

Epidermal Cyst of the Clitoris Mimicking Cliteromegaly: A Case Report and Review of the Literature

^{ID} Elif Gökür TOPÇU^a, ^{ID} Zihniye Gonca OKUMUŞ^b, ^{ID} Ezgi DEMİRKAYA^a, ^{ID} Nermin GÜNDÜZ^c,
^{ID} Hale GÖKSEVER ÇELİK^a

^aHealth Sciences University İstanbul Kanuni Sultan Süleyman Training and Research Hospital, Department of Obstetrics and Gynecology, İstanbul, TURKEY

^bDr. Yaşar Eryılmaz Doğubeyazıt State Hospital, Ağrı, TURKEY

^cHealth Sciences University İstanbul Kanuni Sultan Süleyman Training and Research Hospital, Department of Pathology, İstanbul, TURKEY

ABSTRACT Epidermoid cyst can be seen in a variety of locations in the body, but it is rarely seen in the vulvar region, especially in those who do not have a history of genital mutilation. We hereby present a case of an epidermal cyst located in the clitoris for more than 10 years without any symptoms but recently suspected of growth by the patient who consulted a gynecologist. Local surgical removal of the mass is the best practice to be known although long-term effects of the reconstructive procedures in this area is yet to be unknown.

Keywords: Cliteromegaly; clitoral mass; epidermal cyst; female mutilation; excision

Epidermal cysts are intradermal tumors that are thought to develop by invagination of squamous epithelium due to the abnormal proliferation of the epidermal cells.¹ They are usually asymptomatic, slowly growing solid tumors that are located commonly in face, scalp, neck, extremities, trunk and rarely in vulvar region. Clitoral epidermoid cysts are rarely seen in women who do not have prior trauma such as mutilation or piercing. Epidermal cysts usually tend to stop growing after having reached to size of 1-5 cm in diameter.² We report a case of an epidermal cyst of the clitoris which has been noticed by the patient for over a decade but had no symptoms until the past several months. We aimed to draw attention to the differential diagnosis of cliteromegaly in the women at an atypical age for the epidermal cysts.

CASE REPORT

A 49-year-old woman with Gravida 8 Para 8 (vaginal deliveries) applied to the hospital due to the gradual increase in the size of her clitoris in the past 8 months. She had an enlargement at her clitoris for at least 10 years. She did not seek care since it was an asymptomatic mass and it had stopped growing after it reached about 3 cm in diameter. She had no disturbance in her daily or sexually activities. Her medical history was normal with no history of surgery or trauma. Her family history was unremarkable. She had regular menstrual cycles and did not have any pain, dysuria or vaginal discharge. She denied having any abnormal hair growth, acne, changes in her voice or sexual drive. She had deliveries before and after the clitoral enlargement. For the past 8 months,

Correspondence: Hale GÖKSEVER ÇELİK

İstanbul University of Health Sciences Kanuni Sultan Süleyman Training and Research Hospital,
Department of Obstetrics and Gynecology, İstanbul, TURKEY

E-mail: hgoksever@yahoo.com



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the mass has started to grow again causing discomfort, so she decided to seek advice from a gynecologist.

Her physical examination revealed a well-developed female weighing 75 kgs with 160 cm height. There was no evidence of abnormal hair distribution or acne. Gynecologic examination revealed a 4x4.5 cm solid, mobile, regular contoured, non-tender, soft mass (Figure 1). Examination of her vagina, cervix and uterus was normal. Her laboratory results showed normal hormonal values including estrogen, follicular stimulating hormone, luteinizing hormone, testosterone, DHEA, DHEA-s and 17-OH progesterone levels. The patient was referred to the Department of General Surgery to rule out hernia. The consultation was finalized as a recommendation of soft tissue ultrasound to rule out lipoma. The soft tissue ultrasound revealed a 2x4 cm sized, regular contoured, hyperechogenic, solid nodular lesion with multiple punctate echoes and no Doppler vascularity, and recommended thin slice magnetic resonance

imaging for the differential diagnosis of cliteromegaly and the probability of any malignancy. Magnetic resonance imaging (MRI) scan revealed a 3x1.5 cm cystic appearing soft tissue mass with benign nature with well-defined margins located in the midline, medial to the labia majora, without contrast enhancements after intravenous injection of the contrast material.

The clitoral mass was surgically removed, taking special care to preserve the the neurovascularization of the clitoris (Figure 2). The patient was discharged the day after the surgery with no complaints. She had also no complaints at follow-ups in our outpatient clinic. Histopathological examination stated that a 2 cm cyst covered with stratified squamous epithelium and the diagnosis of keratinous cyst was made (Figure 3).

Informed consent was obtained from the patient, allowing the use of her blinded clinical data for research purposes.



FIGURE 1: The macroscopic appearance of the clitoral mass.



FIGURE 2: The appearance of the clitoral mass from the operating room.

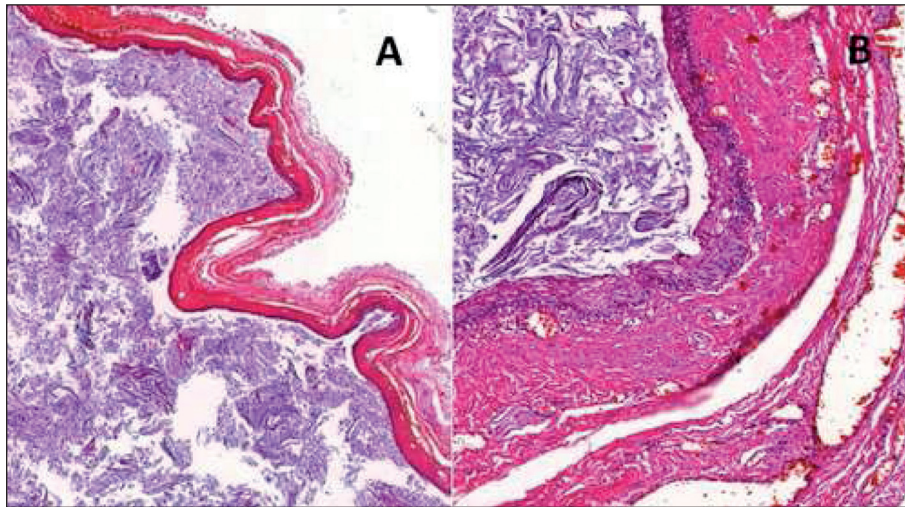


FIGURE 3: **A)** The microscopic appearance of the pathological specimen with hematoxylin and eosin under H-Ex100 magnification, **B)** The microscopic appearance of the pathological specimen with hematoxylin and eosin under H-Ex200 magnification.

DISCUSSION

Epidermal cysts are slowly-growing, intradermal or subcutaneous tumors lined with true epidermis, arising from invagination of keratinizing squamous epithelium within the dermis.¹ They can be found in various locations in the body including face, neck, scalp, trunk and extremities. Vulvar epidermal cysts usually arise following a trauma such as episiotomy, genital mutilation or piercing.² Most of the vulvar epidermal cysts described so far have been localized at the clitoris, and circumcision procedures and trauma have been demonstrated as the underlying causes.³ Rarely, epidermal cysts in the clitoris have been reported in the literature without history of trauma, as in our case.^{4,6} These epidermal cysts located at the clitoris are usually seen during adulthood and the adolescence.⁷ These cysts are rarely encountered during prepubertal or postmenopausal period.⁸⁻¹⁰ Our patient did not have any history of surgery, trauma or mutilation, as rarely seen.⁶ Epidermal cysts can cause discomfort to the patient and pain during intercourse. Our patient did not claim any pain or any effect on her quality of life. However, discomfort and pain symptoms have been observed with the growth of the mass in our patient, recently.

There could be different reasons for clitoris to be seen enlarged during a physical examination. The etiologies for the enlargement of clitoris include

cliteromegaly, clitoral cysts, tumors, infection, inflammation, hematoma, and allergic reactions. All of these possibilities must be kept in mind and investigated for differential diagnosis. Cliteromegaly is defined as a measure of the clitoral index (width×length in mm) more than 35 mm.^{2,11} It can be congenital or acquired, and hormonal or non-hormonal. Congenital adrenal hyperplasia can be an example for both hormonal and congenital etiology while neurofibromatosis is an example for a non-hormonal reason.¹² The clitoris can be involved in several types of benign cysts such as lipoma, epidermoid cyst, endometrioma and retention cysts that originate from sebaceous glands such as Nuck canal cysts.¹³ Benign or malignant tumors of the clitoris are uncommon. The reported benign tumors of the clitoris besides the cystic lesions include fibroma, leiomyoma, angiokeratoma, hemangiopericytoma, pseudolymphoma, hemangioma, hemangiopericytoma, granular cell tumor, and neurofibroma.²

Careful assessment of the patient with history, physical examination, hormonal investigation and imaging techniques are needed for an accurate diagnosis.¹⁴ Multidisciplinary approach may be necessary to rule out the other diseases in that area. Treatment of the epidermoid cyst is total surgical excision. Careful dissection is essential during surgery.¹⁵ The sensation of this region, which is mainly innervated by the dorsal clitoral nerve, should be considered in sur-

gical excision. For this purpose, preoperative sensory mapping will be clinically useful.¹⁶ Long-term effects of the reconstructive procedures in this area is yet to be unknown. Definitive diagnosis can be confirmed by histopathological demonstration. The excision of clitoral mass preserving neurovascularization of the clitoris and histopathological examination is the right approach for our patient.

Complete follow-up of the patient from diagnosis to treatment is the strength of our case-report. Thus, clinicians will be able to manage their patients with cliteromegaly in a shorter time.

As a conclusion, epidermoid cysts can occur in various locations. Rarely, external genitalia can be involved as labial and/or clitoral implantation. Clitoral epidermoid cysts most commonly occur after trauma. Even without history of any trauma, epidermoid cysts should be considered in the differential diagnosis of a clitoral mass. Reporting this 49-year-old woman having cliteromegaly without any history of trauma will be useful in differential diagnosis of women with clitoral masses for clinicians.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: Hale Göksever Çelik, Zihniye Gonca Okumuş, Elif Gökknur Topçu; **Design:** Elif Gökknur Topçu, Hale Göksever Çelik; **Control/Supervision:** Hale Göksever Çelik; **Data Collection and/or Processing:** Elif Gökknur Topçu, Ezgi Demirkaya, Zihniye Gonca Okumuş, Nermin Gundüz; **Analysis and/or Interpretation:** Elif Gökknur Topçu, Zihniye Gonca Okumuş; **Literature Review:** Hale Göksever Çelik; **Writing the Article:** Elif Gökknur Topçu; **Critical Review:** Hale Göksever Çelik; **References and Fundings:** Hale Göksever Çelik; **Materials:** Elif Gökknur Topçu.

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