Review Article **CODEN: IJPRNK** **ISSN: 2277-8713**
Basetty Nagaraja, IJPRBS, 2015; Volume 4(4): 162-167 **IJPRBS**

INTERNATIONAL JOURNAL OF PHARMACEUTICAL RESEARCH AND BIO-SCIENCE

SCROTAL CALCINOSIS - A RARE DERMATOLOGICAL DISORDER - A CASE REPORT

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Accepted Date: 06/07/2015; Published Date: 27/08/2015

Abstract: Calcinosis cutis is a Dermatological disorder where deposition of the calcium in the human skin and the site may be variable, but scrotum skin is the rarest site and with abnormal deposition of the calcium salts. The Calcinosis Cutis types are Dystrophic, metastatic, iatrogenic, and idiopathic. Idiopathic and Dystrophic calcinosis cutis are most common. No sex predilection is documented. In general it is a benign, morbidity is related to the size and location of the calcification vascular calcification may result in ischemia and necrosis of the affected organ. Most lesions develops gradually and asymptomatic. The lesions are multiple, firm, whitish dermal papules, plaques, nodules, or subcutaneous nodules. Sometimes, these lesions may be studded with a yellow-white, gritty substance. Lesions may become painful, ulceration with secondary infection. Commonly the lesions spontaneously ulcerate, extruding a chalky, white material. The present study is Idiopathic type and rare site for the study.

Keywords: Calcinosis Cutis, Dystrophic calcinosis, Scrotal Calcinosis

PAPER-QR CODE

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How to Cite This Article:

Basetty Nagaraja, IJPRBS, 2015; Volume 4(4): 162-167

INTRODUCTION

A 50 years old man was admitted and died in Government General Hospital Anantapuramu ,due to the effect of Organophosphorous poisoning and case was sent for the post-mortem examination, during the examination incidentally multiple hard nodules were seen over the skin of the scrotum. The tumour is measuring 6 cms in length 4 cms width and the tumour is primarily diagnosed as calcinosis cutis of the scrotum. No other diseases are seen during the Post mortem Examination. Scrotal Calcinosis is a rare benign disease and site also very rare hence the case is selected for the study. The tumour is dissected and sent for the histopathology examination (Fig:1)

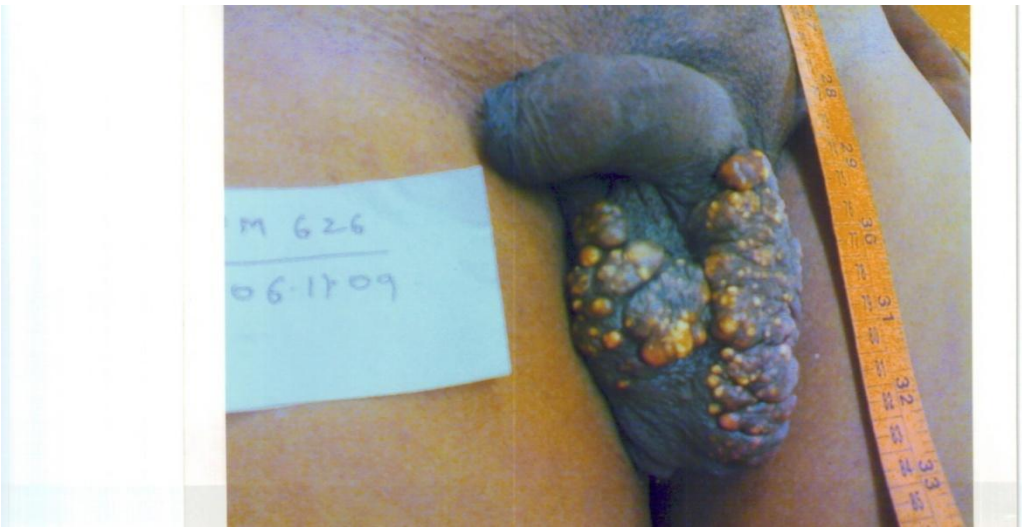

Fig 1: Calcinosis cutis of scrotum.

MATERIALS AND METHODS:

Gross evaluation of the specimen revealed a scrotal skin material 6 cm in length and 4 cm in width, 2 cm in thickness exhibiting round firm nodules. On the cut surface there were multiple calcified nodules with yellowish white appearance measuring between 1 to 20 mm in diameter. Some of them included chulky material. Decalcification was performed and all of the lesions were sectioned serially, and histological Hematoxylen-Eosin, Prussian Blue and Masson Trichrome stained slides were examined.

RESULTS:

Microscopic examination of the whole specimen revealed multiple calcified nodules, stained deeply basophilic with HE stain surrounded by a foreign body type chronic granulomatous

reaction. All of the nodules were located within dermis, and an intact epidermis was overlying the lesions. Most of the nodules revealed similar appearance with more or less granulomatous reaction around them (Figure 2). However there were multiple punctuate pure calcifications and large basophilic masses exhibiting compressed collagen of pseudo capsule without any accompanying inflammation, individually. Chronic granulomatous reaction composed of mostly epitheloid cells and giant cells with a lesser amount of lymphocytes. No organisms or parasites, and no Hemosiderin was detected in the lesions. With serial sections we identified four small epithelial cysts with flattened stratified squamous epithelium and luminal keratin. HPE revealed that there are amorphous, deeply, basophilic, extracellular calcium deposits in the dermis and confirmed the diagnosis of the tumour (Fig:2)

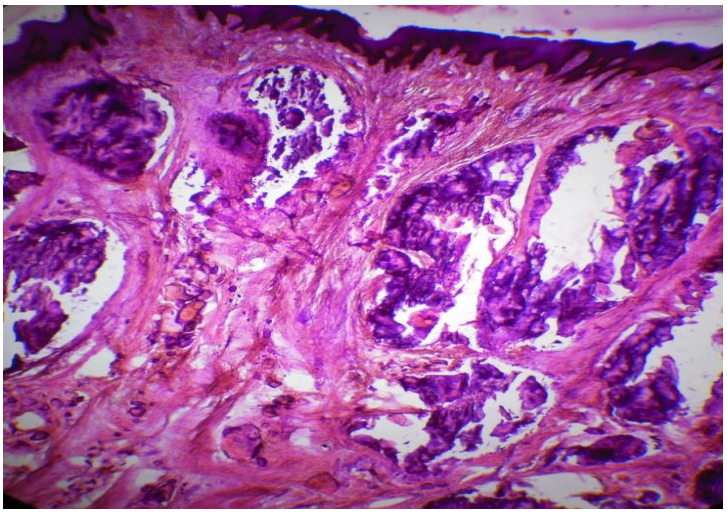

Fig 2 : Amorphous, Deeply, Basophilic Extracellular calcium deposits in dermis. (Haematoxylin and eosin, X10)

DISCUSSION:

Scrotal Calcinosis cutis is a benign disease characterised by cutaneous nodular calcifications in scrotal skin result from deposits of calcium and phosphorus. Scrotal nodules typically begin to appear during childhood or early adulthood can be solitary or grouped, and they are usually bilateral. Pedinculated or polipoid variants were also reported. Calcified nodules not only increase in number, but also become larger throughout life, and they may encircle almost entire scrotum. While the lesions are initially skin-colored, they become yellowish as they grow. On biopsy, granules and deposits of calcium are seen in the dermis, with or without a surrounding foreign-body giant cell reaction. Alternatively, massive calcium deposits may be located in the subcutaneous tissue. According to aetiology Calcinosis cutis is classified into 4

major types .Dystrophic, metastatic, iatrogenic, and idiopathic. A few rare types have been variably classified as dystrophic or idiopathic. The term idiopathic calcinosis cutis is used when no obvious underlying cause can be identified for tissue calcification. Idiopathic calcification can be wide-spread or localized and is described in the scrotum, penis, vulva and breast, with normal serum calcium levels. The underlying mechanism of cutaneous calcification remains unknown.

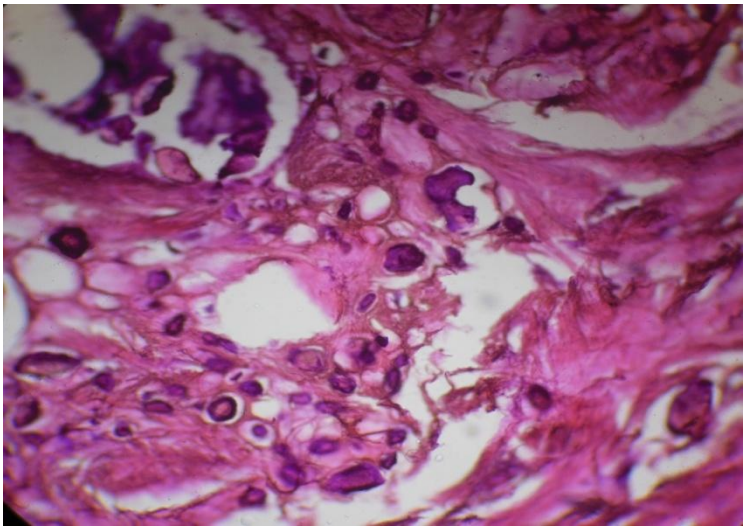

Fig 3 : Calcium deposition in the Dermis in scrotal calcinosis (Haematoxylin and eosin, X10)

In all cases of calcinosis cutis, insoluble calcium compounds are deposited within the skin due to local and/or systemic factors. These salts consist primarily of hydroxyapatite crystals or amorphous calcium phosphate (Fig:3). The pathogenesis of calcinosis cutis is not completely understood and a range of factors allow for different clinical scenarios to occur. High levels of gamma carboxy glutamic acid (Gla), a unique amino acid, have been found in the calcified tissue and urine of patients with calcinosis. Gla found normally in bones and teeth has calcium- and phospholipids-binding properties.

Metabolic and physical factors are pivotal in the development of most cases of calcinosis. Ectopic and Metastatic calcification can occur in the setting of hypocalcaemia and hyperphosphatemia when the calcium-phosphate product exceeds 70 mg^2/dL^2, without preceding tissue damage. These elevated extracellular levels may result in increased intracellular levels, calcium-phosphate nucleation, and crystalline precipitation. Alternatively, damaged tissue may allow an influx of calcium ions leading to an elevated intracellular calcium level and subsequent crystalline precipitation. Tissue damage also may result in denatured proteins that preferentially bind phosphate. Tests of serum calcium, inorganic phosphate, alkaline phosphatase, and albumin levels may be helpful in diagnosis of the case. In Dermatomyositis it is common, In lupus erythematosus it is rare and insignificant. The nodules

most commonly occur on the face and may occur anywhere..The intravenous administration of solutions containing calcium or phosphate may cause the precipitation of calcium salts and lead to calcification. Complications of calcinosis cutis include pain, cosmetic disfigurement and ulceration. The plaques or nodules may impinge on adjacent structures such as joints, resulting in restricted mobility, and nerves, resulting in pain or paresthesia. Destruction of synovial tissue also may result. If the tumour grows in vascular system it cause vascular occlusion which may result in gangrene. Ulceration may be complicated by bacterial infection. The prognosis is determined by that of any underlying disease. Calcinosis cutis alone usually is benign. Severe complications are infrequent.

Recommendations:

Medical therapy of calcinosis cutis is limited and of variable benefit. Based on the condition and severity status, Diltiazem, colchicine, probenecid, aluminium hydroxide, and warfarin are known to have beneficial effect. Minocycline may be another treatment option. Restrict dietary phosphorous when hyperphosphatemia. Restrict dietary calcium intake when hypocalcaemia is present. A ketogenic diet that stresses the consumption of free fatty acids may be helpful in some individuals. An accumulation of ketoacids, the metabolic product of fatty acids, may lower tissue pH and prevent crystallization. Patients should be educated about the underlying disease processes and natural history of their specific disorder.

CONCLUSION:

Scrotal calcinosis, also described as idiopathic calcinosis, is a infrequent benign lesion and its pathogenesis still remains unclear and somewhat controversial these asymptomatic lesions tend to extend slowly within years. Etiology is uncertain. Calcifications that are not associated with tissue damage or metabolic disorders are called idiopathic scrotal calcinosis. Though they are benign they have to be diagnosed and managed to avoid complications.

BIBLIOGRAPHY:

1. Maize J, Metcalf J: Metabolic Diseases of the Skin, in Elder D(Ed): Lever's Histopathology of the Skin. Philadelphia, Lippincott-Raven, 1997, pp 379–382.

2. Saladi RN, Persaud AN, Phelps RG, et al: Scrotal calcinosis: is the cause stil unknown? Jam Acad Dermatol 51 (2 Suppl): 97– 101, 2004.

3. Dare AJ, Axelsen RA: Scrotal calsinosis: origin from dystrophic calcification of eccrine duct milia. J Cutan Pathol 15: 142–49, 1988.

4. Armijo M, Aparicio M, Hernandez I: Idiopathic circumscribed calcinosis of the scrotum. Actas Dermosifiliogr 69(5–6): 121– 126, 1978.

5. King DT, Brosman S, Hirose FM, et al: Idiopathic calcinosis of scrotum. Urology 14(1): 92–94, 1979.

6. Fuzesi L, Hollweg G, Lagrange W, et al: Idiopathic calcinosis of the scrotum: scanning electron microscopic study with X-ray microanalysis. Ultrastruct Pathol 15(2): 167–173, 1991

7. Fisher BK, Dvoretzky I: Idiopathic calsinozis of the scrotum. Arch Dermatol 114: 957, 1978.

8. Michl UH, Gross AJ, Loy V, et al: Idiopathic calcinosis of the scrotum-a specific entity of the scrotal skin: case report. Scand J Urol Nephrol 28: 213–217, 1994.

9. Cecchi R, Giomi A: Idiopathic calcinosis cutis of the penis. Dermatology 198: 174–175, 1999.

10. Fukaya Y, Ueda H: A case of idiopathic vulvar calsinosis; The First in Japan. The Journal of Dermatology 18: 680–683, 1991.

11. Ines Machado Moreira lobo, Calcinosis Cutis-Volume 14,number1,Dermatology on Line Journal

12. Saba Kiremitci,- Scrotal Calcinosis :A Case Report and Review Of Literature. Ankara University Tip Fakultest Mecmuasi,2011,64(1)

13. Suparna Dubey, Scrotal Calcinosis: Idiopathic or Dystrophic Dermatology On Line Journal 16(2):5