with transformation into malignancy. We aimed to highlight the importance of early diagnosis and treatment of these cysts.

Duaa Knaj[1], Michael Georgeos[2], Ghanem Ahmad[3], Rana Issa[4], Ali Afif[5]

Affiliations: [1]PhD student, Department of Oncology, Tishreen University Hospital, Lattakia, Syria; [2]Professor, Department of Oncology, Tishreen University Hospital, Lattakia, Syria; [3]Professor, Department of Vascular Surgery, Tishreen University Hospital, Lattakia, Syria; [4]Assistant Professor, Department of Pathology, Tishreen University Hospital, Lattakia, Syria; [5]MD student, Faculty of Medicine, Tishreen University, Lattakia, Syria.

Corresponding Author: Duaa Knaj, Tishreen University Hospital, Lattakia, Syria; Email: duaa.knaj@tishreen.edu.sy

Received: 24 August 2023
Accepted: 10 October 2023
Published: 18 November 2023

Keywords: Cutaneous cyst, Squamous cell carcinoma, Transformation

How to cite this article

Knaj D, Georgeos M, Ahmad G, Issa R, Afif A. Squamous cell carcinoma arising in the background of an epidermoid cyst: A case report from Syria. Int J Case Rep Images 2023;14(2):138–141.

Article ID: 101427Z01DK2023

****

doi: 10.5348/101427Z01DK2023CR

INTRODUCTION

Epidermoid cysts (ECs) are usually slow-growing, painless, cutaneous lesions that account for 85–95% of all excised cysts [1]. Although ECs are usually benign, they can rarely transform into malignant lesions. Malignant transformation can occur and it accounts for 1% of the cysts. Squamous cell carcinoma (SCC) and basal cell carcinoma (BCC) were reported.

CASE REPORT

A 57-year-old Syrian female patient presented with a huge mass on the back. On clinical examination, the patient was in a good general status. She had a solitary large mass in the trunk region, which occupied most of the left region of the back measuring approximately 25.0 × 20.0 cm. On palpation, the mass was tender; found to be soft in some regions and firm in others with some reddish coloration with no discharge coming out of it. The patient reported that she had no previous surgeries, no chronic diseases, and no history of smoking. The cyst was small for a long time about ten years ago, but recently, it has grown significantly in size over the last two months. This big mass was not associated with respiratory symptoms

or other problems except a scoliosis, which has developed during the growth of the cyst (Figure 1). At presentation, laboratory tests revealed white blood cell (WBC) 12,300/mm^3, red blood cell (RBC) 5.29×10^6/mm^3, hemoglobin (Hgb) 13.6 g/dL, platelet (Plt) count 33310^3/mL, erythrocyte sedimentation rate (ESR) 20 mm, C-reactive protein (CRP) 3.8 mg/L, Urea 37 mg/dL, Creatinine 0.9 mg/dL, lactate dehydrogenase (LDH) 199 U/L.

Computed tomography (CT) revealed a subcutaneous huge mass 25.0 × 20.0 × 9.0 cm extended from cervical vertebrae level into upper lumbar vertebrae with infiltration into latissimus dorsi muscles, extension until erector spinae muscles and infiltration into the intercostal muscles (Figure 2).

Surgery with the intent of wide and complete excision was performed, but the mass was extended into the deep muscles and the complete excision was difficult to obtain (Figure 3). The excised specimen was sent to the pathology department. The gross inspection of the specimens revealed fragmented white-gray soft to firm tissue, which measured in aggregate 17.0 × 11.0 × 4.0 cm. The surface of some fragments were irregular. In general, infiltration of variably differentiated malignant squamous cells with occasional central keratin pearls and intervening desmoplastic stroma was seen in the hematoxylin and eosin (H&E) stained sections taken from specimen. Furthermore, segments of fibrous wall covered by regular squamous epithelium and hyperkeratosis also detected in the specimen. Finally, the diagnosis of malignant transformation of epidermoid cyst was reported (Figures 4 and 5).

Figure 1: A huge mass on the back in a 57-year old woman, the size was 25.0 × 20.0 × 9.0 cm.

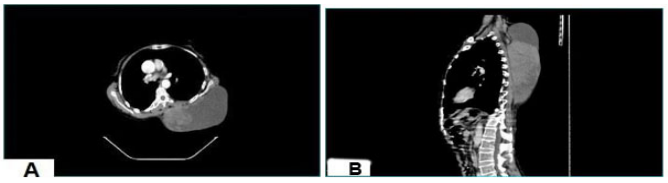

Figure 2: Computed tomography images. (A) The axial CT plane shows a large mass on the left side. (B) The sagittal CT plane shows the mass on the back, which occupied most of the left region.

Figure 3: Operative photography after excision and keratin discharge from the cyst.

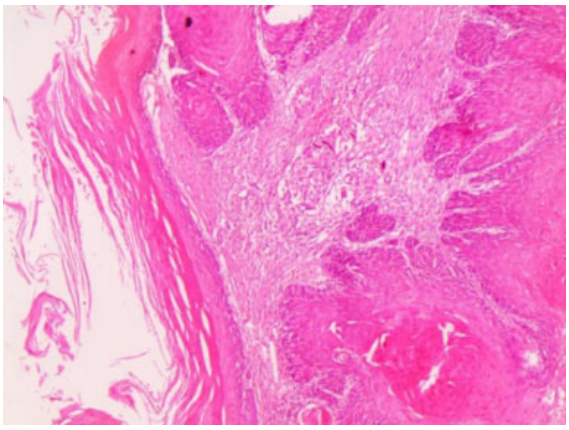

Figure 4: Cystic cavity and dermoid cystic wall (left), squamous cell carcinoma components with a lot of keratin in dermis (right).

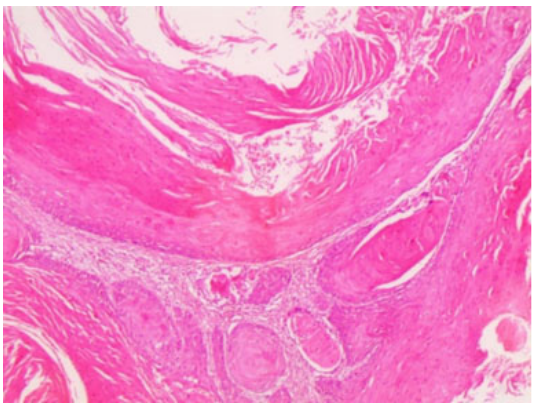

Figure 5: Laminated aplenty keratin in the cavity of cyst (upper), well differentiated squamous cell carcinoma in sub-epithelial stroma.

DISCUSSION

Epidermoid cysts are a common type of cutaneous cyst that can occur at any age although they are frequently found in adulthood and are usually diagnosed later in life. The lesions can present on the skin and in many visceral organs [1]. They may be solitary or multiple lesions also and they can be congenital or acquired. Epidermoid cysts are found just under the surface of the skin originating from the follicular infundibulum and are usually filled with keratin, cholesterol clefts, or degenerated blood components. The lining of the cyst produces keratin [1]. Although these cysts are recognized as benign lesions, a malignant transformation to SCC and BCC can occur (~1%) [2]. Epidermoid cysts usually remain asymptomatic although a rupture of the cyst lining may happen and cause an inflammation of the cyst [3]. When suspected infected cysts fail to respond to medical management, malignant transformation should be considered. Other symptoms may raise suspicions of this transformation including rapid growth, pain, ulceration, and persistent drainage of the cyst[1].

Physical examination, radiological examination, and biopsy are useful procedures for diagnosis although pathological examination mostly confirms diagnosis. Radiological studies including ultrasound, CT, and magnetic resonance imaging (MRI) should be done [4]. The primary treatment for a malignant EC is wide excision with adequate margins [5]. When the cyst is actively inflamed, excision should be delayed because of a high risk of infection. Following the surgery, complications such as inflammation and wound dehiscence may occur, but this did not happen in our case.

While small cysts may be treated by carbon dioxide (CO_2)- or erbium-yttrium aluminum garnet (YAG)-laser, larger cysts need a surgical approach with complete removal of the lesions. Liu et al. [6] demonstrated that CO_2 laser fenestration-assisted procedure is an effective option for the treatment of epidermal cysts and it can achieve good aesthetic results with a low recurrence rate.

In this case, it was difficult to obtain clear margins of tumor by surgery so that the patient has received radiotherapy after surgery. Kim et al. [4] analyzed 432 cases of epidermoid cyst in 398 patients who underwent complete excision and biopsy, according patient age, gender, and lesion location. About 65% of cases were on the face, 10.9% on the trunk with 7.9% on the back, 7.9% on the scalp while 4.3% on lower extremities. The cases occurred at a men-to-women ratio of about 3:2.

Although cutaneous cysts usually occur more frequently in men than women, the rate has been variously reported. Dutta et al. [7] reported a male-to-female ratio of 4.6:1 and Jhamet al. [8] reported a ratio of 3:1. In Korea, Han and Kim [9] reported a ratio of 1.8:1 and Heo and Oh [10] reported a ratio of 2.8:1.

There are some suggestions about the mechanism behind malignant transformation of ECs although they are still theories; chronic inflammation or infection of the cysts, some factors like trauma, immunosuppression, human papillomavirus, and actinic damage [8]. Histopathological examination should be performed to confirm the diagnosis and to be sure about complete excision. A differential diagnosis of an epidermoid cyst can be lipomas, milia, furuncles, melanomas, etc. Frank et al. [3] reported that the most common site of occurrence of epidermal inclusion cysts was the head and neck (54.8%) in a review of 41 cases of SCC arising from cutaneous epidermal cysts.

Cyst size varied significantly with the largest diameter of cyst of 20 cm. Men were more often affected (69%). The most common presenting symptoms were rapid enlargement and pain.

CONCLUSION

Malignant transformation of epidermoid cysts is possible although it is uncommon. These cysts can cause functional and cosmetic impairment, so it is better to be treated as early as possible.

REFERENCES

1. Hoang VT, Trinh CT, Nguyen CH, Chansomphou V, Chansomphou V, Tran TTT. Overview of epidermoid cyst. Eur J Radiol Open 2019;6:291–301.
2. Zito PM, Scharf R. Epidermoid Cyst. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2023.
3. Frank E, Macias D, Hondorp B, Kerstetter J, Inman JC. Incidental squamous cell carcinoma in an epidermal inclusion cyst: A case report and review of the literature. Case Rep Dermatol 2018;10(1):61–8.
4. Kim CS, Na YC, Yun CS, Huh WH, Lim BR. Epidermoid cyst: A single-center review of 432 cases. Arch Craniofac Surg 2020;21(3):171–5.
5. Veenstra JJ, Choudhry S, Krajenta RJ, Eide MJ. Squamous cell carcinoma originating from cutaneous cysts: The Henry Ford experience and review of the literature. J Dermatolog Treat 2016;27(1):95–8.
6. Liu D, Zhou EY, Chen D, Tuan H, Zhao Y. Epidermoid cyst removal with CO2 laser fenestration: A retrospective cohort study. J Cosmet Dermatol 2021;20(6):1709–13.
7. Dutta M, Saha J, Biswas G, Chattopadhyay S, Sen I, Sinha R. Epidermoid cysts in head and neck: Our experiences, with review of literature. Indian J Otolaryngol Head Neck Surg 2013;65(Suppl 1):14–21.
8. Jham BC, Duraes GV, Jham AC, Santos CR. Epidermoid cyst of the floor of the mouth: A case report. J Can Dent Assoc 2007;73(6):525–8.
9. Han YS, Kim SN. A study on 1,302 cases of skin tumor. Korean J Dermatol 1988;26:189–99.
10. Heo CY, Oh GS. A 10-year period (1989–1998) of clinical observation of facial skin tumors. Inje Med J 1999;20:361–8.

****

Author Contributions

Duaa Knaj – Acquisition of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Michael Georgeos – Conception of the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Ghanem Ahmad – Conception of the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Rana Issa – Analysis of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Ali Afif – Acquisition of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Guarantor of Submission

The corresponding author is the guarantor of submission.

Source of Support

None.

Consent Statement

Written informed consent was obtained from the patient for publication of this article.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.