

Epidermal cyst in the patent processus vaginalis: An unusual inguinal mass in a girl

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Received: 21 January 2015, Revised: 19 February 2015, Accepted: 24 February 2015

SUMMARY: Karnak İ, Haliloğlu M, Güçer Ş. Epidermal cyst in the patent processus vaginalis: An unusual inguinal mass in a girl. Turk J Pediatr 2015; 57: 629-631.

Epidermal cyst is a benign tumor that grows slowly and develops from entrapment of epidermis into the dermis. Inguinal canal is an extremely unusual location for an epidermal cyst in children. Here in, a 6-year-old girl presenting with inguinal mass which was diagnosed to be epidermal cyst in the patent processus vaginalis sac is reported. To the best of our knowledge, it is the first case of epidermal cyst in the patent processus vaginalis in a child.

Key words: epidermal cyst, epidermoid cyst, processus vaginalis, inguinal canal.

Epidermoid cyst is an intradermal or subcutaneous tumor that grows slowly. It is lined with epidermis and develops from congenital or acquired entrapment of keratinizing squamous epithelium into the dermis. This tumor usually locates on the face, scalp, neck, trunk and external genitalia.

Although a few cases with inguinal dermoid cyst have been reported in children and adults¹⁻⁵, epidermal cyst in the open processus vaginalis has not been reported to date. Therefore, we report on a case of inguinal epidermal cyst with special emphasis on the differential diagnosis of inguinal masses in children.

Case Report

A 6-year-old girl was presented with left inguinal swelling. The mass has been noticed incidentally for a week. It was painless and there was no history of trauma or infection. According to the parents, the mass was in stable size and did not disappear intermittently. She was under follow-up for asthma.

Physical examination revealed a painless, hard, mobile and oval-shaped mass 15x10 mm in size in the left inguinal region. Ultrasound revealed a solid mass in 15x11x8 mm size and the lesion was avascular on Doppler ultrasound. Uterus and ovaries were normal. Patency of processus vaginalis and relation with the mass was not determined in US examination.

The radiological presumptive diagnosis was fibroma or lymphadenopathy. Nonspecific antibiotherapy was not effective and surgical excision was performed through a small left inguinal skin crease incision. The mass was found at the level of external inguinal ring. It was located in the distal end of patent processus vaginalis (Fig. 1). Processus vaginalis was excised totally at the level of internal inguinal ring, together with the mass. Postoperative course was uneventful.

Histopathological examination revealed that the cyst was 2.5x1x1 cm in size and covered by processus vaginalis. A yellow granular material filling the cyst lumen was noted on the cut surface. On light microscopy, the cyst wall was lined by keratinized, stratified squamous epithelium with a well-formed granular layer. The lumen of the cyst was filled with thick and dense keratin. Skin appendages were completely absent (Fig. 2).

Discussion

Inguinal hernia is the most frequent pathology as a cause of inguinal bulging in girls. Surgical diagnoses are inguinal hernia, sliding ovary and incarcerated organ (intestine, ovary) in girls with inguinal hernia. Inguinal lymphadenitis, cyst of the canal of Nuck, lymphangioma and neuroblastoma metastasis can be also taken into consideration in the differential diagnosis

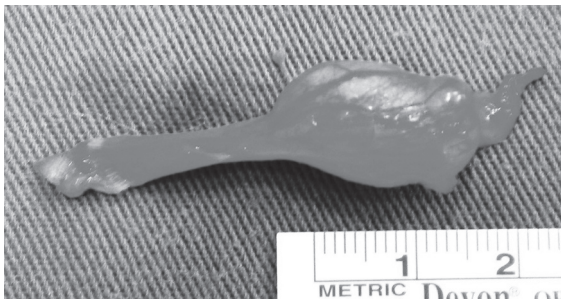


Fig. 1. The mass was located in the distal end of patent processus vaginalis.

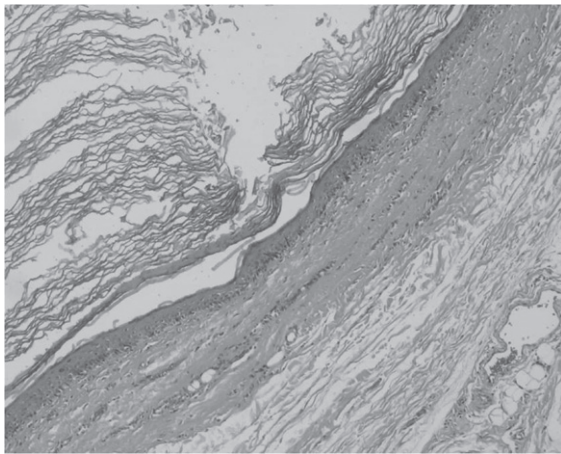


Fig. 2. Epidermal cyst was lined by a keratinized squamous epithelium with prominent granular layer and filled with abundant keratin (HE, x100).

of inguinal bulging in girls⁶.

Inguinal hernia is the most common cause of inguinal bulging in children. Hydrocele or cyst of the spermatic cord, communicating hydrocele, undescended inguinal testis, extravaginally torsioned testis can be diagnosed in boys presenting with inguinal bulging in addition to above mentioned causes for girls except cyst of the canal of Nuck⁶.

Dermoid cyst has been reported to locate in the inguinal region in only a few adult and children cases¹⁻⁵. Epidermal cyst is an extremely rare cause of inguinal mass in children with only one reported case with epidermal inclusion cyst in the inguinal canal without associating hernia⁶. The presented case is unique because of location of epidermal cyst completely in the processus vaginalis sac in addition to extreme rarity of the lesion in the inguinal area in childhood.

The epidermal cysts arise from the invagination

of keratinizing squamous epithelium within the dermis, those become cystic and filled with laminated keratin. These cysts develop congenitally or secondary to trauma which impair the integrity of the epidermis. In congenital etiology, these cysts are suggested to develop as a result of displacement of epidermal tissue during embryologic life. On the other hand, these cysts can develop if the integrity of the epidermis is impaired as a result of trauma which causes entrapment of epidermis into the skin layers. In contrast to clitoral epidermal cyst⁷, the history of previous trauma is not associated in our case with inguinal epidermal cyst. Therefore implantation into the inguinal region seems to be congenital and originating from dysontogenetic displacement in the present case.

The clinical presentation of this inguinal lesion was incidental, with a firm, painless swelling gradually increasing size. The initial physical examination findings suggested the mass to be lymph node, or sliding ovary because of mobility and oval shape of the lesion, in spite the absence of additional examination findings suggesting inguinal hernia in the present case. Ultrasound revealed normal internal genitalia with simultaneous presence of inguinal mass and helped to exclude the possibility of sliding ovary. However, the lesion appeared solid during ultrasonography possibly due to the cyst being heavily-laden with thick and dense keratin. Ultrasound examination of the pelvis and inguinal mass is helpful in differential diagnosis of inguinal masses with incongruous physical examination findings in children. Preoperative ultrasound examination may also eliminate the need for frozen section and intraperitoneal exploration in many cases with unusual inguinal mass with equivocal examination findings.

Total surgical excision through inguinal incision is mandatory and satisfactory in inguinal epidermal cyst. Infection of the cyst, enlargement or rupture of the cystic mass and malignant transformation in the cyst epithelium may be expected if surgery is not performed. Definitive diagnosis is made by meticulous histopathological examination. The presence of the cyst wall lined by keratinized squamous epithelium, cyst lumen containing keratin and absence of skin appendages as well as absence

of tissues which derived from germinal layers other than ectoderm helps differentiation of epidermal cyst from dermoid cyst and classical teratoma.

Epidermal cyst is an extremely rare cause of inguinal mass in children. It should be included in the list of differential diagnosis of childhood inguinal masses. Ultrasonography should be used in inguinal masses presenting with equivocal physical examination findings in children.

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