

were considered in the differential diagnoses in both cases. Case 1 included cementoblastoma and foreign body reaction. In case 2, osteosarcoma was considered because of the apparent expansion. Because of the lesion size, osteoid osteoma was considered unlikely.

Diagnosis and Management: Both patients were initially managed pain with nonsteroidal anti-inflammatory drugs (NSAIDs), but the symptoms continued to worsen. Case 1 was treated with enucleation, curettage, and extraction of tooth #18. Case 2 was treated with excisional biopsy and extraction of tooth #17. Histologic reports rendered a final diagnosis of osteoblastoma in both cases.

Discussion: Osteoblastoma is rare, especially in the maxillofacial region. We present 2 unusual and distinct cases of osteoblastoma. In case 1, there was large cortical perforation with no expansion, whereas in case 2, the lesion was expansile with no perforation. To the best of our knowledge, soft tissue edema and new bone apposition, as seen in case 2, have not been reported previously.

A CASE OF OSTEOPETROSIS: UNUSUAL MAXILLOFACIAL PRESENTATION AND SUCCESSFUL DENTAL IMPLANT RESTORATIONS

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Clinical Presentation: A patient presented with malaligned and rotated, missing, unerupted, and partially erupted/maldeveloped teeth seeking care to improve her masticatory function. She had impaired hearing and vision, but no neurologic symptoms. A panoramic radiograph, a lateral cephalometric radiograph, and a medical CT scan were reviewed. The radiographic examination revealed a skeletal Class III relationship. Sclerosis related to osteopetrosis was seen throughout the maxilla, cranial base, and cervical spine. A train track–like radiopaque formation was noted bilaterally within the mandibular inferior alveolar canals. No symptoms related to inferior alveolar nerve impairment were noted.

Differential Diagnosis: Multiple impacted and malformed teeth were unusual presentations, leading to the diagnosis of osteopetrosis. Other syndromes, such as cleidocranial dysostosis and Gardner syndrome, can also have similar features.

Diagnosis and Management: The treatment comprised a maxillary overdenture and an implant-supported mandibular prosthesis. Despite the increased risk of failed osseointegration, the implants placed in the mandible have been successful for greater than 8 years.

Discussion: Osteopetrosis is a disorder characterized by impaired osteoclast function, leading to hyperdense, hypovascular, brittle bone. When considering dental implant placement in a patient with osteopetrosis, one must be wary of the increased possibility of bone fracture or osteomyelitis and the decreased likelihood of successful osseointegration because of hypovascularity. This case report describes successful osseointegration of multiple dental implants supporting a fixed mandibular

prosthesis with long-term survival. Therefore, implant placement should not be excluded on the basis of an osteopetrosis diagnosis alone. Rather, one should evaluate the sclerosis radiographically in relation to intended implant sites.

ODONTOGENIC MYXOMA: A CASE REPORT AND LITERATURE REVIEW

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Background: Odontogenic myxoma (OM) is a rare intraosseous neoplasm that is benign but locally aggressive. It is derived from the mesenchymal portion of the tooth germ. Even though it is a benign lesion, it can cause considerable morbidity because of its invasive nature. Therefore, it is important to delineate the margins of OM to achieve a better treatment outcome. We present the case of a mandibular odontogenic myxoma in a 72-year-old male patient, whose chief complaint was swelling and pain on the lower left side of the face. The patient underwent imaging at Tokyo Medical and Dental Hospital for further evaluation.

Objective: The aim of this report is to present a case of odontogenic myxoma in an older patient, with computed tomography (CT) and magnetic resonance imaging (MRI) characteristics of OM and a literature review.

Materials and Methods: CT was performed with a 64-row multidetector CT (MDCT) scanner (Somatom Sensation 64, Siemens Healthcare, Erlangen, Germany) and magnetic resonance imaging (MRI) was performed with a 3 T MRI unit (Magnetom Spectra, Siemens Healthcare, Erlangen, Germany) with a 16-channel head and neck coil.

Results: The initial panoramic study showed a poorly defined lytic lesion in the left ramus in close proximity to the inferior alveolar canal. CT revealed a hypodense lesion with a thinned out buccal cortex and a disrupted lingual cortex. Axial T1-weighted MRI showed a well-demarcated, low-intensity lesion in the posterior left mandible. An axial T2-weighted sequence displayed a well-defined, hyperintense mass. In a fat-suppressed T2 scheme, the lesion was even more conspicuous. The mass further displayed a high mean apparent diffusion coefficient value of $1.74 \times 10^{-3} \text{ mm}^2/\text{s}$. Aneurysmal bone cyst, central hemangioma, odontogenic myxoma, and central giant cell granuloma were considered as differential diagnoses. After histopathologic evaluation, a definitive diagnosis of odontogenic myxoma of the left mandible was made. The lesion was treated with segmental mandibulectomy. The distribution of odontogenic myxoma by age, gender, and imaging modality was studied retrospectively in the literature review. patient age range was 0 to 80 years, and there was a male predilection. Mean ages of female and male patients were 40.5 years and 56.75 years, respectively. The distribution of imaging modalities was 40% for conventional methods, 45% for CBCT/CT and 15% for MRI.

Discussion: In the present study, MRI features, such as the hyperintense signal on T2-weighted images and low-signal intensity on T1-weighted images, were consistent with those of cases reported in the literature. Although CT could delineate the lesion and its extent, MRI was more effective in accurately delineating margins and determining the extent of the tumor for better guidance of the surgical procedure. MRI should, therefore, be considered the imaging modality of choice for diagnosis and margin delineation of

OM because this tumor demonstrates a high recurrence rate. All 3 imaging modalities have inherent advantages and disadvantages; however, all of these modalities should be routinely used in the diagnosis of OM. Results of MRI can further help map the margins and greatly aid in resection with clear margins.

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QUANTIFICATION OF TMJ RHEUMATOID ARTHRITIS ON POSITRON EMISSION TOMOGRAPHY SCANS USING ROVER

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Background: Inflammation of the temporomandibular joint (TMJ) has a relatively high correlation (> 17%) to the late stages of rheumatoid arthritis (RA). RA is a chronic inflammatory autoimmune disease that causes cartilage and bone destruction. Cell activity of TMJ was measured by using 2 radiotracers, [18 F]-fluoro-2-deoxy-D-glucose (FDG) and [18 F]-sodium fluoride (NaF), for staging and surveillance of RA.

Objective: The aim of this study was to quantify the region of interest (ROI) volumes of FDG- and NaF-based TMJ positron emission tomography (PET) images by using the ROVER software.

Materials and Methods: Institutional review board (IRB) approval was obtained for 20 previously diagnosed patients with RA. From this cohort, 17 anonymized patients with NaF and FDG-PET/CT scans were reviewed by 3 calibrated investigators. When there was disagreement, a fourth investigator who is an expert in PET/CT, was used. The standardized uptake values corrected (SUV-Mean Cor) were calculated and recorded on ROVER. The collected data and literature review findings were collated and analyzed to provide a holistic comparison table. The clinical applications, advantages, and disadvantages of 8 imaging techniques were reviewed.

Results: The average ROI volumes differed between FDG- and NaF-based PET images in every case, showing a higher quantification for NaF-based scans. In 1 case, ROI mean total

corrected value was 23.25 when NaF-PET was used, as opposed to 6.7 when FDG-PET was used. There was a similar trend among other cases included in the study. The NaF-PET ROI values appeared higher than the standard FDG-PET ROI values in the cases where the RA activity was quantified. SUV can be obtained by dividing the ROI activity concentration (KBq/L) by the decay-corrected amount of injected FDG (KBq/L) times the weight of the patient in grams. ROVER automatically calculates the average and maximum SUVs for all patients.

Discussion: With the use of ROVER, it is possible to collect accurate measurements of TMJ disease activity from both FDG-PET and NaF-PET images. NaF-PET appeared to be a more sensitive technique.

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CLINICAL AND RADIOGRAPHIC MANIFESTATIONS WITH 3-DIMENSIONAL PRINTED MODEL OF TRUE BONY ANKYLOSIS OF THE TEMPOROMANDIBULAR JOINT: A CASE REPORT

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Clinical Presentation: We present a case of a 20-year-old male who presented with facial asymmetry, severe trismus since early childhood, generalized physical weakness, and other skeletal deformities, including pigeon chest and kyphoscoliosis. No clear history of trauma was elicited. However, early childhood trauma was considered a possibility.

Differential Diagnosis: Severe trismus can be caused by various etiologies, including trauma, temporomandibular joint (TMJ) disorders, benign and malignant neoplasia, infections, and iatrogenic causes. However, with the history and clinical presentation, a TMJ condition, including bony and fibrous ankyloses, was considered.

Diagnosis and Management: Multidetector computed tomography (MDCT) was performed. Radiographic features were consistent with stage IV bony ankyloses of the left TMJ, according to the classification system of Sawhney et al. A 3-dimensional (3-D) printed medical model of the skull and the mandible was used for surgical simulation. Gap arthroplasty with interpositional temporalis muscle flap was performed, followed by vigorous physiotherapy. After surgery, mouth opening increased significantly from 0 to 35 mm. One year clinical follow-up was done.