Clinic

Mixed variant calcinosis cutis

Fakeha Firdous1, Idrees Akhter Afroz1, Syed Sibghatullah Quadri1, Atiya Begum2

1Department of Pathology, Princess Esra Hospital, Shah Ali Banda, Hyderabad 500 002, Andhra Pradesh, India.
2Department of Pathology, Deccan College of Medical Sciences, Kanchanbagh (PO), Hyderabad 500 058, Andhra Pradesh, India.

Abstract

A 7 year old boy presented with multiple, raised, hard nodules of varying sizes over both elbows and right knee and small milia like lesions over the chin. No punctum was identified. As patient being a minor, consent was taken from father.

Fine needle aspiration cytology (FNAC) revealed chalky white amorphous calcified deposits (Fig 1). Biopsy was done under general anesthesia. Hematoxylin & Eosin stain and Von Kossa stain were done. Histopathological examination of the biopsy revealed calcium salts, uniform basophilia associated with pseudopitheliomatous hyperplasia, foreign body giant cells, and peripheral condensation of connective tissue and absence of chronic inflammation (Fig 2). Silver stain (Von Kossa) was positive (Fig 3). Diagnosis of calcinosis cutis was made.

Other investigations done were normal–serum calcium-8.8mg/dL, serum phosphorus -3.7mg/dL and uric acid levels-6.8mg/dL.

Discussion

Calcinosis cutis as described by Virchow is deposition of calcium phosphate in subcutaneous tissue of the body. Various types and subtypes have been identified.

Key words: Calcinosis cutis, mixed variant, Von Kossa stain

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Calcinosis cutis is of four main types: metastatic, dystrophic, idiopathic and iatrogenic. Subtypes include: subepidermal calcified nodule, tumoral calcinosus, auricular calcinosus, idiopathic scrotal calcinosus, calciphilaxis, calcification of blood vessels in skin, calcification of cysts and neoplasm.

Pathogenesis

In all cases of calcinosis cutis, insoluble compounds of calcium are deposited within the subcutaneous tissue due to local/systemic factors. These calcium salts consist primarily of hydroxy appetite crystals or amorphous calcium phosphate. Metabolic and physical factors are pivotal in development of calcinosis.

Dystrophic form being more common and is characterized by calcium deposits in damaged and degenerated tissues. Damaged tissue may allow influx of calcium ions leading to an elevated intracellular calcium level and subsequent crystalline precipitation. Less common metastatic form is associated with increased serum calcium or phosphorus or both. Ectopic calcification can occur in the setting of hypercalcemia and/or phosphatemia when calcium phosphate product exceeds 70mg/dl without preceding tissue damage. This elevated extracellular level may result in increased intracellular levels, calcium phosphate nucleation and crystalline precipitation.

Epidemiology

Specific incidence and prevalence data is not available. It is common in children and has no sex predilection. Common in Black race and usually affects extremities. Association of milia like idiopathic calcinosus cutis is seen with Down's syndrome or Syringoma formation.

Laboratory investigation useful in diagnosis of calcinosis cutis

Serum calcium, inorganic phosphate, alkaline phosphatase, albumin levels, complete blood picture, plasma bicarbonate or arterial pH (metabolic alkalosis), parathyroid hormone levels, creatinine kinase, aldolase levels, ANA, Vitamin D levels, 24 hours urinary calcium and inorganic phosphate.

Differential diagnosis

Milia, molluscum contagiosum, warts (genital), osteoma cutis, mycetoma and xanthoma.

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Conflict of interest: None

References