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RESEARCH ARTICLE

SOFT TISSUE CALCIFICATIONS : ASERIES OF FOUR CASES

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Abstract

Heterotrophic calcificationsare pathologic calcifications of the soft tissue regiondue to any chronic inflammatory cause(dystrophic calcification) or by hypercalcemic states in the body(metastatic calcification) or due to any idiopathic cause. It is usually detected as an incidental finding and rarely appears symptomatic. Here we are presenting fewcase reports of patients with soft tissue calcifications that reported to the department of Oral Medicine andRadiology.

Introduction:-

Soft tissue calcification or heterotrophic calcificationis a process of deposition of calcium salt in tissues other than both enamel and bone.Soft tissue calcifications are mainly of two distinct types dystrophic calcification and metastatic calcification

Dystrophic calcification ispresentedby the accumulation of calcium salts in dead ordegeneratedtissue with normal calcium metabolism and normal serum calcium level

Metastatic calcification occurs innormal tissue and is associated with deranged calcium metabolism and hypercalcemia

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Case 1

Atwelve-year-old female patient reported with pain anda sensation of the foreign body in the left side of the oral cavityThe foreign structure causedpain and irritation to the surrounding structures anddifficultywas present during swallowing.The patient gave a history of fever and recurrent infection and swelling in the submandibular regionsix to seven months back thrice, which subsided on taking medication.The patient presented nohistory of toothache or no sign of deep caries in theoral cavity. The patient was healthy and herblood investigation values were normal.

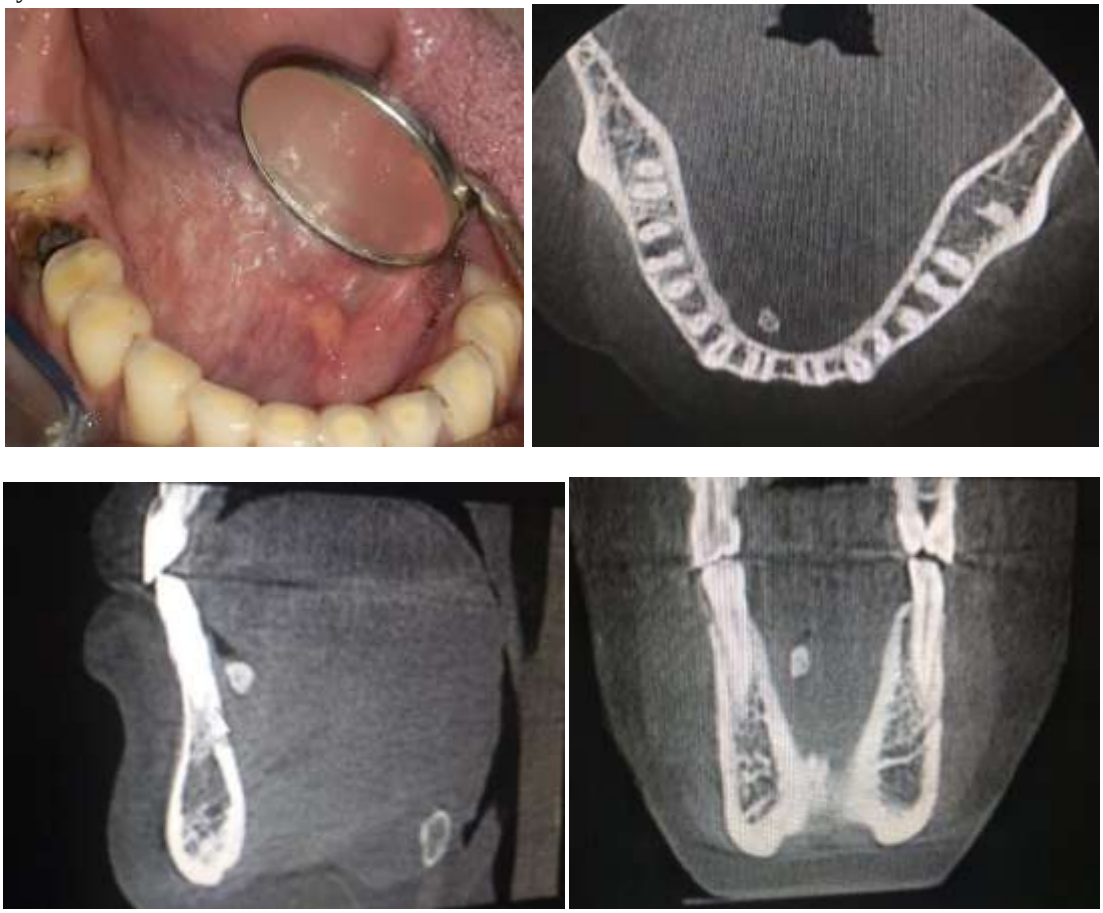
On extraoral examination, the left submandibular regionwastender on palpation and the left supraclavicular lymph nodes were palpable. The intraoral examination revealed a whitish–yellow mass with an irregular surfaceplaced posteriorly to the distal of the left mandibular second molarin the lingual sulcusanterior to the left anterior facial pillarwith itsextensionsburied inthe submandibular region. Themass was calcified and hard on palpationand had no evidence ofinflammation of surrounding tissueand not associatedwith pus discharge.The patient did not reveal any problem with salivation and showed no signs ofsalivary ductal blockage.

On the radiographic examination, the CBCT revealed a well-defined radiopaque cauliflower shaped lesion in thesagittal section.The periphery of the node appeared welldefinedandirregularsmallspherical, lobulatedmasses collectedgiving a cauliflower kind of appearance.The calcified mass wasremoved surgicallyby the intraoral approach.

Case 2

A 62-year-old female patient reported to the department with a complain of swelling in the inferior surface of the tonguesince 3 months.The patient was normal 3 months back when she noticed pain and swelling on eating food which subsided later. The patient did not reveal any history of fever, tooth pain,or pus discharge from the nearby region.Extra orallyno significant findings were present and no lymph nodes were palpable. On intraoral examination, a whitish elongated hard mass was present medial and inferior to the lingual frenumnear thesubmandibular duct opening. On palpation, the region was slightly tender and non-compressibleand nonfebrile. The mass appeared pale whitish with dimensions of 0.5 to 1 cm. The stone appeared firm and easily palpable and more superficially placed through intraoral palpation

Onradiographic examination,well definedradiopaque masswith smooth surface of 2mm to 1.5mmwas seennearthe 41 42 43 regions. The final diagnosis was sialolithiasis of the rightWharton's duct with the stone situatedin ducts anteriorly near the orifice.



Case3

A 31-year-old female patient reported to the department with pain and swelling that appears in the mouth while eating foodfor 2 weeks which subsides on its own. On intraoral examinationfirm to hard swelling was palpated on theleft side of the floor of the mouth. On examination, firm elongated mass was palpable on the left sideof the floor of the mouth withswelling more anterior and closer to the duct orifice. On radiographic examination axial sectionand midsagittal section of CBCT showed radiopaque mass of 1-2mmseen along the duct near 32 33.The finaldiagnosis was given as sialolithiasisalong the left Wharton's duct .

Case 4:

A 42-year-old patient reported to the department with trauma due to RTA.CBCT of the patient was taken torule out fracture in the maxillofacial region. The CBCT report showed a left mandibular parasymphysis fracture and multiple calcifiedstructures in the craniofacial skeleton and calcified structures in the paranasal sinuses. Patient did not reveal any history of previous infection or any previous trauma or chronic disease. Radiographically the calcification appeared as well-defined radiopaque masseswithirregular size and shape.

Discussion:-

Lymph node calcificationsexhibita well-defined periphery and the calcified nodes may have a lobulated mass like appearance resembling a cauliflower kind of lesion.

Usually, sialoliths have a smooth outline,whereas lymph nodesappear asirregular outlines.Differentiation is made if the patients havesymptoms related to the salivary glandsand sialography becomes necessary to facilitate the differentiation.

Phlebolliths appear in the same region aslymph node and salivary glands. However, phlebolith,usually appears smaller and multiple with concentric radiopaque and radiolucent rings and they mimic the cross-section of a blood vessel.

Tonsillolith appears as hard,round white or yellow objects projecting from tonsillar crypts usually of palatine tonsils.Radiographicallyitappears as single or multiple radiopaque structures superimposed over the mid-portion of the mandibular ramus in the region where the image of the dorsal surface of the tongue is superimposed over the ramus in the region of oropharyngeal air spaces. (8)

It appears as a radiopaque entity located within the mandibular ramus.when in doubt,a posteroanterior skull or mandible image, or an open mouth reverse Town, may show that thecalcification lies adjacent to the medial surface of the ramus.

Cysticercosis appears as asymptomatic in mild cases butdepending on the number,region of invasion,and the immune responseof the host the severity and mode of symptoms vary. It ranges from gastrointestinal upset with epigastric pain,severe nausea,vomiting to invasion in the brain causing headache, seizures,visual disturbances, acuteobstructive hydrocephalus,irritability,loss of consciousness and death.Examination of oral mucosa may resemble a mucocele or benign mesenchymal neoplasm. (8)

Radiographically cysticercus appears as multiple well-defined elliptical entities that resemble grains of rice with homogeneously radiopaque internal structures. These fine calcified nodules show widespread dissemination, particularly in the brain and muscles, which help differentiating them.

Osteoma cutisis a rare soft tissue calcification in the skin or subcutaneous tissuethat manifest asthe localized formation of bone within the dermis.It can be primary, occurring in normal tissue without any pre-existing condition, or secondary to any damaged tissue.

Some patients exhibit numerous lesions,usually on the face, scalpor chest. This form is called multiple miliary osteoma cutis. It most commonly appears in the lip cheekregion.These appear as single, multiple radiopaque masses. These are usually small but the size can vary from 0.1- 5 cm.(8)

Arterial calcifications are of two distinct patterns:Medial calcific sclerosis and Calcifiedatherosclerotic plaque. Medial calcinosis may involve the carotid artery or, less commonly, the facial artery. Thecalcific deposit in the artery wall outline the image of the artery as a pair of thin parallel running radiopaque lines giving a tramtrack or pipelineappearance in lateral views and a circular or ring-like pattern in cross-sectional view. It is considered a metastatic calcification in patients withhyperparathyroidism. (8)

Calcified atherosclerotic plaques are dystrophic calcifications, with multiple irregulars and welldefined from surrounding soft tissueand exhibits a vertical linear distribution. The internal structure appears heterogeneously radiopaque with radiolucent voids.

Antroliths are calcifications appearing in the antrum.It is usually of an endogenous cause (blood clot,inspissated mucus,ectopic tooth, root tips, bone fragments, necrotic fungal balls). Dystrophic calcifications can occur in long-standinginflamed mucosa in the sinuses.(8)

Radiographically these appear withthe well-definedperipheryof various sizes and shapes depending on the nature of the nidus. Internally it exhibits mixed radiolucent and radiopaque structure and occasionally laminations.

Ossification of stylohyoid ligament usually occurs from the base of the skulland extendsdownwards bilaterally.In panoramic radiograph, it appear as linear ossification extending from the mastoid process and crosses the posterior aspect of the ramus boneand is positioned roughly parallel or superimposed over the posterior aspect of the inferior border of the mandible.(8)

Conclusion:-

Soft tissue calcifications are normally asymptomatic and usually noticed as an incidental finding.The most commonly seen forms in the maxillofacial region are dystrophic calcifications due tochronic inflammation, recurrent infections, granulomatous disease like TB of lymph nodes, dead necrotic tissue etc.A detailed clinical examination,history taking along with blood examination, and precise radiographic examination will be needed for diagnosing soft tissue calcification in the head and neck region.Radiographic examination plays a crucial role inidentifying these calcificationsby distribution, pattern, and location by comparing with the normal anatomical region.

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