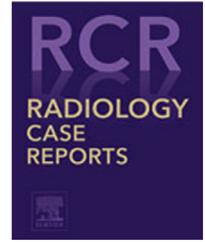


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## Case Report

# Multiple scrotal and testicular epidermoid cysts: A rare case report <sup>☆</sup>

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## ABSTRACT

Epidermoid cysts are benign lesions occurring on the skin usually; however, it rarely occurs in the scrotum or testicular area, and even more rarely the association of multiple epidermal cysts on the scrotum and testis. We report a case of multiple epidermal cysts on the scrotum and testis of a 40-year-old man who consulted for scrotal nodules. To our best knowledge, this is the first case to be reported in the literature. In this paper, we will discuss the histogenesis, the ultrasound features, and the complications of scrotal and testicular epidermal cysts.

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## Introduction

Epidermal cysts are benign masses of epithelial hyperplasia that are frequently found in hair-bearing areas [1], it rarely occurs in the scrotum [2], with only 2 cases reported in the literature so far [1], and even more rarely the association of epidermal cysts on the scrotum and testis. We report a case of multiple epidermal cysts on the scrotum and testis of a 40-year-old man who consulted for scrotal nodules. To our best knowledge, this is the first case to be reported in the literature. In this paper, we will discuss the histogenesis, the ultrasound features, and the complications of scrotal and testicular epidermal cysts.

## Case report

A healthy, 40-year-old male complained of small multiple, firm, painless nodules within scrotal skin, which had first appeared at age 16. He reported that the nodules had been slowly increasing in size and number over the last few years. Because the patient felt embarrassed by the lesions, that is why he did not consult early. His past medical/surgical history, including family diseases and scrotal traumatic history, was unremarkable. Although the patient was a smoker, cutaneous examination revealed 6 firm, nontender, painless, yellowish, and subcutaneous nodules beneath the scrotal skin, measuring 0.6–2.0 cm in size (Fig. 1); the nodules were soft and mobile in regard

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**Fig. 1 – Clinical appearance of subcutaneous nodules beneath the scrotal skin on 40-year-old male.**

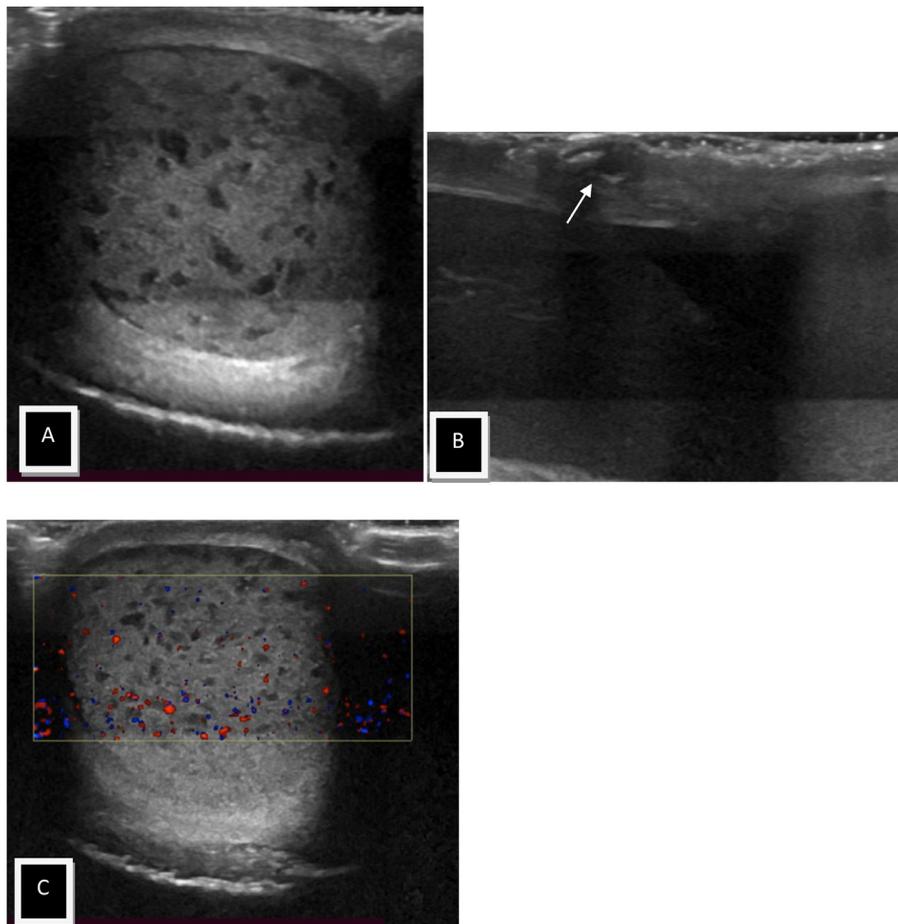
to the skin. There were no signs of inflammation of the superficial skin or inguinal lymphadenopathy. Further physical examination did not reveal any changes. Clinically, multiple scrotal inclusion cysts were suspected. The patient was then

referred to our department for a scrotal ultrasound, which revealed numerous anechogenic lesions, mostly in the testicles (Fig. 2A) but also in the scrotal tunics (Fig. 2B). The nodules show no signals on the color flow Doppler (Fig. 2C). Bilateral epididymis and bilateral spermatic cords were of normal size, shape, and echotexture. There was no free fluid in the tunica vaginal sac. The conclusive diagnosis was multiple scrotal and testicular epidermoid inclusion cysts. The excision of scrotal nodules had been performed. Histopathology confirmed epidermal inclusion cyst with no evidence of malignancy. Two weeks after the patient was discharged, the patient came to the outward clinic and no complication was found.

## Discussion

Epidermoid cysts are the most common benign testicular neoplasm comprising 1% of all testicular masses [1], Recently, listed as teratoma of prepubertal type [2], and they are less prevalent in the extra testicular area [3]. Primarily prevalent during the second to fourth decades of life [4].

Although the epidermoid cyst's histogenesis is not yet completely understood, there are several hypotheses regard-



**Fig. 2 – Scrotal ultrasound revealed a numerous anechogenic lesions, mostly in the testicles (A) but also in the scrotal tunics (B, white arrow). The nodules show no signals on the color flow Doppler (C).**

ing the lesion's prenatal origin: They develop from ectopic cutaneous tissue as a result of tissue dislocation into a nearby region, they are the ultimate result of a monolayer teratoma from germ cells, and trauma-induced implantation of epidermal tissue into the dermis and subcutis, among other causes [3,5]. They have been suggested to be that in the case of the scrotal epidermoid cyst, an aberrant closure or a related degenerative process of the median raphe and urethral groove [3,6,7].

Clinically, epidermoid cysts are asymptomatic, with painless mass or nodules, except in cases of infection, rupture leading to inflammation of adjacent structures, or large size interfering with the functionality of adjacent organs [8].

Scrotal ultrasonography represents the imaging method of choice for the evaluation of scrotal disease [5]. First of all, it allows us to determine the exact location testicular or extra testicular area; second, it allows us to distinguish between an echostructure that is cystic and one that is solid. The sonographic appearance of an epidermal cyst varies from an anechoic nodule to a hyperechoic, solid-appearing mass, depending on its content. Typically, an epidermoid cyst appears as a well-defined hypoechoic lesion with numerous dispersed reflectors from keratinous debris and posterior sound enhancement [5]. In about 60% of the testicular epidermoid cysts, the classic onion-ring phenomenon is present [9], which was first described by Malvica [10], with alternating hyperechogenicity and hypoechogenicity layers representing layers of compacted keratin and desquamated squamous cells [9,9]. On the color flow Doppler, no sign of internal vascular signals is revealed [5], and it is considered a distinctive finding recently [9]. These morphologic features can also be identified by scrotal MRI, and the cyst core's avascular nature is shown by the absence of enhancement after gadolinium [9,11].

Given its location near a potentially infectious area, the major complication remains the risk of infection of epidermoid cysts from the genitourinary tract [5]. Untreated, it can spread into the surrounding cysts and eventually into the scrotal wall, with all its complications including necrotizing fasciitis of the scrotum and septicemia [5].

On anatomopathologic examination, epidermoid cysts are encapsulated cysts with keratin layers, fibrous capsule and lined with simple squamous epithelium. Calcification can also be noted within the wall or the cyst [1,12].

Local excision is the treatment of choice for epidermoid cysts of the scrotum or testicular [1].

## Conclusion

The particularity of our case is the association of 2 atypical locations of epidermoid cysts as well as the number and the

typical aspect in ultrasound allowing us to establish the diagnosis which was confirmed later by histology.

## Author contributions

All authors contributed to this work. All authors have read and approved the final version of the manuscript.

## Patient consent

Written informed consent for publication was obtained from patient.

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