Epidermoid Cyst of the Scrotum: A Clinical Case

Tomasz Ząbkowski, Marcin Wajszczuk

Urology Clinic of the Military Medical Institute, Szaserow 128, 00-909 Warsaw, Poland.

Corresponding Author:

Tomasz Ząbkowski, MD
Szaserów 128, 00-909, Warsaw, Poland.

Tel: +48 791 533 555
E-mail: urodent@wp.pl

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INTRODUCTION

Epidermoid cysts are the most common epithelial cysts. They are well encapsulated cysts and histologically characterized by a cystic lining of stratified squamous epithelial cells and no cutaneous adnexal structures in the stromal tissue.[1] They are within the skin slowly growing benign tumors of the retention cyst's character filled with sebaceous and keratinous masses and containing elements of hair follicles. These are single or multifocal spherical nodules of size from a few millimeters to a few centimeters mostly occurring on the scalp, the face, the trunk and in the genitals' area. Their content is dense and resembles the porridge and the cottage cheese. They are covered with the unchanged, slightly red skin.

The epidermoid cyst's multiplex of the scrotum forming multisegmental and multifocal tumors of long term course are often hereditary. The diagnosis is based on appearance of the change. The treatment consists in a surgical removal of the tumor along with the capsule. The prognosis is favorable. When only the content of the cyst is evacuated and the cyst's capsule is not removed the recurrence can occur.

As follicular disruption is important in the pathogenesis of many epidermoid cysts, multiple epidermoid cysts may occur in individuals with a history of significant acne vulgaris. Multi-

Figure 1. The epidermoid cyst's multiplex of the scrotum.

ple cysts may also occur in the setting of Gardner syndrome (familial adenomatous polyposis) and in nevoid basal cell carcinoma (BCC) syndrome.[1] Multiple scrotal cysts may lead to scrotal calcinosis via dystrophic calcification.[1] Non-inflamed epidermoid cysts are usually asymptomatic, but, with pressure, cyst contents may be expressed that may have an objectionable odor. Rupture of the cyst wall can result in an intensely painful inflammatory reaction, and this is a common reason for presentation to a physician. Development of a BCC or squamous cell carcinoma (SCC) within an epidermoid cyst is a very rare event.[1]

Histologic examination shows a cystic cavity filled with laminated keratin lined by a stratified squamous epithelium including a granular layer. A surrounding inflammatory response with both acute and chronic granulomatous inflammation may be seen as evidence of prior rupture. In individuals with Gardner syndrome, some cysts show, as a characteristic feature, columns of pilomatricoma-like shadow cells projecting into the cyst cavity.[1] Scrotal nodules without any connection with the testis, the epididymis or the spermatic cord occur rarely. Their etiology and histogenesis are not sufficiently explained. The first cases of

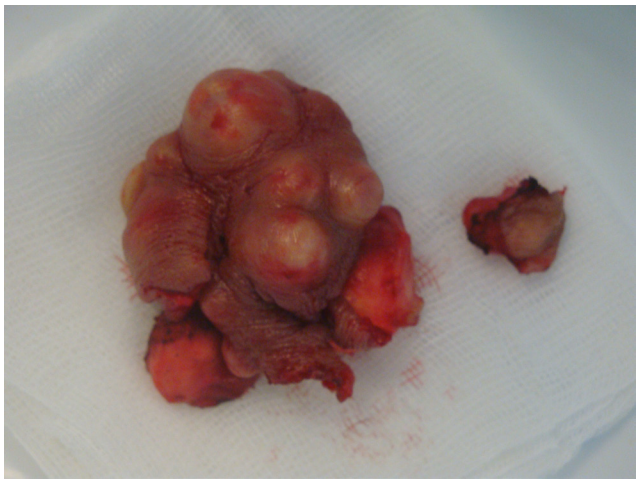

Figure 2. The epidermoid cyst's multiplex removed separately and as a segment of nodules (Left). Little, satellite changes about one millimeter in diameter (Right).

the epidermoid cyst were presented by Dockerty and Prestly in 1942. According to Rauschmeier 50% of all benign neoplasms of testes are epidermoid cysts. These are cysts of a sharply limited wall of the connective tissue lined with the cornifying squamous epithelium containing the desquamated epithelium. They differ from the dermoid cyst because they arise only from one germ layer.[2,3]

CASE REPORT

A forty years old male patient (his medical history–50533/2011) was admitted to the Clinic of Urology in Warsaw because of numerous fusing nodules of the scrotum. According to the patient interview, it was concluded that the first skin changes occurred about ten years ago. Their sizes as well as the quantity were gradually increasing what inclined the patient to the medical consultation. The skin changes occurred only in the scrotum area, no remote metastasizes was observed. The patient has not visited the urologist till now because he was ashamed of his disease. He also denied similar complaints in members of his family. The general condition of the patient was good. The numerous, hard and fusing nodules on the skin of the scrotum were shown during the clinical examination, in diameter from 2 millimeters to about 2.5 centimeters. Inguinal lymph nodes were impalpable. No abnormality was observed during the physical examination. No deviation in the area of testes and epididymis were revealed according to US in course of the hospitalization (Figure 1). Based on a medical history and a physical examination, the steatocystoma multiplex of the scrotum was shown. The patient was qualified for the surgery. The nodules were removed under spinal anesthesia. Because of a focal accumulation of the changes and their dissemination they were removed both separately and in several blocks. Little, satellite changes about one millimeter in diameter were revealed intraoperatively on the rims of larger nodules.

When the lesions were surgically removed, they were given to a histopathological examination. During the histopathological examination the cyst of a sharply limited wall of the connective tissue lined with the cornifying squamous epithelium was characterized. Inside the cyst there were desquamated, keratinized cells of the squamous epithelium with multifocal calcifications.

The intra- and postoperative course showed no complications. The patient was discharged on the second day after the surgery. During the consultations 2 weeks after the surgery, apart from the scar, no other pathological symptoms were observed.

DISCUSSION

An epidermoid cyst is the most common benign simple epithelial cyst without malignant potential, mostly found on the scalp, the face and the back, however, in the urological spectrum it often occurs in testes or on the skin of the scrotum.[4] It is characterized histologically by the cyst lining of stratified squamous cells and loosely packed lamellae of keratin debris, cholesterol and water without teratomatous elements or skin appendages in the stromal tissue.[4] The pathogenesis of the epidermoid cyst is not precisely known, but there are different theories about the embryonic origin of this lesion:[5]

- They arise from the ectopic cutaneous tissue due to dislocation of this tissue into the neighboring area.
- They are the end results of the monolayer teratoma from germ cells.
- They occur due to a traumatic implantation of the epidermal tissue into the dermis and the subcutis.

However, in the case of the extratesticular scrotal epidermoid cyst, they are believed to be an abnormal closure or the associated degenerative process of the median raphe and the urethral groove.[6,7] The deeply located scrotal steatocystomas can suggest tumors of the testes, however, well performed ultrasonography excludes their presence unequivocally.

A characteristic, ultrasonographic picture of the scrotum is the echoless area arising from tissues of the thin wall's cyst, sharply limited with enhancement of the ultrasound wave. Irregular dispersed reflections of the ultrasound wave inside the cyst occur more rarely or the areas of enhanced and reduced laminated repercussions of the ultrasound wave and in case of capsule calcification, with acoustic shadows.[8]

Initially scrotal cysts were felt to be true sebaceous cysts, perhaps because of their clinical similarity to steatocystoma multiplex, but histologic examination does not reveal sebaceous glands. Some investigators have suggested that scrotal cysts represent primary calcifications without a pre-

cursor cyst or other structure. When noninflamed scrotal cysts are evaluated, they show the typical features of an epidermoid cyst. Mixed cysts may be slightly more common on the scrotum.[9] A complete removal of the cyst is the only choice of treatment because no neoplastic malignant lesion or remote metastases were reported in the literature contrary to the proper skin's cysts which can be malignant.

CONFLICT OF INTEREST

None declared.

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