ATYPICAL RADIOGRAPHIC PRESENTATION OF OSSIFYING FIBROMA.

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Background: *History*: A 21-year-old female presented with a 1-year history of pain in the mandibular right premolar region. *Radiographic findings*: The multidetector computed tomography (MDCT) images showed a 5 × 1.7 cm radiolucent lesion of the mandible extending from the left canine, across the midline, to the right second molar. There was thinning of the buccal and lingual cortices, with displacement of the buccal cortex. There was evidence of thin trabeculae in the buccal cortical area. There was displacement of the first and second premolars in the region, with evidence of resorption of the roots of the incisors and right first and second molars. The inferior alveolar canal was not visualized within the region of the lesion, and it was difficult to determine if there was displacement or destruction of the canal. *Differential Interpretation*: The differential interpretation included giant cell lesion, ameloblastoma, odontogenic keratocyst, and odontogenic myxoma. *Microscopic Description*: Microscopic examination revealed multiple, small, round to ovoid islands of demineralized osteoid and acellular basophilic material, scattered amidst a dense fibrocollagenous connective tissue, populated with bland, occasionally stellate, fibroblasts.

Discussion/Conclusions: The lesion was diagnosed as benign fibro-osseous lesion consistent with a cemento-ossifying fibroma. The MDCT images provided a challenging interpretation in this case. On the basis of the images, the more obvious diagnosis was toward a benign cyst or tumor, such as a giant cell lesion, with differential diagnoses of ameloblastoma, odontogenic keratocyst, or odontogenic myxoma. However, we should not rule out aggressive ossifying fibromas among the differential diagnoses as this case clearly proves with such typical features.

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CAROTID ARTERY CALCIFICATIONS DETECTED BY CBCT IN PATIENTS WITH A HISTORY OF HYPERTENSION.

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Background: One of the most common sites for the formation of vascular calcifications is in the branches of the common carotid artery. More frequently, these are formed by the calcification of existing plaques along the vascular wall. Numerous studies utilizing other modalities have revealed a positive correlation between vascular calcifications and hypertension; however, there is a need for investigation of the incidence of these pathologies using cone beam computed tomography (CBCT) technology and for exploring the factors that influence their presence or detection.

Objective(s): The aim of this study was to determine the proportion of patients who have a positive history of hypertension and a positive finding of carotid artery calcification (CAC) and to determine if there are factors that predispose certain groups of patients to carotid artery calcifications, including patient age, gender, and history of antihypertensive medication use.

Study Design: This retrospective study focused on 608 randomly selected patients who received dental CBCT imaging studies at Stony Brook School of Dental Medicine. Relevant patient demographic characteristics and medical history were extrapolated from the patients' electronic health records. The data were analyzed for statistical significance using Pearson's correlation and logistic regression.

Results: A total of 608 patient records (mean age = 62.6 years) with equal gender distribution were screened. Of these, 108 (17.76%) cases showed an incidence of CAC. 240 records indicated a positive history of hypertension (HTN), and 87 patient records (36.25%) showed a positive history of HTN and presence of carotid calcification. A strong male predilection (2:1) was observed for the concurrent positive history of HTN and presence of CAC. The mean age for the presence of a CAC in patients with and without HTN were 71.5 and 71.8, respectively.

Discussion/Conclusions: Our findings suggest a significant correlation between history of hypertension and the presence of CAC, with a strong predilection for men. No significant correlation was observed between antihypertensive medications and CAC.

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CONE BEAM COMPUTED TOMOGRAPHIC ASSESSMENT OF THE DISTANCE BETWEEN THE INCISIVE CANAL AND MAXILLARY CENTRAL INCISORS.

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Background: Maxillary anterior teeth play an important role in aesthetics, phonetics, and mastication. Because of the aesthetic and functional significance, it is important to evaluate their position in association with surrounding structures in 3-D before initiating orthodontic treatment. With the advent of cone beam computed tomography (CBCT) in orthodontic diagnosis, it is now possible to identify these structures. One such structure is the incisive canal. Uncertainty in locating the canal can cause root resorption postorthodontic retraction of anterior maxillary teeth.

Objective(s): The aim of this study was to calculate the relative distance between the incisive canal and maxillary central incisor using CBCT and utilize the results for orthodontic treatment planning.

Study Design: All quantitative measurements between the incisive canal and both maxillary central incisors were performed using CBCT on 61 patients. The anteroposterior measurements were taken on both sides, and the average of both values was considered for the statistical analysis. The Steiner cephalometric analysis was performed to select patients with skeletal and dental Class I relationship. All linear measurements were performed on the axial plane at 3 different vertical reference points located on the sagittal plane: (1) the palatal opening of the incisive canal (opening level, P1), (2) midlevel between the opening level and the root apex of the maxillary central incisors (midlevel, P2), and (3) the root apex of the maxillary central incisors (root apex level, P3).

Results: The average anteroposterior distance between the maxillary central incisor roots and the incisive canal was approximately 56 mm.

Discussion/Conclusions: The results of our study could be clinically helpful to plan orthodontic treatment that requires significant retraction of maxillary incisors. The authors support the idea of a pretreatment CBCT in cases that require maximum anterior retraction in the maxilla.

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CYCLICAL CHANGE IN THE APPEARANCE OF FLORID CEMENTO-OSSEOUS DYSPLASIA OVER 15 YEARS: A CASE REPORT.

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Background: Florid cemento-osseous dysplasia is a dynamic dysplastic bone abnormality where normal bone is replaced with fibrous tissue and various patterns of nonmature bone. Over time, these changes can be appreciated on imaging with the appearance of an early radiolucent entity becoming a mixed radiopaque/radiolucent entity and finally a predominantly radiopaque entity with a radiolucent rim of variable width.

Discussion/Conclusions: We present a case of florid cemento-osseous dysplasia, which did not follow a typical pattern, with imaging spanning 15 years in a single patient. The patient, a 41-year-old female, first presented to our clinic in 2008. Previous images from 2002 demonstrated typical patterns of florid cemento-osseous dysplasia in the mandible; radiolucent foci; and mixed radiolucent/radiopaque foci with epicenters located inferior to the apices of the teeth. In 2006, the pattern then changed to a wholly radiolucent one, and we interpreted this as being a simple bone cyst developing within the mixed radiopaque/radiolucent focus in the left mandible. Later images in 2013 showed peripheral new bone deposition; an appearance that we interpreted as being consistent with healing. Similar changes in the foci in the right mandible were also seen between 2013 and 2016. The left mandible showed fluctuations between both bone resorption and deposition over the years of imaging. External root resorption of the mandibular teeth also occurred, and these eventually involved the apical one-third of the affected teeth—a process that is rare, but occasionally seen.
This case illustrates the dynamic clinical behavior that can occur with florid cemento-osseous dysplasia. It is important to recognize the range of variations in the presentation of this dysplastic bone entity and to correlate imaging findings with a clinical history to avoid misdiagnosis and mismanagement. Monitoring in certain cases may be necessary to confirm an initial interpretation of florid cemento-osseous dysplasia.

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DENTAL IMAGING DILEMMAS IN KLIPPEL-FEIL ANOMALY.

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Background: Because of the broad range of findings, Klippel-Feil syndrome has also been referred to as *Klippel-Feil sequence* and *Klippel-Feil anomaly*. It is classified into 3 types that differ in degree and location of vertebral fusion. Another contemporary classification also includes patterns of inheritance.

Case Report: A 19-year-old male needed panoramic imaging to evaluate his third molars. However, because of Klippel-Feil disfigurement, his head and neck posture did not fit into various panoramic imaging units. With an altered oblique head positioning in a cone beam computed tomography (CBCT) scanner (NewTom VGi), his jaws were scanned. The CBCT volumetric data were then realigned and reconstructed in CBCT viewing software (InVivoDental 6.0). These reconstructions were appropriate to assess the indicated dental status and to update the assessment of the cervical vertebral development—a limiting condition of Klippel-Feil syndrome.