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Case Report

Idiopathic scrotal calcinosis: a rare case report and review of pathogenesis and surgical management

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ABSTRACT

Scrotal calcinosis is an uncommon benign disorder of the scrotal skin characterized by multiple calcified intradermal nodules that occurs in the presence of normal calcium and phosphate metabolism. The pathogenesis of scrotal calcinosis is still controversial. Our Aim is to report this disease in 33-years-old man and review the pathogenesis and surgical management. We presented 33-years-old male patient with a 10 year history of painless scrotal nodules which gradually increased in size and number. Physical examination revealed multiple scrotal nodules with diameter of 5-10 mm, respectively. The nodules were firm and skin-colored. The nodules grow from small bud with chalky white exudative discharge but no history of vesicle, papule or any sign of inflammation. The patient's symptoms were mild itching with no pain. He had no history of trauma, malignancy, or any metabolic disorder. His old brother had a history with the same complained. Laboratory findings including serum electrolyte and level of creatinine, urea, calcium and phosphorus, were within normal limit. The patient was performed biopsy before procedure showed dystrophic calcinosis appearance. We performed wide local excision of lesion with primarily closure with good postoperative outcome, with histopathology result calcinosis subcutaneous at region scrotum. Dystrophic scrotal calcinosis is a benign condition which can affect a patient's quality of life. Irrespective of the etiology, surgical excision seems to be gold standart is required both for confirming the diagnosis as well as for treatment but occasionally may require complex scrotal reconstruction to provide a good clinical outcome with good patient satisfaction.

Keywords: Calcinosis, Calcification, Dystrophic, Scrotal

INTRODUCTION

Calcinosis cutis is a disorder of deposits of calcium in the dermis. There are three forms. In the metastatic form, the patient has abnormal serum levels of calcium, phosphorus, or both. In the dystrophic form, the patient has normal serum levels of calcium and phosphorus, but local conditions such as inflammation favor calcium deposit formation. If neither of the above applies, the condition is considered idiopathic.[1] Scrotal calcinosis was first described in1883 by Lewinski.[2]

Few cases of scrotal calcinosis have been reported in the literature and there is still a controversy about the pathogenesis of this rare condition. Despite the confusion with the origin of this condition, surgery seems to be the treatment of choice for resolving the problem. We report

a case of dystrophic scrotal calcinosis which was treated by primary excision at our institute.

CASE REPORT

A 33 years male patient presented with a 10 year history of scrotal nodule which had gradually increased in size and number. Physical examination revealed multiple scrotal nodules with diameter of 5-10 mm (Figure 1).

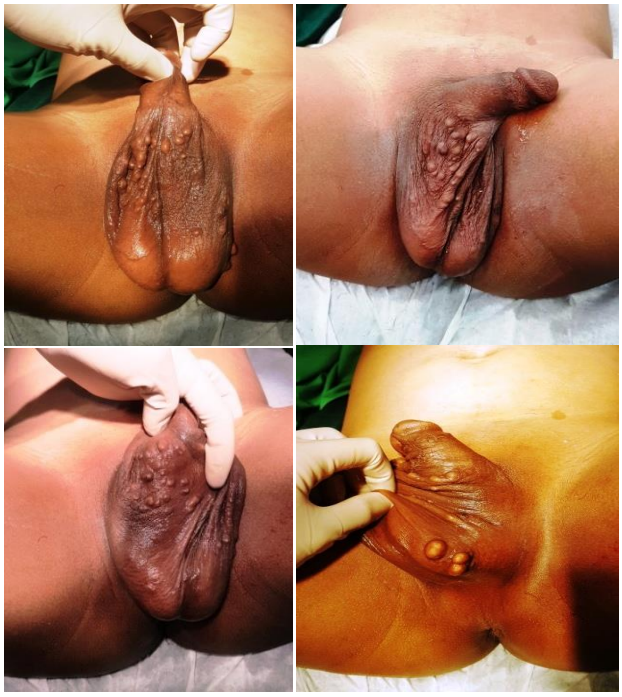

Figure 1: Scrotal calcinosis before operation.

The nodule was firm and skin-colored. The nodule grows from small bud with chalky white exudative discharge but no history of vesicle, papule or any sign of inflammation. The patient's symptoms were mild itching with no pain. He had no history of trauma, malignancy, or any metabolic disorder. His old brother had a history with the same complained.

Laboratory finding including serum electrolyte and level of creatinine, urea, calcium and phosphorus, were within normal limit. The patient got biopsy before procedure with dystrophic calcinosis appearance. Wide local excision of lesion with direct closure was done with good postoperative outcome.

The intraoperative and postoperative findings were shown in Figures 2 and 3. Histology of the excised lesion showed fibrocolagen calcified material with hyalinization and some limfosit.

DISCUSSION

Calcinosis cutis is a disorder of deposits of calcium in the dermis. There are three forms. In the metastatic form, the patient has abnormal serum levels of calcium, phosphorus or both. In the dystrophic form, the patient has normal serum levels of calcium and phosphorus, but local conditions such as inflammation favor calcium deposit formation. If neither of the above applies, the condition is considered idiopathic.[1]

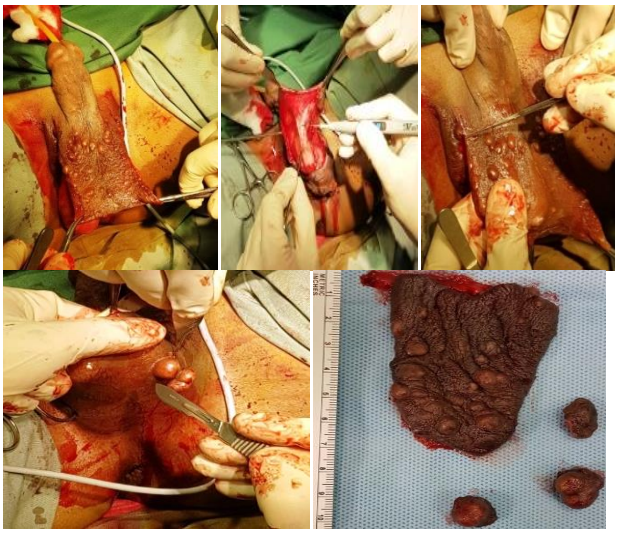

Figure 2: Intra operation.

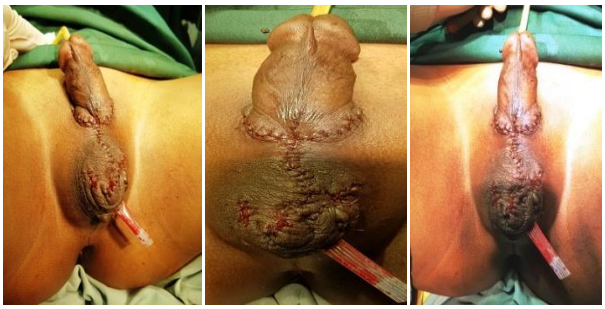

Figure 3: Post operation.

Scrotal calcinosis is characterized by calcific deposits with surrounding foreign body type granulomatous inflammation in the scrotal skin. This benign scrotal lesion, though commonly occurs between third and fourth decades of life, in our case the patient was 33 years old. The lesion affects both adult and pediatric age groups with age range between 9 to 85 years reported in the literature.[3]

Controversy also exists regarding the pathogenesis of scrotal calcinosis. There is considerable debate as to whether this term accurately applies, as some investigators suggest that scrotal is truly a late presentation of epidermal inclusion cysts that have undergone dystrophic calcification. Numerous theories about the pathogenesis of scrotal calcinosis have been proposed. Previously, these lesions have been attributed to sebaceouscysts, calcified steatocystoma, fibroma, atheroma and xanthoma. Two studies suggested that the epithelial lining may be obscured in the course of time by inflammation of epidermal cysts followed by

calcification, rupture of the cyst wall and granulomatous proliferation.[4] More recently, it has been suggested that they are the result of dartos muscle necrosis and degeneration with resulting dystrophic calcification of the dartos muscle.[5] Regarding our patient with family history of the same complained, study found no literature mentioned genetic as an etiology.

While the lesions are initially skin-colored, they become yellowish as they grow. This process takes a long period of time that patients represent a history of slow growing nodules usually in a period of more than 10 years, same result was seen in our patient with 10 years growing nodule.

Differential diagnosis are teratoma, gonadoblastomas, leydig cell tumors, calcified onchocercoma, neurofibroma, ancient schwannomas, steatomas, lipomas, fibromas, and scrotal calcinosis may also be due to chronic epididymitis, calcified appendix testis, appendix epididymis, and sperm granuloma due to sperm extravasation and hematoma.[6]

For diagnosis of scrotal calcinosis, Ito et al. performed an immune-histochemical study using antibodies against CEA, epithelial membrane antigen (EMA), and gross cystic disease fluid protein-15 (GCDFP-15) to describe dystrophic scrotal calcinosis originating from eccrine cysts. They found a positive reaction for CEA and EMA in the luminal cells and in the contents of a large cyst and ductal structures.[4] Diagnosis is confirmed by biopsy.

Because most patients with scrotal calcinosis are asymptomatic, they usually seek medical advice for cosmetic reasons.[4] If swelling is <4 mm, pinch and punch excision is advised. Indications for surgery include relief of symptoms and preservation of scrotal cosmesis. The only treatment recommended for scrotal calcinosis is surgery, which allows for pathologic confirmation of the disorder. If it is massive, subtotal excision of the scrotal wall is preferred. If it is extensively involved, excision followed by complex scrotal reconstruction using meshed split thickness skin graft as the scrotal skin is rugged. Recurrence is very low mainly due to microscopic foci of calcification left over.[6]

CONCLUSION

Dystrophic scrotal calcinosis is a benign condition which can affect a patient's quality of life. Irrespective of the etiology, surgical excision is required both for confirming the diagnosis as well as for treatment. Further research needed to consider genetic involvement in pathogenesis of scrotal calcinosis.

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