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Case Report

A Rare Complication after Urethroplasty: Epidermoid Inclusion Cyst

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Abstract

Epidermoid İnclusion Cysts (EIC) occur as a result of the implantation of the epidermal keratinized squamous epithelial cells and sebaceous glands into the dermis and subcutaneous tissue after trauma and surgical interventions. A 5-year-old boy with a penile EIC who was operated elsewhere at the age of 1 year for an anterior hypospadias with a usage of skin graft covering urethroplasty is presented and discussed with regard to the foregoing literature. In order to avoid psychological and surgical trauma that can be seen after circumcision and hypospadias surgery in children, all the surgical interventions should be performed carefully. And during surgical intervention implantation of the epidermis into the dermis and subcutaneous tissue should be avoided.

Introductıon

Epidermoid İnclusion Cysts (EIC) occur as a result of the implantation of the epidermis into the dermis and subcutaneous tissue [1,2]. These masses typically present as painless swellings. A 5-year-old boy with a penile EIC who was operated for hypospadias with a usage of skin graft covering urethroplasty is presented and discussed in the light of relevant literature.

Patient

A 5-year-old boy was admitted with a diagnosis of ventral penile mass. The patient had been operated at the age of 1 year for hypospadias. Initially the mass was reported to be small, but later it started to grow rapidly (Figure 1). Under general anesthesia with a vertical insicion on the ventral aspect of the penis, the cystic mass was totally excised (Figures 2 and 3). Histopathological examination revealed an EIC with a dimension of 2x1.5x0.7 cm. The cyst had a capsule at the outer surface and contained keratinized material inside. Postoperative follow-up was uneventful.

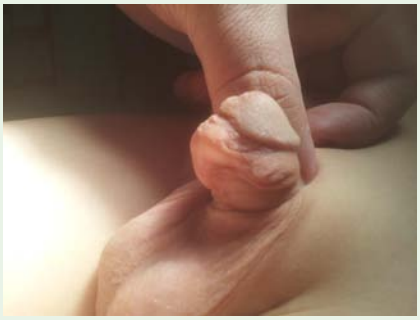

Figure 1: Preoperative appearance of penile EIC.

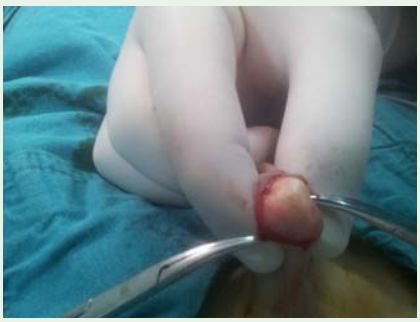

Figure 2: Operative view of EIC during excision.

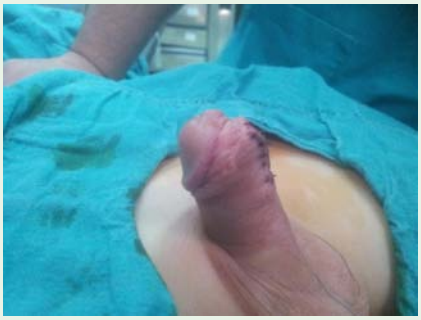

Figure 3: Postoperative view of the penis after removal of EIC.

Discussion

EICs occur as a result of the implantation of the epidermal keratinized squamous epithelial cells and sebaceous glands into the dermis and subcutaneous tissue [1,2]. These masses are real cysts containing keratized material and are surrounded by keratinized squamous epithelial cells.

They can be congenital or acquired. Abnormal embryologic closure of the median raphe is postulated to represent congenital forms of penile EIC [3]. In terms of acquired etiological factors different theories have been proposed including penile surgery and trauma. It is stated that epidermal cells are implanted within a circumscribed space of the dermis during penile surgical interventions such as circumsicion or hypospadias surgery [2,4,5]. Idiopathic forms of penile EIC have also been described [6]. EICs can be single or multiple with variable size. Accumulation of epidermal desquamations, secretions and debris in a closed space leads to formation of a cystic and often painless swelling that gradually increases in size over time [7]. The cystic mass at the ventral aspect of the penile shaft in the presented case was initially small, but later the family stated that it started to grow rapidly (Figure 1). Physical examination is all that is needed in diagnosis. In doubtful cases ultrasonography and other radiological evaluations may be used for confirmation of the diagnosis. The differential diagnosis of penile EICs include urethral diverticula, urethrocutaneous fistula, dermoid cysts or teratoma [3]. Concerning our case, physical examination was enough to diagnose EIC and no other radiological modalities were used.

Complications regarding EIC have been reported including rupture and release of keratin that leads to inflammatory reaction, infection, hematoma and rarely carcinomas [8,9]. With regard to our patient, although there is a relatively long time period of 4 years between the initial hypospadias surgery and surgical excision of penile EIC, we did not observe any complications during pre- and postoperative period. Nevertheless, once EIC has been detected at the penis, surgical excision of the mass should be a matter of necessity rather than of choice to avoid complications.

The management of penile EIC is complete surgical excision. Meticulous dissection of the mass is necessary to avoid local recurrence. The capsule of the EIC should not be violated during surgical excision otherwise local implantation of epidermis into dermis may lead to recurrence during follow-up period.

Histopathological examination is necessary to confirm the diagnosis of EIC. Typically these cystic masses are lined by keratinized stratified squamous epithelium containing sebaceous material inside [7]. With a histopathological diagnosis of EIC, there is no recurrence at 3 months follow-up in our patient.

During childhood period, penile EICs are rarely seen and can mimic other disease states. Surgical treatment, if performed early, can prevent complications such as infection, hematoma and rarely carcinomas. Most patients with EIC were reported following circumcision [10,11]. An EIC of the penis following urethroplasty causing an urethro-cutaneous fistula has also been reported [3]. To our knowledge, there is no pediatric patient in the English language literature with a penile EIC after hypospadias surgery. Presented child is probably the first case of EIC following urethroplasty without other complications of hypospadias.

In order to avoid psychological and surgical trauma that can be seen after penile surgical interventions in children, all the surgical procedures should be performed carefully and implantation of epidermis into dermis and subcutaneous tissue should be avoided. The possibility of this diagnosis should be kept in mind for the patients with penile cystic massses and managed accordingly.

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