

Multiple supramassetric dystrophic calcinosis

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Website:
www.amsjournal.com

DOI:
10.4103/2231-0746.95328

Quick Response Code:



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ABSTRACT

Dystrophic calcification is deposition of calcium salt in degenerated tissues in the presence of normal calcium and phosphorous metabolism. It usually occurs in injured tissues. The condition may be associated with a variety of systemic disorders. The pathophysiology is still unclear. The case of a 17-year-old boy with dystrophic calcifications over the right masseter muscle is presented here with review of literature. Calcified nodules were surgically excised via an intraoral approach.

Keywords: Calcium and phosphorous metabolism, dystrophic calcification

INTRODUCTION

Calcification is a process in which calcium salts build up in soft tissues, causing it to harden. Pathologic calcification implies the abnormal deposition of calcium salts together with traces of iron, magnesium and other mineral salts. Calcinosis is an abnormal condition characterized by deposition of calcium in any part of the body, tissue or the skin. When this condition occurs in the skin it is known as calcinosis cutis or cutaneous calcification. Intraoral mucosal calcified nodule is a recently recognizes entity of the oral cavity that represents the idiopathic form of calcinosis cutis.^[1,2]

Calcinosis is reported in four main forms, namely the dystrophic calcinosis, metastatic calcinosis, iatrogenic calcinosis and idiopathic calcinosis.^[2] The other forms described according are calcinosis circumscripta and calcinosis universalis.^[3] In calcinosis circumscripta there is localized collection of calcium in the skin and subcutaneous tissue, usually around the joints, whereas in calcinosis universalis the calcium is deposited diffusely in the skin, subcutaneous tissue and muscles. The aim of this article is to report a rare case of dystrophic calcinosis along the right masseteric region.

CASE REPORT

A 17-year-old boy reported to the department of oral and maxillofacial surgery with a complaint of painless multiple swelling over the right masseteric region since 2 years, which was

obvious only after clenching. The patient was healthy without any medical and dental abnormalities. He could not recollect any incidence of trauma to the affected site.

On examination facial asymmetry with swelling at the right mandibular angle region was evident only on clenching [Figure 1]. Palpation revealed superficial well-circumscribed, well-defined, discrete, painless masses of different sizes (2 x 3 mm, 2 x 2 mm, 1 x 2 mm, 1 x 1 mm, approximately). They were not adherent to the underlying structures and freely movable in all directions. Routine blood investigations were within normal range. Serum calcium and phosphorous were also within normal limits. Panoramic radiograph reveals multiple well-defined radio-opaque masses scattered over the lower border of the right mandibular angle region below the mandibular third molar [Figure 2]. Axial view of CT scan examination revealed a multiple hyperdense masses located in the region of the right mandibular angle over the right masseter muscle [Figure 3].

Myositis ossificans, osseous calcified nodules and osseous choriostoma were considered in the differential diagnosis. Intraoral excision was planned under general anesthesia. The incision was placed in the buccal vestibule opposite to the first molar extending along the anterior border of the ramus toward coronoid notch [Figure 4]. Blunt dissection was carried supraperiostally extending toward the masses till it was identified [Figure 5]. The head was fixed in position with proper retraction throughout the procedure which was important. The assistant



Figure 1: Preoperative photograph of the patient. Note the swelling over the right masseteric region.

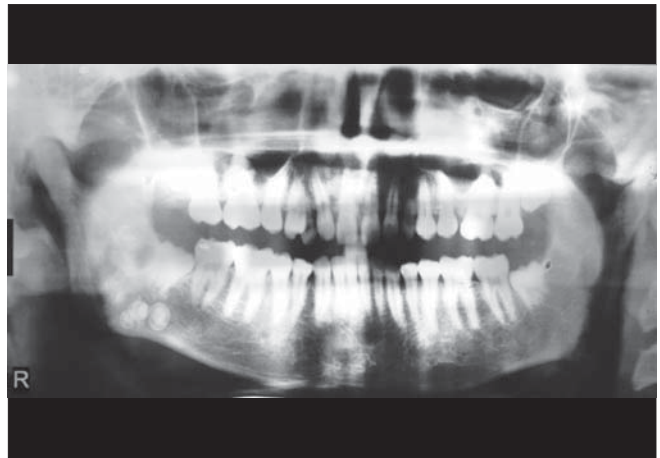


Figure 2: Panoramic radiograph reveals multiple well-defined radio-opaque masses scattered over the lower border of the right mandibular angle region below the mandibular third molar

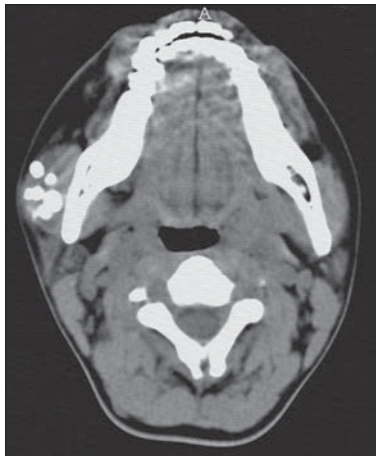


Figure 3: Axial view of CT scan examination revealed a multiple hyperdense masses located in the region of the right mandibular angle over the right masseter muscle



Figure 4: Intraoral surgical incision for access to the calcified mass



Figure 5: Identification of calcified masses for excision

fixed the masses from outside while dissecting.

The whole bunch of nodules was excised [Figure 6]. While

dissecting intraorally care was taken to prevent injury to the facial artery and vein. During the procedure, bleeding was encountered due to injury to the facial vein, which was managed using bipolar diathermy. The excised masses were sent for histopathological examination, which was revealed as calcified bodies within the fibrous connective tissue [Figure 7]. Post operative healing was uneventful. Patient was followed up for more than a year without any recurrence.

DISCUSSION

Deposition of calcium salts in the tissue other than osteoid or enamel is called pathological or heterotrophic calcification.^[4] When deposition occurs locally in dying tissues, it is known as dystrophic calcification or calcinosis. It is caused in dead tissues for e.g., caseous necrosis in tuberculosis, liquefaction necrosis in chronic abscess and degenerative tissue, old scars, calcifying epithelial odontogenic tumor, juvenile psammomatoid ossifying fibroma, etc.^[4]

Dystrophic calcification is noted most often in subcutaneous tissues secondary to trauma or infection and is often described in

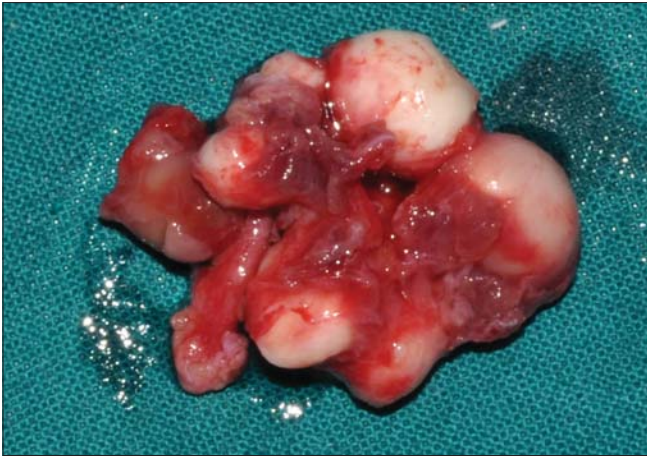


Figure 6: Excised calcified nodules

systemic lupus erythematosus, scleroderma or dermatomyositis. Injured tissue of any kind has been suggested to be predisposed to dystrophic calcification.^[4] When soft tissue is adjacent to the bone, it is sometimes difficult to determine whether the calcification is within bone or soft tissue. Differential diagnosis includes calcification of lymphnodes, parotid salivary gland calcifications, sialolithiasis in parotid duct/gland, calcification of carotid artery. Other rare differential diagnosis includes pilomatrixoma, choriostoma and foreign body granuloma.

Calcifications of carotid artery may be located within the soft tissue below the angle of the mandible, between the hyoid bone and the image of the cervical spine as seen in panoramic images. The most common location of calcified lymphnode is the submandibular region, near or below the mandibular angle. Sialoliths are most common in the submandibular glands (83-94%) then parotid gland (4-10%) or sublingual gland (1-7%). In panoramic image the ossification of the stylohyoid ligament extends from the mastoid process and crosses the postero-inferior aspect of the ranges toward the hyoid bone. Pilomatrixoma is a benign deep dermal or subcutaneous tumor, it is the likely diagnosis if the mass is hard, fixed to skin but not underlying tissues and located near the parotid or auricular area in children, adolescents or young adults.^[5] If the calcification shown on imaging the diagnosis can be made more precisely as pilomatrixoma. Cutaneous osteomas and carcinomatosis are difficult to differentiate from pilomatrixoma.^[6] Dystrophic calcification must not be confused with choriostoma which applies to a cohesive, tumor-like growth that has developed from group of primordial cells site remote from the original tissue. Long-standing duration from birth and childhood with no change in size of the lesion fulfills the criteria for a choriostoma.^[4]

In the present case, neither history of trauma nor any finding of systemic disorder has been established. This case also coincides

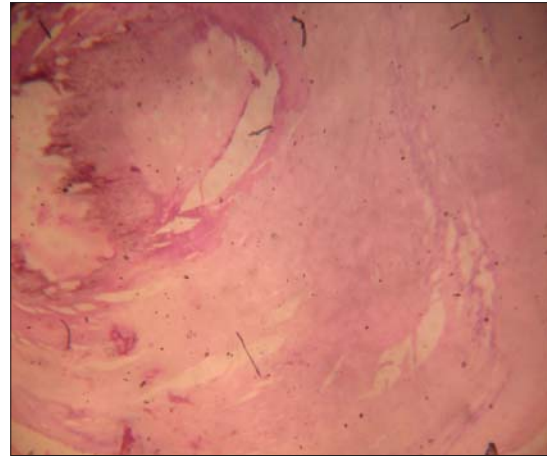


Figure 7: Histopathological examination reveals calcified bodies within the dense fibrous connective tissue stroma (H& E Section, 10x)

with study of Matin,^[7] who hypothesized that dystrophic calcification is attributed to stress in the region of tendinous insertion of the masseter muscle. Surgical excision is the treatment of choice for dystrophic calcification. Carbondioxide laser therapy is an additional treatment option for smaller and superficial calcifications.^[2] Dystrophic calcification in the masseter region is rare, intraoral excision is difficult but is a possible alternative to avoid scarring in young individual.

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Cite this article as: Mohiuddin SA, Badal S, Doiphode A, Sultana S. Multiple supramassetric dystrophic calcinosis. *Ann Maxillofac Surg* 2012;2:74-6.

Source of Support: Nil, **Conflict of Interest:** None declared.