Total excision of lumps and reconstructed the scrotum wall in situ for multiple epidermal cysts of scrotum: a case report

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Case report

Keywords: Scrotum, Multiple, Epidermal cysts, Histopathologic

Posted Date: May 6th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-413447/v1>

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Abstract

Background

Epidermoid cysts are the common benign epithelial cysts that may occur in the dermis or subcutaneous tissue. It have been observed in several organs,especially in the skin of the scalp, ear, face, and back.However, the multiple epidermal cysts over the scrotum is a rare condition. We report a case of total excision of lumps and reconstructed the scrotum wall in situ for multiple epidermal cysts of scrotum.

Case presentation:

A 23-year-old man presented with multiple lumps on the scrotum skin for more than 7 years. On physical examination, multiple lumps were found arising from the scrotal skin, the largest one measuring 1.5 cm. Ultrasonography of the local part indicated testes of normal consistency without free fluid in the tunica of scrotum. The laboratory workup revealed that the blood cell, blood electrolyte and thyroid hormone were within the normal limits.A total excision of scrotal lumps and reconstructed the scrotum wall in situ was performed in this case. And the histopathologic of the specimen is demonstrated an epidermal cysts.

Conclusion

Multiple epidermal cysts over the scrotum are extremely rare, and correct diagnosis depends on the clinical history, radiological dates,clinical appearance,physical features and histopathologic analysis. The accumulation of further cases is needed to help understand the precisely histogenesis, diagnosis, and treatment of this disease.

Background

Epidermoid cysts are the common benign epithelial cysts, comprising 85–90% of all excised cysts [1–2]. It appears as a painless, soft lesion of variable size with intact overlying skin, and may develop anywhere in the body [3]. They present as well-circumscribed firm subcutaneous nodule formed by downgrowth and cystic expansion of the epidermal squamous epithelium. A nodule is filled with keratinous debris and cholesterol or sebaceous materials. In this article, we report a multiple scrotal epidermal cyst of a 23-year-old man with multiple epidermal cysts on the scrotum for more than 7 years,and a total excision of scrotal lumps and reconstructed the scrotum wall in situ was performed in this case..We discuss the diagnosis, evaluation and management of multiple epidermal cysts of scrotum.

Case Presentation

A 23-year-old man presented to our department with the chief complaints of small multiple slow-growing lumps all over the scrotum without pain since 7 years ago. The medical history of him revealed no evidence of tuberculosis, scrotum surgery, scrotal trauma,or previous urinary tract infection. On physical examination, multiple lumps were found arising from the scrotal skin, the largest one measuring 1.5 cm.

The lumps were freely movable non-tender and elastic. There were no palpable groin lymph nodes. The overlying skin showed no abnormality (fig.1.a). Ultrasonography of the local part indicated testes of normal consistency without free fluid in the tunica of scrotum. The laboratory workup revealed that the blood cell, blood electrolyte and thyroid hormone were within the normal limits. A complete surgical excision of the lumps, including the elliptical covering skin, was performed, and we reconstructed the scrotum wall in situ without skin graft. The lumps were located within the subcutaneous layer and sharply demarcated from surrounding structures (fig.1.b). On gross inspection, they were filled compactly with a soft, yellowish-white pasty material. The cystic wall showed no solid portion without evidence of secondary foreign body-type granulomatous reaction or abscess. On histological examination of the excised specimen showed a cystic structure which composed of thin layers of fibrous connective tissue. The cyst-wall is lined with layered squamous epithelium. The cyst-wall cells are arranged regularly, without atypia, and the cystic cavity was filled with plenty of homogeneous red-dyed structureless keratin materials (fig.2). There were no teratomatous components or adnexal structures such as hair follicles, sebaceous glands, or sweat glands within the cystic lumen. The patient recovered well without any complications.

Discussion

Epidermoid cysts are very common tumors in the subcutaneous tissues and have been observed in several organs, especially in the skin of the scalp, ear, face, and back. Epidermal cysts have been reported in the perineum, penis, testis, and scrotum. Extratesticular scrotal epidermoid cysts are relatively rare in contrast to intratesticular ones. The precise histogenesis of the epidermoid cyst is still unknown. However, the histogenesis of the extratesticular scrotal epidermoid cyst was considered for an abnormal closure or associated degenerative process of the median raphe and urethral groove [4, 5]. They are generally devoid of malignant potential, but malignant transformations of basal cell carcinoma or squamous cell carcinoma from epidermal cysts have been reported [6, 7].

Multiple epidermal cysts over the scrotum is a rare disease, and these lesions used to be ignored by the patient because of its painless. Some patients want a treatment just because of its unaesthetic. Although a few cases were reported of epidermal cysts infected. But the cyst being in proximity with potentially infective area may catch infection from it. If the cyst becomes infected, it will become painful and may burst to discharge pus. Single infected cyst can be drained without complications. It may spread in surrounding cysts and finally scrotal wall without a timely treatment. Once the scrotal skin is infected, the infected part has to be widely excised to avoid necrotizing fascitis of the scrotum and septicemia [8].

Scrotal ultrasonography is usually the first and the most important imaging modality to investigate scrotal and inguinal pathologic conditions, which can reliably differentiate extratesticular from intratesticular ones, as well as cystic from solid ones, with very high accuracy. The sonographic appearance of an epidermal cyst varies from an anechoic lesion to a hyperechoic, solid appearing mass, depending on its content. Although there are no specific pathognomonic findings to diagnose the epidermoid cysts accurately, on the color flow Doppler sonography, they are often appeared with

well-demarcated hypoechoic masses with multiple scattered reflectors from the keratinous debris and posterior sound enhancement without internal vascular signals [8].

On MRI, epidermal cysts are described as high-intensity, well-defined solid masses surrounded by a low-signal capsule on T2-weighted imaging[9]. On histological, the cyst-wall is lined by stratified squamous epithelium filled with laminated keratin, cholesterol crystals, and debris [10, 11]. The diagnostic process of epidermoid cysts of the scrotum depends on the clinical history, radiological dates, clinical appearance, physical features and histopathologic analysis. There are few reports of malignant transformation of epidermoid cysts. Since epidermoid cysts of the scrotum are not malignant, complete surgical excision of the cyst including the elliptical covering skin with follow up is sufficient as the treatment of an epidermal cysts. If the epidermal cysts is gather together in one area over the scrotum skin, a total excision of the lesion scrotum wall should be taken, and the wound could be covered by the skin graft when it is difficult to suture the skin directly.

Conclusions

In summary, multiple epidermal cysts over the scrotum are rare, and correct diagnosis depends on the clinical history, radiological dates, clinical appearance, physical features and histopathologic analysis. The accumulation of further cases is needed to help understand the precisely histogenesis, diagnosis, and treatment of this disease.

Abbreviations

MRI

Magnetic resonance imaging.

Declarations

Acknowledgements

We thank the patient for allowing us to publish his case.

Availability of the data and materials

All the data are available in the patient's medical record.

Authors' contributions

SCW and GYL was responsible for this patient's operation, conducted a literature search and drafted with the manuscript. HX was involved in the pathological diagnosis of the mass. WBN,XZ and FL revised the manuscript and wrote the final version of the manuscript. All authors have read and approved the final manuscript.

Funding

Not applicable.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Written informed consent was obtained from the patient for the publication of this case report and the accompanying images.

Competing interests

The authors declare that they have no conflict of interest.

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Figures

Figure 1

Photograph of the scrotal wall before surgical excision shows multiple nodule (a), and after surgical excision (b).

Figure 2

Epidermoid cyst composed of thin layers of fibrous connective tissue. The cyst-wall is lined with layered squamous epithelium. The cyst-wall cells are arranged regularly, without atypia, and the cystic cavity was filled with plenty of homogeneous red-dyed structureless keratin materials (hematoxylin and eosin, 40x).