

Clitoral epidermoid cyst secondary to blunt trauma in a 9-year-old child

Neslihan Çelik¹, Şule Yalçın¹, Şafak Güçer², İbrahim Karnak¹

¹ Department of Pediatric Surgery and ² Division of Pediatric Pathology, Department of Pediatrics, Hacettepe University Faculty of Medicine, Ankara, Turkey

SUMMARY: Çelik N, Yalçın Ş, Güçer Ş, Karnak İ. Clitoral epidermoid cyst secondary to blunt trauma in a 9-year-old child. Turk J Pediatr 2011; 53: 108-110.

Epidermoid cysts are slowly growing tumors arising from invagination of the epidermis into the dermis traumatically or spontaneously. This implantation in the clitoris is most commonly induced by female genital mutilation. The reported cases with spontaneous onset of this clitoral lesion are scarce. Trauma other than female circumcision predisposing to the onset of the cyst has not been mentioned before. A nine-year-old girl was presented for swelling in the pubic region with the onset following an accidental trauma; the diagnosis was determined to be epidermoid cyst of the clitoris after a brief preoperative evaluation and an accurate surgical management.

Key words: child, epidermoid cyst, clitoris, trauma.

Epidermoid cysts are slowly growing, intradermal or subcutaneous tumors lined with true epidermis, arising from invagination of keratinizing squamous epithelium within the dermis¹. While the common locations are the face, scalp, neck and trunk, external genitalia can also be involved with clitoral, labial or scrotal implantation.

The clitoral epidermoid cysts should be differentiated from many other pathologies of the clitoris with an accurate clinical evaluation and surgical management. Herein, we report a case of clitoral epidermoid cyst, which differs from the others with respect to the clinical onset of the lesion and therapeutic approach, with a brief review of the literature.

Case Report

A nine-year-old girl was admitted to the hospital with the complaint of a slowly growing swelling in the pubic region for the last six months. The mass was painless, and there were no symptoms of difficulty in urination, vulval itching or vaginal discharge. Her medical history was unremarkable apart from a mild genital trauma in a swing accident one year ago.

Physical examination revealed a soft, mobile, nontender, rounded swelling of 2x3 cm on the top of the clitoris. The appearance of the introitus was normal, with no sign of virilization (Fig. 1). Surgical excision of the mass was recommended.

Under general anesthesia, a reverse V-shaped incision was made on the swelling and the cystic lesion was easily dissected from the surrounding structures. While it was more firmly attached at the base, adjacent to the clitoris, the cyst was totally removed without any damage to the neurovascular bundle. After hemostasis, the skin was approximated with a continuous suture, without any trimming. During the follow-up as an outpatient case, a minimal hematoma observed during the postoperative course was easily managed with the use of antibiotics.

The pathologic examination of the specimen revealed epidermoid cyst lined by stratified squamous epithelium without skin appendages and filled with keratinous material (Fig. 2). The follow-up of the patient at the 6th postoperative month revealed no recurrence, with a fine cosmetic result (Fig. 3).



Fig. 1. Physical examination finding of the rounded swelling on the top of the clitoris.

Discussion

Even though tumors of the clitoris are rarely encountered, they include a wide spectrum of lesions. The reported benign lesions include fibroma, leiomyoma, angiokeratoma, pseudolymphoma, hemangioma, hemangiopericytoma, granular cell tumor, and neurofibroma besides the cystic lesions, while the malignant components include carcinoma, endodermal sinus tumor, sarcoma, rhabdomyosarcoma, schwannoma, epithelioid hemangioendothelioma, and lymphoma².

The epidermoid cysts are slowly growing, intradermal or subcutaneous tumors with a wall composed of true epidermis. While the most common locations are the face, scalp, neck, and trunk; the external genitalia can also be involved as clitoral, labial or scrotal implantation. Those

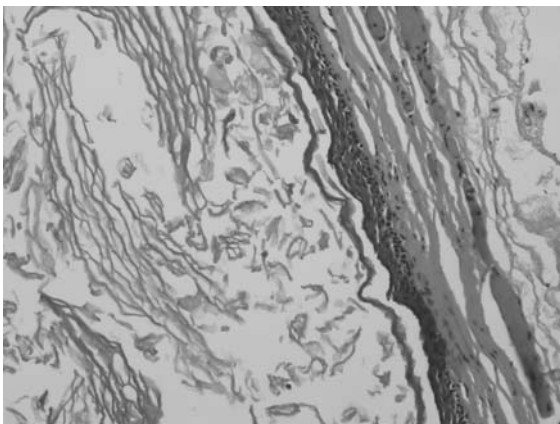


Fig. 2. The microscopic appearance of the epidermoid cyst lined by stratified squamous epithelium and filled with keratin flakes (H&E x200).



Fig. 3. The appearance of the external genitalia at the 6th postoperative month.

inclusion cysts arise from the invagination of keratinizing squamous epithelium within the dermis, which becomes cystic and filled with laminated keratin³. This implantation in the clitoris is most commonly induced by trauma and rarely encountered to appear spontaneously originating from dysontogenetic displacement². The most general traumatic event underlying cyst formation in the clitoris is female genital mutilation, which involves partial or total removal of the external female genitalia, for cultural or non-therapeutic indications⁴⁻⁷. The reported series of clitoral inclusion cysts consist only of those with female circumcision. Accidental trauma is rarely known to be the underlying etiology for the clitoral epidermoid cyst. In our case, the only correlated event for the onset of epidermoid cyst formation in the patient's history was the swing accident occurring six months before her presentation. The pattern of the trauma underlying the cyst formation distinguishes our report from the others. Cases lacking any kind of trauma are scarce, and two of those had a history of oral contraceptive use^{2,8}, which could indicate the putative role of estrogen in stimulation of the implanted epidermis and sebaceous glands⁴.

The clinical presentation of this clitoral pathology usually consists of a silent course with a painless swelling gradually increasing

in size^{4,5,9}. A soft, mobile, nontender mass in the clitoral region in the absence of any virilization sign is the typical physical finding, which is in accordance with the findings of our patient.

Clitoral epidermoid inclusion cysts are reviewed among the non-hormonal causes of clitoromegaly in the literature^{4,10,11}. Hormonal conditions such as endocrinopathies, masculinizing tumors, exposure to the androgens, pseudo-clitoromegaly due to masturbation, and clitoral neurofibromatosis are the other causative factors in the etiology of the acquired clitoral enlargement¹². The preoperative investigation of the reported cases with the final diagnosis of clitoral epidermoid cyst in the literature consisted of detailed hormonal and chromosomal analysis, abdominopelvic ultrasonography and even the sonographic and magnetic resonance imaging of the cystic lesion^{2,3,8,9}. In our opinion, the investigation for preoperative diagnosis should not necessarily include all laboratory and radiological studies. The detailed history and careful physical examination in this case facilitated the differential diagnosis of the many other pathologies leading to clitoromegaly, and can prevent both unnecessary investigation as well as any delay in the operation.

The surgical technique used in our case for removal of the cyst was similar to the other reported cases, apart from the preferred incision^{4-6, 8}. The cyst was easily dissected from the surrounding structures, except the base of the cyst, which was the site adhered firmly to the top of the clitoris. The preservation of the neurovascular bundle was provided during the dissection of this region. The reverse V-shaped incision used in our patient both omitted the necessity for skin trimming and also provided a fine cosmetic result, in contrast to the vertical incision preferred in most of the other reported cases, in which skin trimming was obligatorily used for the closure^{4-6, 8}.

One other difference in the management of our patient apart from the others^{6,8} was the absence of urethral catheter insertion and hospitalization. The girl could be easily followed on an outpatient basis, with only simple manipulation of a small hematoma observed at the operation site.

Even though the acquired pathologies of the clitoris are rarely encountered, differential diagnoses of many possibilities should be made

with a detailed history and an accurate physical examination. This case was unique among the other reported cases with respect to the underlying etiology, preoperative evaluation, surgical approach regarding the incision, and the postoperative management. After a brief preoperative investigation, immediate surgical excision even on an outpatient basis would be the satisfactory therapeutic approach for epidermoid cystic lesion of the clitoris, for which the clinical and pathologic findings are very characteristic, even though the underlying etiology for the onset can differ.

REFERENCES

1. Kirkham N. Tumors and cysts of the epidermis. In: Elder DE, Elenitsas R, Johnson BL, Jr., Murphy GF (eds). *Lever's Histopathology of the Skin* (9th ed). Philadelphia: Lippincott Williams & Wilkins; 2005: 805-866.
2. Schmidt A, Lang U, Kiess W. Epidermal cyst of the clitoris: a rare cause of clitorimegaly. *Eur J Obstet Gynecol Reprod Biol* 1999; 87: 163-165.
3. Lee HS, Joo KB, Song HT, et al. Relationship between sonographic and pathologic findings in epidermal inclusion cysts. *J Clin Ultrasound* 2001; 29: 374-383.
4. Rizk DE, Mohammed KH, Joshi SU, Al-Shabani AY, Bossmar TR. A large clitoral epidermoid inclusion cyst first presenting in adulthood following childhood circumcision. *J Obstet Gynaecol* 2007; 27: 446-448.
5. Yoong WC, Shakya R, Sanders BT, Lind J. Clitoral inclusion cyst: a complication of type I female genital mutilation. *J Obstet Gynaecol* 2004; 24: 98-99.
6. Rouzi AA, Sindi O, Facharzt BR, Ba'aqueel H. Epidermal clitoral inclusion cyst after type I female genital mutilation. *Am J Obstet Gynecol* 2001; 185: 569-571.
7. Hanly MG, Ojeda VJ. Epidermal inclusion cysts of the clitoris as a complication of female circumcision and pharaonic infibulation. *Cent Afr J Med* 1995; 41: 22-24.
8. Fedele L, Fontana E, Bianchi S, Frontino G, Berlanda N. An unusual case of clitoromegaly. Letters to the Editor. *Eur J Obstet Gynecol Reprod Biol* 2008; 140: 287-288.
9. Çetinkurşun S, Narci A, Sahin O, Özkaraca E. Epidermoid cyst causing clitoromegaly in a child. *Int J Gynaecol Obstet* 2009; 105: 64.
10. Çöpçü E, Aktaş A, Sivrioglu N, Çöpçü Ö, Öztan Y. Idiopathic isolated clitoromegaly: a report of two cases. *Reprod Health* 2004; 1: 4.
11. Linck D, Hayes MF. Clitoral cyst as a cause of ambiguous genitalia. *Obstet Gynecol* 2002; 99: 963-966.
12. Horejsi J. Acquired clitoral enlargement – diagnosis and treatment. *Ann N Y Acad Sci* 1997; 816: 369-372.