

# Idiopathic Scrotal Calcinosis: Cytodiagnosis of Rare Entity in Two Cases

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## ABSTRACT

**Introduction:** Idiopathic calcinosis of the scrotum is a rare cutaneous disorder of benign nature characterized by the existence of multiple, hard, calcified and asymptomatic nodules within the scrotal skin that occur without any metabolic or systemic disorder. The pathogenesis of this entity is still controversial. It can extensively affect the scrotal skin, but primary closure is usually achievable with good esthetic outcomes.

**Case series:** We present two cases of idiopathic scrotal calcinosis in a 33 year old male and 20 year old male clinically suspected as sebaceous cysts and diagnosed on imprint cytology with confirmation on histopathology.

**Conclusion:** This case series highlights the significant role of imprint cytology in the quick diagnosis of the rare entity of idiopathic scrotal calcinosis.

**Keywords:** Imprint Cytology, Calcinosis, Idiopathic, Scrotum

## INTRODUCTION

Idiopathic scrotal calcinosis is rare and benign condition involving scrotal skin characterized by multiple, small, nodular, painless and hard swellings of varying sizes in the absence of any metabolic and systemic disorder. The nodules may vary in size and number and usually appear during childhood or early adulthood. Histopathologically, scrotal calcinosis shows deposits of calcium and phosphates within the dermis.<sup>1</sup> Imprint cytology can be utilized as an excellent adjunct diagnostic tool in such cases, however there are very few case reports in this regard. We report a series of two clinically unsuspected cases in 33 year old and 20 year old male patients.

## CASE REPORTS

**Case 1:** A 33 year old male patient presented with complains of multiple nodular swellings over scrotum since 5 years. Local scrotal examination revealed about 6 to 7 small nodular swellings ranging in size from 0.5 to 2 cms in diameter. A clinical diagnosis of sebaceous cyst was entertained.

**Case 2:** A 20 year old male patient presented with itching over scrotum since 6 months which was worse at night. On local examination two nodular swellings ranging in size from 0.5 to 1 cms in diameter involving the scrotal skin were noted. A clinical diagnosis of epidermal inclusion cyst was entertained.

Both the patients denied history of trauma. There was no history of any other symptoms including those of metabolic, systemic or endocrinological, neoplastic or autoimmune disorder. Haematological and biochemical investigations were unremarkable in both cases.

Excision biopsy of the lesions was carried out. In the first case the excised scrotal skin measured 5 x 4 cm in size with multiple nodular elevations and hypopigmented areas without ulceration or discharge on the skin surface. On cut section, the nodules

were firm, white with multiple chalky and gritty areas (Fig 1). The second case also revealed almost similar gross findings. Imprint smears from these nodules yielded chalky white granular material.

Haematoxylin and Eosin stained cytosmears were acellular and showed crystalloid granular material (Fig 2 a). May-Grunwald Giemsa (MGG) stained smears (Fig 2b) showed bluish amorphous granular material confirming the presence of calcium deposits. There was no evidence of epithelial cell. Based on these cytological findings, a diagnosis of idiopathic scrotal calcinosis was provided. On light microscopy there were multiple deposits of basophilic calcified material in the dermis (Fig 3 a and b) along with a foreign body giant cell reaction around few deposits. No evidence epithelial cystic structure especially squamous or any of its remnants was noted around the deposits. The special stain of Von Kossa (Fig 4) confirmed the diagnosis. Postoperative period was uneventful and there was no recurrence on follow up in both patients.

## DISCUSSION

Idiopathic scrotal calcinosis, first described by H.M.Lewinsky in 1883, is a benign, rare subtype of calcinosis cutis characterised by deposition of calcium in the form of multiple nodular hard swellings over scrotum. It commonly occurs in 20-40 years age group.<sup>2</sup>

The etiology of scrotal calcinosis is controversial and there is no consensus about the pathogenesis of this condition. The possibilities explored include dystrophic calcification of pre-existing epidermal cysts, eccrine duct, eccrine epithelial cysts and the degenerated dartos muscle.<sup>3</sup> This may also occur in association with connective tissue diseases like scleroderma, dermatomyositis, Systemic lupus erythematosus or secondary to minor trauma, an impacted foreign body and inflammation. The granulomatous reaction seen surrounding a few of the deposits is speculated to be due to rupture of the cysts with loss of their wall. Consequently no remnants of keratinous cysts or their lining have been demonstrated.<sup>4</sup>

Calcinosis is found to be of four different types that is dystrophic, metastatic, idiopathic and iatrogenic. Dystrophic and idiopathic are of rare types. Dystrophic type is seen in damaged tissues with normal serum calcium and phosphorus levels, metastatic

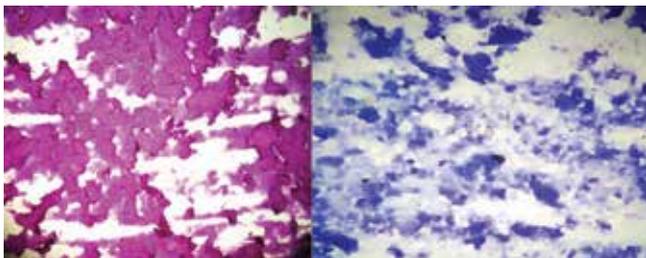
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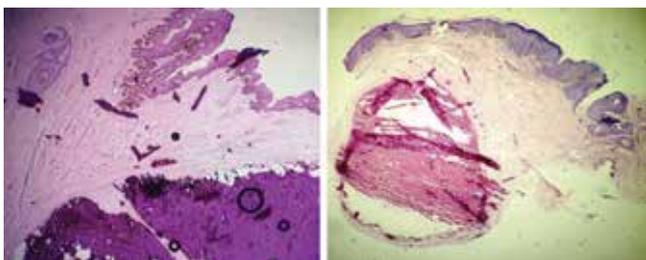
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**Figure-1:** Gross photograph showing the multiple scrotal nodules.



**Figure-2 (a and b):** Microphotograph of cytosmears showing amorphous material suggestive of calcification (a) H & E stain (b) May-Grunwald Giemsa stain; ( $\times 400$  magnification)



**Figure-3 (a and b):** Microphotograph showing lobules of calcific deposits in dermis in case 1 (a) and case 2 (b). (H and E,  $\times 100$ )



**Figure-4:** Microphotograph showing lobules of calcific deposits staining for Von Kossa ( $\times 100$ )

type is seen in normal tissues with metabolic disturbances like hypercalcemia and hyperphosphatemia.<sup>4-6</sup> Most of the patients described including ours do not have any underlying cause to consider metastatic calcification as an etiology.

Imprint smear technique is simple, rapid and does not require sophisticated instruments. The smears show almost perfect concordance in majority of the lesions and hence can be used routinely as an adjunct to histopathology. A reference file of imprint slides with corresponding tissue sections maintained in the laboratory can provide very useful cytological information, aiding in histopathological examination and can become very important teaching tool.<sup>7</sup> There is a dearth of case reports in literature highlighting on the cytological aspect of

diagnosing this condition. The first case of idiopathic scrotal calcinosis on aspiration cytology was reported by Shivkumar et al.<sup>8</sup> Subsequently Sherwani et al.<sup>9</sup> and Dombale et al.<sup>10</sup> also described cytological features of scrotal calcinosis. The absence of epithelial cells in the aspirate helped to differentiate this condition cytologically from a calcified epidermal cyst. The cytomorphological findings depicted in these case reports were identical to our case and corroborated well with the histopathological features.

Treatment of scrotal calcinosis is local excision of scrotal skin with reconstruction which is curative and relapses are rare.

## CONCLUSION

This case series highlights the significant role of imprint cytology in the quick diagnosis of the rare entity of idiopathic scrotal calcinosis. The simplicity, cost effectiveness and rapid reliable results are the further criteria promoting it to be a better option when compared with other techniques.

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