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05-09
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2024

BİLDİRİ KİTABI

Çukurova Üniversitesi Diş Hekimliği Fakültesi, Adana

INVITATION

I am pleased to invite you to the 2nd YOUNG ORAD SYMPOSIUM to be held in Çukurova University Faculty of Dentistry Adana with the support of the Society of Oral Diagnosis and Maxillofacial Radiology (ODMFR). I hope this meeting will be successful and productive in scientific and social terms.

As research experiences among ODMFR members vary in terms of different topics and methodologies. Our aim as an association is to identify different research areas and to reveal the topics and technologies of interest to the members. Another aim of ours is to increase the number of members of residency students and to introduce Dentomaxillofacial Radiology in Turkey. 2. YOUNG ORAD SYMPOSIUM will increase the number of specialization students in the field of Dentomaxillofacial Radiology. We hope this symposium will expand our cooperation with our industry partners, especially to fund short-term research fellowships. Symposium Çukurova University Faculty of Dentistry Adana will be carried out.

I believe that the 2nd YOUNG ORAD SYMPOSIUM will provide an excellent opportunity for all participants to meet Dentomaxillofacial Radiologists and share their knowledge and experience on the multidisciplinary issues of the meeting. I hope this symposium will be an unforgettable and beneficial experience for all participants.

Kind regards,

Prof. Kaan Orhan
President of Oral Diagnosis and Maxillofacial Radiology Society

ORGANIZING COMMITTEE

Assoc. Prof. Belde ARSAN ÖZCAN, *Istanbul Medeniyet University*
Assoc. Prof. Burcu KELEŞ EVLİCE, *Çukurova University*
Assoc. Prof. Cansu BÜYÜK, *Okan University*
Assoc. Prof. Eda Didem YALÇIN, *Istanbul Health and Technology University*
Assoc. Prof. Emre KÖSE, *Aydın Adnan Menderes University*
Assoc. Prof. Gaye KESER, *Marmara University*
Assoc. Prof. Gürkan ÜNSAL, *Near East University*
Assoc. Prof. Melih ÖZDEDE, *Dokuz Eylül University*
Assoc. Prof. Selmi YARDIMCI, *Akdeniz University*
Asst. Prof. Dr Hakan AMASYA, *İstanbul University - Cerrahpaşa*
Asst. Prof. Dr. Damla SOYDAN ÇABUK, Çukurova University
Dr. Cansu KÖSEOĞLU SEÇGİN, *Tepebaşı Oral and Dental Health Hospital*
Dr. Hazal DUYAN YÜKSEL, *Çukurova University*

(The list is arranged alphabetically by name and title.)

SPEAKERS

Assoc. Prof. Gaye KESER
Marmara University

Assoc. Prof. Emre KÖSE
Aydın Adnan Menderes
University

Asst. Prof.
Bence Tamás Szabó
Semmelweis University

Assoc. Prof. Cansu BÜYÜK
Okan University

**Asst. Prof. Dr. Hakan
AMASYA**
İstanbul University –
Cerrahpaşa

Assoc. Prof. Melih ÖZDEDE
Dokuz Eylül University

**Assoc. Prof. Belde ARSAN
ÖZCAN**
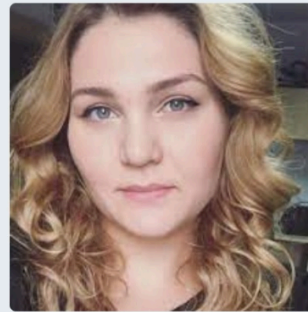Istanbul Medeniyet
University

**Dr. Cansu KÖSEOĞLU
SEÇGİN**
Tepebasi Oral and Dental
Health Hospital

**Assoc. Prof. Gürkan
ÜNSAL**
Near East University

**Assoc. Prof. Eda Didem
YALÇIN**
Istanbul Health and
Technology University

**Asst. Prof. Dr. Damla
SOYDAN ÇABUK**
Çukurova University

Dr. Hazal DUYAN YÜKSEL
Çukurova University

SCIENTIFIC PROGRAM

05 March 2024 TUESDAY	06 March 2024 WEDNESDAY	07 March 2024 THURSDAY	08 March 2024 FRIDAY
	09.30-10.20 Basic Principles of CBCT and Understanding the Artifacts on Reconstructed Data *Dr. Bence Tamás Szabó*	**09.30-10.20** Reporting of Cone Beam CT *Dr. Melih Özdede*	**09.00-10.00** Evaluation of TMJ Internal Derangements in MRI *Dr. Gürkan Ünsal (Online)*
	10.20-11.10 Introduction to the Artificial Intelligence Applications in Dentistry *Dr. Cansu Büyük*	**10.20-11.10** Radiographic Image Interpretation *Dr. Belde Arsan Özcan*	**10.00-11.00** Current Innovations in Dentomaxillofacial MRI **Dr. Damla Soydan Çabuk, Dr. Hazal Duyan Yüksel**
Registration	**11.10-11.30 Coffee Break**	**11.10-11.30 Coffee Break**	**11.00-11.30 Coffee Break**
	11:30-12:20 Additive Manufacturing Technologies *Dr. Hakan Amasya*	**11.30-12.20** Imaging of Inflammatory Disesases of the Jaws *Dr. Cansu Köseoğlu Seçgin*	**11.30-12.20** Ultrasonography in Dentistry **Dr. Didem Yalçın**
13.00-13.30 Welcome	**12.20-13.30** **Lunch Break**	**12.20-13.30** **Lunch Break**	**12.20-13.30** **Lunch Break**
13.30-14.30 Oral Diseases *Dr. Gaye Keser*	**13.30-14.30** Interactive Case Discussion	**13.30-14.30** Poster Presentations	**13.30-15.30** Ultrasonography Hands-on
14.30-15.30 HPV Lesions of Oral Mucosa *Dr. Emre Köse*	**14.30-15.30** Oral Presentations	**14.30-15.30** Oral Presentations	

09 March 2024 SATURDAY
08:00 Departure From The Hotel To The Historical District Of Adana   **08:30** Adana Old-Town Tour (By Walking)   *(Seyhan River Coasts, Taşköprü, Big Clock Tower, Ramazanoglu Mansion, Yag And Ulu Mosque, Old Bazaar, Ilter Uzel Medicine And Dentistry Museum, Liver Kebab For Breakfast)*   **10:30- 11:00** Free Time For Shopping   **11:00** Transfer To Hotel

ABSTRACTS OF THE LECTURES

Dr. Gaye Keser

Marmara University

Oral Diseases

Oral diseases are an important subspeciality of general internal medicine. A dentist should have a certain level of clinical and laboratory knowledge in medicine and dentistry, together with clinical experience. These will enable the practitioner to successfully overcome diagnostic and therapeutic challenges.

The mouth and structures within the oral cavity offer important clinical advantages: (1) it is an easily accessible cavity for exploration and palpation, (2) it is easy to biopsy, (3) the teeth and gum problems are common and therefore require repeated visits to the dentist and (4) are easily accessible for self-examination.

This lecture focuses on the aetiology, diagnosis, differential diagnosis and treatment approaches of oral mucosal diseases frequently encountered in clinical practice.

Dr. Emre Köse

Aydın Adnan Menderes University

HPV lesions of oral mucosa

There are over two hundred human papillomaviruses (HPV). According to their DNA sequences; α and β groups can infect oral mucosa. Although HPV is considered the most common sexually transmitted infection, the virus may also be transmitted non-sexually through skin-to-skin, skin-to-mucosa, or mucosa-to-mucosa routes. Some of the key differences of HPV proteins, especially E6 and E7, attribute to subtype stratification into low-risk groups, associated with benign lesions of the skin and mucosa, and high-risk groups, subtypes causative of malignancy.

The benign HPV-related lesions of the oral cavity comprise;Verruca vulgaris, Squamous papilloma, Condyloma acuminatum, Multifocal epithelial hyperplasia.

Although HPV lesions may regress without intervention, biopsy is necessary for precise diagnosis. Furthermore, management is desired to decrease viral transmissibility and remove unsightly or bothersome lesions.

Dr. Bence Tamás SZABÓ

Semmelweis University, Budapest, Hungary

Basic principles of CBCT and understanding the artifacts on the reconstructed data

The advantages of cone-beam computed tomography contributes to its spreading not only in the field of dentistry, but as well as in maxillofacial surgery, otorhinolaryngology, rheumatology and traumatology. The background to this fact might be, that CBCT appliances cause lower patient dose and usually higher spatial resolution can be achievable and additionally, the size of the appliance is generally smaller compared to the MDCT devices.For the reconstruction of raw projection images obtained during the CBCT acquisition, in most cases a filtered back projection algorithm is used based on the Feldkamp-Davis-Kress Algorithm. One of the disadvantages of CBCT is the presence of artifacts that may significantly influence the image quality and interfere with the evaluation of the image data. An artifact can be determined as a lesion that appeared on the reconstructed image, but is not physically present in the actual structure of the scanned volume. The better understanding of onstructed images may contribute to reduce some of these and to achieve better image quality and even more efficient interpretability in everyday patient care.

Dr. Cansu Büyük

Istanbul Okan University

Introduction to Artificial Intelligence in Dentistry

Artificial Intelligence, with its ability to analyze vast amounts of data and recognize intricate patterns, is poised in equilibrium, to hold balanced and ready; to carry healthcare to revolutionize how we approach diagnostics, treatment planning, and patient care—development of computer systems that can perform tasks that typically require human intelligence. As we navigate the landscape of AI in Dentistry, it's crucial to ground ourselves in the foundational principles of our profession. With its complex blend of science and art, dentistry has been at the forefront of healthcare, addressing the unique challenges of oral health. In our daily practices, we've become well-skilled at utilizing traditional methods for diagnosis, treatment planning, and patient care. However, it's essential to acknowledge the inherent challenges we face in these traditional approaches. The complexity of oral conditions, the need for precise diagnostics, and the need for personalized treatment plans present significant difficulties. Integrating AI into our practices holds the promise of complementing and enhancing our traditional methods. Throughout this presentation, particularly, we will explore the challenges encountered during the academic studies in Dento-Maxillofacial Radiology, along with their solutions, while examining the specific applications of AI in this field.

Dr. Hakan Amasya

Istanbul University - Cerrahpaşa

Additive Manufacturing Technologies

Advancements in technology are rapidly gaining momentum, making it impossible to overlook the impact of digital transformation in dentomaxillofacial radiology. Concurrently, various technologies, such as additive manufacturing, are evolving and mutually supporting one another. 3D printing, or additive manufacturing, is increasingly used in dentistry. The objective of this seminar, in complementarity with the preceding 'Surgical Guide' session, is to elucidate key aspects of additive manufacturing technologies pertinent to the fabrication of desired products. Based on the "ISO/ASTM 52920:2023 - Additive Manufacturing" document, different production techniques will be mentioned, and their advantages and disadvantages will be discussed. Thus, the aim is to raise awareness among young researchers on relevant issues and expand their use as tools to solve problems in their academic studies. Moreover, basic terminology will be explained to promote communication in interdisciplinary discourse with engineers.

Dr. Melih Özdede

Dokuz Eylül University

Reporting on Cone Beam CT

Radiology reports are the most important method of communication between the clinicians and the radiologists. They include findings, pre-diagnosis, conclusive diagnosis, definitive diagnosis, conclusions, and suggestions for further investigation. The reports reflect the knowledge, talent, and training level of the radiologists. Furthermore, they are a critical legally-binding document. This presentation focuses on the critical aspects of reporting on Cone Beam Computed Tomography (CBCT) scans, emphasizing its role in improving diagnostic accuracy and clinical decision-making. Key topics include technical considerations, structured reporting, advanced imaging software utilization, and clinical case examples. Attendees will gain insights into optimizing CBCT reporting practices for better patient outcomes.

Dr. Belde Arsan Özcan

İstanbul Medeniyet University

Radiographic Image Interpretation

The diagnostic process in dentistry involves the correlation of clinical symptoms and radiographic signs, guiding precise assessment and clinical decision-making. Dentomaxillofacial radiologists (DMFR) and clinicians play crucial roles in delivering comprehensive patient care, relying on cone beam computed tomography (CBCT) findings in routine dental practice. Understanding the normal anatomy of cortical and trabecular bone, teeth, and surrounding structures aids in diagnosing both normal variants and pathological changes. Pathologies are evaluated based on key features such as location, attenuation degree, borders, extension, internal characteristics, and effects on adjacent structures. DMFRs should discern the nature of benign and malignant lesions based on radiographic presentation. When a pathology is detected, DMFRs consider a spectrum of potential diagnoses, always correlating CBCT findings with the patient's clinical history, symptoms, and physical examination. Integration of all available information facilitates accurate diagnoses. This lecture provides insights into commonly encountered pathologies and conditions, thoroughly examining each with accompanying cases and their respective differentials.

Dr. Cansu Köseoğlu Seçgin

Tepebaşı Oral and Dental Health Hospital

Imaging of Inflammatory Diseases of the Jaws

Imaging plays a crucial role in the diagnosis and management of inflammatory diseases affecting the jaws. This lecture provides a comprehensive overview of the various imaging modalities used in the evaluation of inflammatory jaw diseases, including 2D radiography, computed tomography (CT), magnetic resonance imaging (MRI), cone beam computed tomography (CBCT), and ultrasonography (US). We discuss the characteristic imaging findings of common inflammatory conditions such as osteomyelitis, osteoradionecrosis, and medication related osteonecrosis of the jaws. Additionally, we highlight recent advances in imaging technology and potential future directions for research in this field. A thorough understanding of the imaging features of inflammatory jaw diseases is essential for accurate diagnosis and optimal patient care.

Dr. Eda Didem Yalçın

Istanbul Health and Technology University

Ultrasonography in Dentistry

Ultrasonography as an imaging modality in dentistry is used and increasingly becoming the preferred in recent years. Ultrasonography has several advantages such as absence of ionizing radiation exposure, being able to obtain fast, dynamic and reproducible images and its low cost when compared with other advanced imaging techniques. USG is used in dentistry generally for several purposes such as; salivary gland diseases, cervical lymphadenopathy, various soft tissue mass, masticatory and neck muscles and as well as novel usage areas such as; maxillofacial fractures, periapical lesions, temporomandibular joint, tongue tumors, dental tissues' decay, cracks and fractures, mucosal lesions, periodontal tissues, implant dentistry, evaluation of rapid palatal expansion in orthodontics. The aim of this presentation is to provide an overview of the most recent advances in the use of ultrasonography in dentistry by providing information about the ultrasonographic anatomy of the head and neck region.

Dr. Gürkan Ünsal

Near East University

Evaluation of TMJ internal derangements in MRI

This presentation evaluates temporomandibular joint (TMJ) internal derangements using magnetic resonance imaging (MRI). It begins with an overview of internal derangements and their impact on TMJ function and patient quality of life. Key MRI fundamentals relevant to TMJ assessment are then reviewed, highlighting imaging techniques and protocols. Critical internal derangements, including anterior disc displacement with reduction (ADDwR) and without reduction (ADDwoR), as well as posterior, partial, and sideways disc displacements, are examined. Disc stiffness and joint effusion are explored as important factors influencing the TMJ's biomechanical environment. The presentation also addresses structural damages of the TMJ disc, correlating MRI findings with clinical symptoms and treatment outcomes. Case studies illustrate typical and atypical MRI presentations of TMJ internal derangements. Practical tips for optimizing MRI interpretation and enhancing diagnostic accuracy are provided. This comprehensive overview aims to improve understanding of TMJ internal derangements and enhance diagnostic skills using MRI.

Dr. Damla Soydan Çabuk

Çukurova University

Magnetic resonance imaging for beginner oral and maxillofacial radiologists

Recently, magnetic resonance imaging (MRI) applications are becoming more prevalent in dentistry. It is an imaging method most commonly used in dentistry for soft tissue lesions of the temporomandibular joint, maxilla and mandible. Diagnosing in this modality can be challenging for dentists and oral and maxillofacial radiologists who frequently use hard tissue-focused imaging methods such as panoramic radiography and cone beam computed tomography. It is important for beginner oral and maxillofacial radiologists to understand the basic principles of MRI and the phenomenon of nuclear resonance. It is important to learn basic sequences (T1 and T2 weighted) at the beginning of diagnosis. While T1-weighted images are useful in determining anatomical structures, T2-weighted images play a role in detecting pathological conditions (such as effusion, edema). It has been observed in the literature and clinical practice that fat suppression sequences such as STIR and FLARE are frequently used. Oral and maxillofacial radiologists are expected to have knowledge about new sequences that are becoming more common.

Dr. Hazal Duyan Yüksel

Current Applications of Magnetic Resonance Imaging in Dentistry

Çukurova University

The complex anatomy of the dentomaxillofacial region poses a challenge to current imaging techniques due to the combination of various hard and soft tissues and air-fluid-filled spaces. X-ray-based techniques such as panoramic radiography and cone-beam computed tomography are commonly employed in dentistry. However, magnetic resonance imaging (MRI) is increasingly being utilized for both craniofacial and dentoalveolar complex imaging. Previously, MRI was predominantly utilized for temporomandibular joint, salivary gland, and soft tissue pathologies in the head and neck region. With advancements in technology and ongoing research, new applications are emerging regarding the use of MRI in dentistry. Recently, its utilization has expanded in various dental specialties, including orthodontics for cephalometric analyses, endodontics for distinguishing inflammation and healthy pulp, restorative dentistry for caries diagnosis, and periodontology for examining periodontal tissues. Additionally, its usage is increasing for assessing the success of dental implants. The potential of MRI to visualize complex dentomaxillofacial anatomy in detail and aid in the diagnosis of various dental pathologies enhances its value in dentistry. Consequently, the role of MRI in dental practice is increasingly recognized and becoming more widespread.

ORAL PRESENTATIONS

OP1. RELATIONSHIP BETWEEN THE MALOCLUSION, THE BODY POSTURE AND OTORHINOLARYNGOLOGICAL STATUS IN HUNGARY

Dr. Csaba-Dobó-Nagy Head of Departure of Oral Diagnostics, Faculty of Dentistry, Semmelweis University, Budapest

Dr. Bence Szabó Departure of Oral Diagnostics, Faculty of Dentistry, Semmelweis University, Budapest

Dr. Veronika Gresz, Departure of Oral Diagnostics, Faculty of Dentistry, Semmelweis University, Budapest

Xénia Tünde Ráduly, member of Students' Scientific Association at Semmelweis University, Departure of Oral Diagnostic, Faculty of Dentistry, Semmelweis University, Budapest

Dorottya Csordás, member of Students' Scientific Association at Semmelweis University, Departure of Oral Diagnostic, Faculty of Dentistry, Semmelweis University, Budapest

Purpose: Our purpose is to find parallels between certain posture, and malocclusion types (Class I, II, III) in Hungary.

Materials and Methods: Children 7-15 years of age are participated in the research. Currently, 41 are attended, but we plan to expand it later. Dental status, impression and plaster cast, lateral cephalogram, OPG, profile, mouth photo, cervical muscle USG, postural analysis, questionnaire are taken for each child. The posture analysis is performed on children using an analysis wall for head, shoulders, scapula, pelvis position, and trunk arm triangle symmetry. During USG examination we are using Samsung HS40 device for the measurements. The measured muscles are SCM, Levator scapulae, Longus (capitis, colli), Scaleneus (anterior, media), Trapezius, Splenius capitis, Semispinalis (capitis, cervicis) on both sides in order to determine the symmetry/asymetry. The diameters of the muscles are measured twice and the average value is used for the evaluation. Measurements are taken at the level of the thyroid isthmus and the cartilago cricoidea.
We plan to extend the resarch by looking at factors that affect nasal breathing.

Results: From our ongoing research, we have data on 8 children. We experienced 3 deep bite, 2 cross bite, and 1 showed midline shift due to 22 aplasia. All children had right/left shoulder and scapula elevation. Normal iliac crest position in 1 child, others elevated. Only 2 had symmetrical trunk-arm triangles.1 child with suspected scoliosis and 2 with kyphotic posture. Lower limb length discrepancy was found in 4 children. Mostly Class I malocclusion was observed, 2 children had both Class (I,II).

Conclusion: Based on our initial data while setting up the method 2 Kyphotic posture with Class II malocclusion, and 2 assimetric malocclusion with poor posture was observed. Further conclusions can we make after all participants have been examined.

Key Words: maloclusion, posture, cervical ultrasonography

OP2. THE IMPACT OF SPECIALITY TRAINING ON THE AWARENESS AND KNOWLEDGE LEVEL OF DENTISTS IN THE USE OF CONE BEAM COMPUTED TOMOGRAPHY

Sema Nur ERSOY KÖLEGE, Süleyman Demirel Üniversitesi Diş Hekimliği Fakültesi, Ağız Diş ve Çene Radyolojisi

Fatma CAN, Süleyman Demirel Üniversitesi Diş Hekimliği Fakültesi, Ağız Diş ve Çene Radyolojisi

Derya YILDIRIM, Süleyman Demirel Üniversitesi Diş Hekimliği Fakültesi, Ağız Diş ve Çene Radyolojisi

Elif Sena SARGIN, Süleyman Demirel Üniversitesi Diş Hekimliği Fakültesi, Ağız Diş ve Çene Radyolojisi

Objective: For diagnosis in dentistry, Cone beam computed tomography (CBCT) is one of the most important imaging methods. The aim of this study is to evaluate the opinions, experiences and knowledge levels of dental specialists, dental specialty students, and non-specialist dentists regarding the use of CBCT imaging in dentistry.

Materials and Methods: A survey consisting of 30 questions was electronically sent to dental specialists, dental specialty students, and non-specialist dentists working in Turkey. The survey results were evaluated using descriptive statistical methods and the chi-square test.

Results: A total of 232 dentists participated in the survey. 40,1% of the participants were working at universities, 32,3% in public institutions, and 25,4% in private clinics. 48,3% of the participants were non-specialists, 31,9% were specialists and 19,8% were speciality/PhD students in dentistry. 87,1% of participants indicated panoramic radiography as their first-choice imaging method in clinical practice. While 47,4% of the dentists perceived their CBCT knowledge level as insufficient, 84,4% expressed a desire to get advanced education in CBCT, 45,3% had received CBCT education during their undergraduate education. Non-specialist dentists were more willing to receive advanced education compared to dental specialists (p<0.001). 13,1% of non-specialist dentists evaluated CBCT results only by reading the specialist report. Dentists working at universities preferred to evaluate CBCT imaging with oral and maxillofacial radiology specialists more than those working in public institutions (p=0.032). Reasons for requesting CBCT were tooth evaluation (13,6%), implant planning (13,4%), and diagnosis of pathological changes in the jawbone (12,7%), respectively.

Conclusion: The knowledge levels of dentists regarding CBCT are inadequate, and they express a desire to receive advanced education. Evaluating CBCT with an oral and maxillofacial radiology specialist or considering specialist reports alongside the examination will be beneficial in terms of accuracy. Rotation in oral and maxillofacial radiology is recommended in specialist/PhD student education.

Key Words: CBCT, specialty, dentist, education

OP3. FREQUENCY OF INCIDENTAL FINDINGS ON CBCT IMAGES WITH DIFFERENT FIELDS OF VIEW

Márton Tamás Kárpáti, member of the Students' Scientific Association at Semmelweis University, Department of Oral Diagnostics, Faculty of Dentistry, Semmelweis University, Budapest

Dr. Bence Tamás Szabó, Department of Oral Diagnostics, Faculty of Dentistry, Semmelweis University, Budapest

Purpose: The main purpose of our study was to report the presence and type of the incidental findings observed on different fields of view. Our present diagnostic imaging research was a comprehensive one with a higher number of patients to draw attention to the significance of possible incidental findings associated with each Cone-Beam Computed Tomography (CBCT) image sequence.

Materials and Methods: Three observers assessed 512 consecutive CBCT examination, retrospectively. The selected images were acquired between 01.06.2019 and 30.06.2020 using a Planmeca Viso G7 CBCT appliance with different indications. During the evaluation of the CBCT data, we recorded the incidental findings in the extraalveolar region. The lesions detected on the images were categorized based on their anatomical location and their type. Descriptive statistics were used for the evaluation of the results.

Results: Of the 512 CBCT images examined, 223 (43.6%) contained incidental finding outside of the indicated region. The majority of the incidental findings were detected on CBCT scans with a small field of view (66.4%). CBCT data, on which incidental finding was detected, was most frequently requested by oral surgery (45.3%). Various calcifications were detected (69.1%) most often according to the entity of the lesion.

Conclusion: Our results confirm the high prevalence of incidental findings in the head and neck region (43.6%), which highlights the need to evaluate the whole area of the image even with a small field of view.

Key Words: cone-beam computed tomography; incidental findings; diagnostic imaging

OP4. GIANT SIALOLITH LOCALIZED IN THE SUBMANDIBULAR GLAND: A CASE REPORT

Nazan KOCAK TOPBAS, Mersin University Faculty of Dentistry, Department of Oral and Maxillofacial Radiology

Mehmet OZGUR OZEMRE, Mersin University Faculty of Dentistry, Department of Oral and Maxillofacial Radiology

Lutfiye BAYSAL, Mersin University Faculty of Dentistry, Department of Oral and Maxillofacial Radiology

Objective: Sialoliths are calcified structures formed by the accumulation of calcium salts around bacteria, mucus and desquamated cells in the salivary gland ducts or parenchymal tissue. Although sialoliths can be seen at any age, they are more common in men in the 30-40 age group and in the submandibular salivary gland. Most of the submandibular salivary gland stones are located in the distal 1/3 of the gland duct, and a smaller portion are located in the posterior submandibular gland hilum and inside the gland. Among the salivary glands, sialolith formation is most frequently seen in the submandibular gland due to the alkaline pH of the saliva released by the submandibular gland, its high mucin and salt content, the fact that the course of the duct is against gravity, and the long, narrow and irregular course of the duct. Their size is usually smaller than 10 mm. Salivary gland stones larger than 15 mm are called megaliths (giant sialoliths). Sialoliths, which are mostly observed unilaterally, have well-circumscribed, round or oval structures. While some sialoliths have a homogeneous radiopaque structure, some appear as radiopaque layers. In this case report, we present a case of sialolith that has reached a very large size and is characterized by a painful swelling on bimanual palpation at the floor of the mouth, which was found incidentally on a panoramic radiograph.

Case Report: It was learned that there was no systemic disease in the anamnesis taken from a 51-year-old male patient who applied to Mersin University Faculty of Dentistry Oral and Maxillofacial Radiology Clinic to eliminate missing teeth. In the patient's history, it was learned that there was pain and dry mouth during eating. In panoramic and periapical radiographs, a well-defined and regular radiopaque area was observed in the right lower jaw, superimposed on the submandibular region. No abnormal findings were found in the extraoral examination. Intraoral examination revealed a painful swelling in the right area of the floor of the mouth. In the CBCT image taken for three-dimensional evaluation, the internal structure in the right submandibular region was observed to be mixed, well-circumscribed, with a hyperdense focus of 14x16 mm in size, and it was determined to be a sialolith.

Conclusion: Sialolith is a salivary gland disease that is detected by oral and maxillofacial radiologists and is rare to reach large sizes. A good history taken from the patient, careful examination of the floor of the mouth and neck area, and detailed 2D and 3D imaging are of great importance in determining the correct diagnosis.

Keywords: Calcification, Cone beam computed tomography, Sialolith

OP5. TRIFID MANDIBULAR CANAL CASE SERIES

KARDELEN DEMİREZER, Inonu University Faculty of Dentistry Oral and Maxillofacial Radiology

OĞUZHAN ALTUN, Inonu University Faculty of Dentistry Oral and Maxillofacial Radiology

Purpose:The location and configuration of the mandibular canal are important in surgical procedures involving the mandible. Bifid mandibular canal (BMC) and trifid mandibular canal (TMC) are variations of the normal anatomy. In the literature, occurrence of TMC is much rarer than BMC that only a few cases have been reported. These variations can be detected on a panoramic radiograph however more precise information about the course of the mandibular canal can be revealed on cross-sectional tomographic images. In this case series, trifid mandibular canal was detected in the examinations performed on the mandible of 6 patients who received cone beam computed tomography images for different reasons.

Results: Of the 6 patients, 2 of them consist of female patients, 4 of them consist of male patients.There are 4 lingual, 4 forward, 3 retromolar, 1 dental type channels available.

Conclusion:Bifid and trifid mandibular canals have important clinical implications inexplaining the cause of insufficient anesthesia and damage that will cause paresthesia or bleeding during mandibular surgery. Furthermore, planning the extraction of a third molar requires extra care when bifid or trifid canals are present in that area. Cone beam computed tomography (CBCT) with high spatial resolution is a useful tool for the detection of mandibular canal and its variation.

Key Words: trifid mandibular canal,cone beam computed tomography,mandibular canal variation

OP6. HOW SUCCESSFUL IS CHATGPT IN ANSWERING QUESTIONS IN THE FIELD OF ORAL AND MAXILLOFACIAL RADIOLOGY IN THE DENTAL SPECIALIZATION EXAM?

Emre Koyuncu, Fatma Akkoca, Günnur İlhan, Melih Özdede

Dokuz Eylül University Faculty of Dentistry, Department of Dentomaxillofacial Radiology, Izmir, Türkiye

Purpose: The Dental Specialization Exam (DUS), organized annually since 2012 by the Measurement, Selection, and Placement Center (ÖSYM), is based on the five-year dental education curriculum. The purpose of our study is to determine the success rate of ChatGPT (Chat Generative Pre-trained Transformer), an artificial intelligence platform, in answering Oral and Maxillofacial Radiology questions in the DUS.

Materials and Method: A total of 130 questions from the Oral and Maxillofacial Radiology section of 13 exams conducted between 2012 and 2021 (10 questions per exam) were asked to ChatGPT-4. The correct and incorrect answers were recorded in an Excel file to evaluate the performance of ChatGPT-4 in these exam questions.

Result: Out of the 130 questions, ChatGPT-4 correctly answered 103, resulting in a success rate of 79.2%. The lowest success rate was 60% in the autumn 2014 exam. The responses to questions asked at different times are consistent.

Conclusion: The success of artificial intelligence systems is increasing in various fields, and they can be beneficially used in dental education. With the development of artificial intelligence tools like ChatGPT, more successful outcomes can be achieved.

Keywords: Oral and maxillofacial radiology, ChatGPT, Specialization exam, Artificial intelligence

OP7. READABILITY ANALYSIS OF PATIENT INFORMATION TEXTS ABOUT ORAL CANCERS ON TURKISH WEBSITES

Emre Can KAYA[1], Melike GÜLEÇ[1]

[1]Karamanoğlu Mehmetbey University, Ahmet Keleşoğlu Faculty of Dentistry, Department of Dentomaxillofacial Radiology, Karaman,Turkey

Objectives: This study aimed to investigate the readability level of informational texts about oral cancers on Turkish websites at a time when approximately eight out of every ten people search for health-related problems on the internet.

Methods: The first 150 Turkish websites found in a Google (Google LLC, Mountain View, California, USA) search using the keyword 'oral cancers' were analyzed. Ninety-four informational texts that met the study criteria were evaluated according to the Ateşman Readability Index.

Result: Of the 150 websites analyzed in the study, 56 (37.33%) were excluded from the study due to exclusion criteria (n=13- less than 20 sentences, n=22- academic text, n=6-news, n=8-paid advertisement, n=7-video).

According to the Ateşman readability index, 13.8% (n=13) of the information texts in 94 websites included in the study were found to be at the easy level, 74.5% (n=70) at the medium level, and 11.7% (n=11) at the difficult level. According to Flesch's reading ease classification, 39.4% of the texts were found to be readable at the 9th-10th grade level and 35.1% at the 11th-12th grade level.

Conclusion: 74.5% of the text content of the sites encountered in searches using the term 'oral cancers' is moderately comprehensible according to the Ateşman readability index. While creating texts aiming to inform patients, it may be considered to utilize readability tools to prepare them by paying attention to the ease of readability level.

Key Words: Oral Cancers, Internet, Readability.

OP8. EXAMINATION OF NASOLACRIMAL DUCT MORPHOMETRY IN PATIENTS WITH UNILATERAL IMPACTED MAXILLARY CANINES BY CONE BEAM COMPUTED TOMOGRAPHY

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Purpose: This study aimed to examine morphometric changes in the nasolacrimal duct in patients with unilateral impacted maxillary canines using cone beam computed tomography (CBCT).

Materials And Methods: In total, 204 nasolacrimal ducts belonging to 102 patients (65 female, 37 male) were examined using CBCT. The narrowest transverse diameter and duct length of each nasolacrimal duct were measured, and the results were statistically compared.
The Shapiro-Wilk test was used to test normal distribution assumptions. The Mann-Whitney U test was conducted as the data were non-normally distributed. The kappa test was used to test intraobserver agreement. The level of statistical significance was accepted as $p<0.05$.

Results: The mean nasolacrimal duct length on the side of the impacted maxillary canine was 14.64±3.29 mm, and the mean nasolacrimal duct length on the erupted canine side was 14.52±2.9 mm. The difference between the nasolacrimal duct lengths of the impacted canine and erupted canine sides was not statistically significant ($p>0.05$). The mean narrowest transverse diameter of the nasolacrimal duct was 3.64±0.95 mm on the impacted canine side and 3.74±0.90 mm on the erupted canine side. The difference between the narrowest transverse nasolacrimal duct diameter values of the impacted canine and erupted canine sides was not statistically significant ($p>0.05$)

Conclusion: It was concluded that the impacted canines of patients with unilateral impacted maxillary canines do not significantly affect the diameter and length of the nasolacrimal duct.

Key Words: Nasolacrimal duct, impacted maxillary canine, cone beam computed tomography

OP9. EVALUATION OF TWO CASES OF SUBMANDIBULAR SIALOLITIS WITH CLINICAL, RADIOGRAPHIC AND ULTRASONOGRAPHIC FINDINGS

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Purpose: Sialoliths (salivary gland stones) are calcified obstructions in the salivary gland or duct and are one of the most common disorders of the salivary glands. Sialoliths occur in the submandibular gland (80%), parotid gland (5-20%) and sublingual gland (1-5%).The clinical picture is characterised by pain and swelling in the gland where the sialolith is located, which increases during meals, and a solid mass is observed on palpation. Conventional radiography, ultrasonography (USG) and cone beam computed tomography (CIBT) are the imaging modalities used in the diagnosis along with clinical examination.

Case Presentation: A 62-year-old male patient was admitted to our clinic. It was learnt that he had diabetes mellitus and hypertension. A routine panoramic radiograph showedan irregularly shaped, mixed, mostly hyperdense area in the alveolar crest in the right premolar region. In cone beam computed tomography (CIBT) images obtained for further imaging, an irregularly circumscribed, mixed calcified area with dimensions of 9.1x8x7.2 mm was observed in soft tissue in the inferior part of the lingual cortical bone at the level of the right premolar region. Ultrasonographic examination revealed a hyperechoic sialolith located in the hilar region with acoustic shadowing distal to the tissue. The patient was followed up periodically because of the absence of symptoms and normal salivary flow. A 58-year-old male patient was admitted to our clinic with the complaint of cheek swelling during meals. In the anamnesis, it was learnt that the patient had diabetes and was using insulin. Extraoral examination revealed a hard swelling in the right submandibular region which had been causing pain on swallowing for 3-4 days. Panaromic radiography showed a smooth radiopaque lesion in the posterior region of the right mandible. CIBT imaging revealed a cylindrical, cylindrical, hyperdense area of approximately 13.x12.7x9.4 mm in soft tissue at the level of the submandibular gland, which was thought to be sialolithiasis. Ultrasonographic examination revealed a hyperechoic sialolith located in the hilar region at the beginning of the submandibular gland and Wharton's duct, with acoustic shadowing distal to the tissue. The patient was consulted to the otorhinolaryngology clinic for removal of the sialolith.

Conclusion: Sialoliths should be evaluated together with the patient's history, clinical examination findings and imaging modalities and should be differentiated from soft tissue calcifications such as calcified lymph nodes, vascular calcifications, distant calcified neoplasm metastases and bone lesions such as mandibular torus and osteoma. The selection and interpretation of the correct imaging method is of great importance in the diagnosis of sialoliths.

Keywords: Panoramic radiography; sialoliths, ultrasonography, cone beam computed tomography

OP10. EVALUATION OF THE RELATIONSHIP BETWEEN MAXILLARY POSTERIOR TEETH AND MAXILLARY SINUS MUCOSAL THICKENING USING CBCT: PILOT STUDY

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Objective: This study aimed to evaluate the relationship between maxillary posterior teeth and maxillary sinus mucosal thickening using cone beam computed tomography (CBCT).

Methods: This retrospective study included CBCT images of healthy individuals aged 18-60 years. Premolar and molar teeth were examined due to their proximity to the maxillary sinus. The relationship between the teeth and the maxillary sinus was classified as "no contact, in contact, or inside the root sinus". The presence of apical lesions was classified as "absent or present." Additionally, tooth absence was recorded. Maxillary sinus mucosal thickening was measured separately for each tooth region. Mann-Whitney U test and Kruskal-Wallis test were used for statistical analysis. A significance level of $p < 0.05$ was determined.

Results: A significant relationship was found between tooth-sinus relationship and mucosal thickening. Mucosal thickening was higher when the tooth root was in contact with the sinus floor or within the sinus. A significant relationship was found between apical lesions and mucosal thickening. Mucosal thickening was higher in the presence of an apical lesion.

Conclusion: Clinicians should pay attention to interactions between dental factors and the maxillary sinus. Further studies examining additional parameters are needed in the future.

Keywords: apical lesion, cone-beam computed tomography, maxillary sinus, mucosal thickening

OP11. Evaluation of Temporomandibular Joint Osteoarthritis in the Normal Population: Pilot Study Summary

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Purpose: This study aimed to evaluate temporomandibular joint osteoarthritis in a population without any systemic disease using cone beam computed tomography (CBCT) images.

Method: This study was conducted by Çukurova University Faculty of Dentistry. Eighty-six patients were included. Morphological classification of the mandibular condyle in the coronal plane (convex, angled, flat, round) and osteoarthritis classification in the sagittal plane (normal, osteophyte, erosion, flattening, sclerosis) were made. Relationships between categorical variables were evaluated using the chi-square test ($p<0.05$).

Results: The right and left sides of 86 patients (39 ± 12.5, min:18, max:60), including 43 women and 43 men, were included in this study. Morphological classification prevalences are as follows: convex, round, angled, flat. There was no significant relationship between morphological classification and gender and age groups. Osteoarthritis classification prevalences are as follows: normal, flattening, erosion, osteophyte, osteosclerosis, subchondral cyst. There was no significant relationship between osteoarthritis classification and gender and age groups.

Conclusion: In the groups examined, no significant relationship was found between radiological findings of osteoarthritis and age and gender in the normal population.

Keywords: cone beam computed tomography, osteoarthritis, radiology

OP12. EVALUATION OF THE PREVALENCE OF C-SHAPED CANAL, RADIXENTOMOLARIS AND RADIXPARAMOLARIS IN A SUBGROUP OF THE TURKISH POPULATION BY CONE BEAM COMPUTED TOMOGRAPHY

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PURPOSE: The aim of this study was to evaluate the root variations seen in mandibular molars using cone beam computed tomography (CBCT) and to reveal the morphological characteristics of these variations.

MATERİALS & METHODS: In the study, KIBT images of 200 patients (134 females, 66 males) were retrospectively scanned and a total of 496 molars were included in the study group. The distribution of the presence of radixentomolaris (RE), radixparamolaris (RP) and C-shaped canals among the molars, gender, laterality and molars were determined. SPSS was used for data analysis and $p < .05$ was considered statistically significant.

RESULTS: The ages of the patients ranged between 10-71 years with a mean age of 32.4 years. The frequency of RP was 0.8% (n=4), RE was 4.2% (n=21), and C-shaped canal was 7.1% (n=35) in 496 molars. RE, RP and C-shaped canal were found in 3.4%, 0.2% and 0.2% of the lower first molars, respectively; RE, RP and C-shaped canal were found in 0.8%, 0.6% and 6.8% of the second molars, respectively. There was no statistically significant difference between the analysed root variations and gender ($p > 0.05$).

CONCLUSIONS: It is of clinical importance to be aware of the variations seen in mandibular molars to increase the success of endodontic treatments and to better understand the existing failures. Although these variations are seen with low frequency in the Turkish population, clinicians should be aware of these variations and should be able to detect these variations using KIBT when necessary.

KEYWORDS: Cone beam computed tomography, Prevalence, C-shaped canal, Radixentomolaris, Radixparamolaris

OP13. Repeatability of Radiomics Parameters in Cone Beam Computed Tomography Images

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Objective: Conversion of multidimensional data obtained with Computed Tomography (CT) in the field of medical imaging with radiomics into digitized data via mathematical methods are shown to contribute to the diagnosis process, determination of prognosis and treatment processes. However, there are a limited number of studies on using radiomics in Cone Beam Computed Tomography (CBCT) utilized in maxillofacial radiology. The differences in the working principles and the factors affecting image acquisition for CT and CBCT modalities may pose drawbacks for radiomics studies for to be conducted CBCT. Accordingly, the aim of this study is to investigate whether radiomics is a reliable measurement tool in CBCT by repeatability measurement of radiomics parameters and to investigate the specific radiomics features to be used in CBCT studies.

Method: In this study, radiomic analysis was performed using the 3D Slicer program on the data of 33 cases which were taken at different times and with the same CBCT device retrieved from the archive of Kocaeli University Faculty of Dentistry, Department of Oral and Maxillofacial Radiology. A total of 107 radiomics parameters were investigated with on segmented C2 (Axis) data in all cases. The results of the radiomic analysis were evaluated using the Intraclass Correlation Coefficient (ICC) in the SPSS program to assess repeatability.

Results: As a result of the radiomics analysis, good repeatability was observed on 11 out of 14 features associated with morphological features; 16 out of 18 features associated with first-order features; 14 out of 24 features associated with Gray Level Cooccurrence Matrix; 5 out of 14 features associated with Gray Level Dependence Matrix; 5 out of 16 features associated with the Gray Level Run Length Matrix; 10 out of 16 features associated with the Gray Level Size Zone Matrix and 3 out of 5 features associated with the Neighbouring Gray Tone Difference Matrix (ICC>0. 80).

Conclusion: This study presents a alternative parameters for radiomics analysis of CBCT images. To our knowledge, it is the first study to test the repeatability of radiomic features of CBCT in vivo. The poor repeatability of grayscale parameters should be taken into account when performing radiomics analysis of CBCT images.

Keywords: Radiomics; Cone beam computed tomography; Feature selection; Texture analysis

OP14. EVALUATION OF THE NASOPALATINE CANAL AND MAXILLARY SINUS WITH CBCT IN UNILATERAL AND BILATERAL CLEFT LIP AND PALATE PATIENTS

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Purpose: Cleft lip and palate (CLP) are common congenital malformations of craniofacial region. Nasopalatine canal (NPC) opens into oral cavity through the incisive foramen (IF) and terminates in nasal cavity through the Stensen foramen (SF). The aim of this study was to evaluate anatomical and morphological features of NPC and maxillary sinus on CBCT images of individuals with and without CLP.

Materıals & Methods: CBCT images of 21 unilateral, 21 bilateral CLP patients, and 21 individuals without CLP were retrospectively examined. The type of CLP, morphological structure of NPC, maxillary sinus pathologies, nasal septum deviation, presence of maxillary sinus septa, presence of impacted and missing teeth were determined by consensus of three observers while linear measurements were performed by a single observer. Chi-square test, one-way ANOVA, independent sample t-test were used to analyze categorical variables.

Results: There was no difference between groups in terms of SF diameter, IF diameter, IF number, distance to buccal cortical bone, and presence of maxillary sinus septa while the number of SF's was significantly lower (p=0.003) and the length of NPC was shorter (p<0.001) in CLP patients compared to control group. NPC demostrated Funnel-shaped in unilateral CLP , tree branch-shaped in bilateral CLP, and cylindrical morphology in control group more commonly. Significant difference was not found in frequency of maxillary sinus pathology between CLP and non-CLP groups. There was a significant difference in frequency of septum deviation among groups (p<0.001), it was more common in unilateral CLP patients. The frequency of impacted teeth in CLP patients was canine 26 (76.5%), lateral 6 (17.7%), central 1 (2.9%), premolar 1 (2.9%), respectively.

Conclusıon: This study demonstrates anatomical variations in the NPC in CLP patients and an increased prevalence of nasal septum deviation. Comprehensive radiological evaluation of maxilla with CBCT prior to surgery in CLP patients is important.

Keywords: Cleft lip and palate, cone beam computed tomography, nasopalatine canal, maxillary sinus, nasal septum

OP15. EVALUATION OF THE PERFORMANCE OF THE ARTIFICIAL INTELLIGENCE MODEL CREATED BY DEEP LEARNING ON DETECTING DENTAL TISSUES ON BITE-WING RADIOGRAPHY

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PURPOSE: Bite-wing radiography is an intra-oral imaging method used to assess bimaxillary coronal tooth structures and dental and periodontal diseases. Accurate identification of healthy and affected dental tissues is crucial for treatment planning and patient education. In dental radiology education, radiological evaluation of dental tissues can be conducted conventionally or interactively with artificial intelligence (AI). The aim of our study is to evaluate the effectiveness and reliability of a deep learning model, created using a deep learning algorithm, in detecting upper and lower jaw dental tissue structures (enamel, dentin, pulp) on bite-wing radiography images.

METHOD: A total of 357 bite-wing radiography images obtained with the ProX periapical x-ray device and located in the clinic archive were used in the study. Dental tissue labeling (enamel, dentin, and pulp) was performed using polygonal segmentation technique with the CranioCatch program. Two dentists performed a total of 9547 labels. The data was split into 80% for training, 10% for validation, and 10% for testing. Images were resized to 640×320 pixels, and augmentation methods (HSV -Hue, Hue -Saturation, HSV-Value, Mosaic) were applied. We trained the model using 2D convolutional neural networks (CNN) architectures and PyTorch-implemented YOLO-v5 models. Model performance was evaluated using sensitivity, precision, and F1-score calculated from the confusion matrix.

RESULTS: The model achieved 756 true positive, 8 false positive, and 75 false negative results. The sensitivity, precision, and F1-score for detecting dental tissues were 0.90, 0.98, and 0.90, respectively.

CONCLUSION: The model demonstrate high success according to performance metrics. These results reveal that artificial intelligence applications can be used successfully and safely as educational material in undergraduate dentistry education and as a visual diagnosis tool in patient-physician communication.

KEYWORDS: artificial intelligence; bite-wing radiography; deep learning; segmentation

OP16. Deep Learning Assisted Staging Of Periodontal Bone Loss Using Bite-wing Images

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PURPOSE: Periodontal disease is a significant global oral health problem. Radiographic staging is critical in determining periodontitis severity and treatment requirements. The aim of this study is to automatically staging of periodontal bone loss using a deep learning approach using bite-wing images.

MATERİALS & METHODS: 1752 bite-wing images were used for the study. Radiological examinations were classified in 4 groups. Healthy (normal): no bone loss, stage I (mild destruction): bone loss in the coronal third (<15%), stage II (moderate destruction): bone loss extending from the coronal third to the middle third (15-33%), stage III (severe destruction): bone loss extending from the middle third to the apical third with furcation destruction (>33%). %). All images were converted to 512x400 dimensions using bilinear interpolation. The data was divided into 80% training and validation and 20% testing. The classification module of YOLOv8 deep learning model was used for artificial intelligence based classification of the images. It was trained using fivefold cross-validation after transfer learning and fine-tuning based on four class results. After the training process, 20% test data, which the system has never seen, were analysed using the artificial intelligence weights obtained in each cross validation. Training and test results were calculated with average accuracy, precision, recall and F1-score performance metrics.

RESULTS: In the classification of bite-wing images as healthy, mild destruction, moderate destruction, severe destruction, training performance results were 86.1% accuracy, 84.7% precision, 82.3% recall, 84.4% F1-score, and test performance results were 83.4% accuracy, 81.7% precision, 80.8% recall, 81% F1-score.

CONCLUSIONS: The deep learning model gave successful results in the staging of peridontal bone loss in bite-wing images. Classification scores were relatively high for normal and severe damage in bite wing images, as they are more clearly visible than mild and moderate damage.

KEYWORDS: Peridontal Bone Loss, Deep Learning, Bite-wing

OP17. DETECTION OF RESIDUAL ROOT ON PANORAMIC RADIOGRAPHIES USING DEEP LEARNING ALGORITHMS

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PURPOSE: Residual root fragments after extraction are observed but are important for implant surgery and prosthetic planning. Panoramic radiography, a two-dimensional extraoral imaging method providing comprehensive information about teeth, jaw, and facial skeleton, enables the evaluation of residual roots in the mouth. The branch of artificial intelligence, called deep learning method, which has been used to solve many medical problems in recent years, is a field of study that includes artificial neural networks and similar machine learning algorithms that contain many hidden layers. The aim of our study is to evaluate the success of the model created using deep learning algorithms in detecting residual roots on panoramic radiographs.

MATERIALS & METHODS: In our study, panoramic radiography rates obtained using the data from the panoramic radiography device (Promax, Planmeca kVp = 66, mA = 7.0, t = 15.82 s, DAP mGy/cm2 = 80.4) in our archive were used. Images with artifacts that could cause misinterpretations in the evaluation, such as movement, foreign body, incorrect rooting, were not included in the study. A polygonal study was carried out on a total of 3183 panoramic images by a dentist with 3 years of experience. The labeling process was evaluated by 2 oral and maxillofacial radiologists, and a total of 6406 labels process approved by both experts were included. The labeling method was made with regional segmentation, and in the trainings, YOLOv8 method was used and the relevant model was trained 500 times. The data is grouped as 10% testing, 10% validation, and 80% test data. The performance metrics of the model were evaluated with sensitivity, precision and F1 score obtained from confusion matrix elements.

RESULTS: The sensitivity of the created model for the detection of residual roots on panoramic images is 0.975, precision is 0.933, F1 score is 0.954.

CONCLUSİON: These findings are anticipated to enhance dental radiology education by aiding in the differential diagnosis of radiopaque lesions. The results suggest that integrating the model into dental examination practice could serve as an educational tool and facilitate patient communication in treatment planning, offering efficiency and insight.

KEYWORDS: deep learning, residuel root, panoramic radiography

OP18. EVALUATION OF THE POTENTIAL OF ARTIFICIAL INTELLIGENCE LANGUAGE LEARNING ALGORITHM IN INTERPRETATION RADIOLOGIC REPORTS

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Purpose: Use of Artificial Intelligence Language Learning Algorithms (AILLA) are becoming popular in various medical fields and in dentistry. The aim of this study is to evaluate the success of two different versions of ChatGPT in terms of diagnosis and interpretation of radiologic reports of cone beam computed tomography (CBCT) scans.

Materials and Methods: Ten cases were retrieved from the CBCT report archive of Kocaeli University Faculty of Dentistry, Department of Oral and Maxillofacial Radiology. The data regarding the personal information, preliminary diagnosis, differential diagnosis and recommendation sections were excluded from the reports. Two different versions of ChatGPT (ChatGPT3.5 and ChatGPT4) were asked to indicate the radiologic prediagnosis and differential diagnoses of the cases in light of this given data. Then, preliminary diagnosis sections were included to the reports and both AILLAs were asked to explain these reports to a patient with no medical knowledge. The answers of both AILLA versions to the questionnaire were evaluated by oral and maxillofacial radiology experts using a likert scale.

Results: The scores of 20 questions asked to ChatGPT3.5 and ChatGPT4 versions were evaluated by Mann Whitney U test. The average diagnostic capacity score of ChatGPT3.5 was found to be 5.80 points, where as this score was 15.20 for ChatGPT4 with a statistically significant difference. ($p < 0.001$). Regarding the informative potential of the AILLAs, no significant difference was found in explanation of CBCT reports to the patient, the results of both versions were found to be satisfactory, with an average score of 35/50 for the ChatGPT3.5 version and an average score of 37.7/50 for ChatGPT4.

Conclusion: The results of this study for the ChatGPT-4 version were found to be higher and statistically significant in the interpretation and evaluation of CBCT reports. The higher scores for the recent version suggest that AILLAs will play an adjunctive role in the future proceeses of the radiological reporting workflows.

Keywords: Artificial Intelligence Language Learning Algorithms, Cone Beam Computed Tomography, ChatGPT

OP19. MORPHOLOGICAL VARIATIONS OF CONDYLE, CORONOID PROCESS AND SIGMOID NOTCH ACCORDING TO DENTITION STATUS OF ANTAGONIST JAWS

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Purpose: The aim of this study was to evaluate whether the morphological features of the coronoid process, condyle, and sigmoid notch differ according to age, gender, and dental status in a Turkish population.

Materials and Methods: The study was performed using 220 digital panoramic radiographs (18-85 years; 110 females, 110 males) examined for different shapes of the coronoid, condyle, and sigmoid notch. Data were categorized according to age, gender and dental status. The dental status was performed according to the Eichner classification. Chi-square test was used to compare the data. It was considered significant if the p value was less than 0.05.

Results: In this study, right and left triangular coronoid, inclined sigmoid notch and angled condyle were found most frequently. Morphological shapes of the right and left sides were also different (p<0.05).Only the right coronoid shape was affected by gender (p<0.05). The triangular shape was more common in women, while the round shape was more common in men. Only the right condyle shape differed significantly according to age (p<0.05). The rate of "round condyle" decreased with age. Coronoid, condyle and sigmoid notch shapes did not show a statistically significant difference according to the Eichner classification (p>0.05).

Conclusion: While the right coronoid shape was affected by gender, the right condyle shape was also affected by age. The morphological shapes of the right and left sides were also different. Various morphological shapes of this coronoid process, condyle and sigmoid notch can be used in anthropological studies and forensic dentistry. This study demonstrates that morphological variation using panoramic radiography can be used ambiguously as a screening method for personal identification due to its easy availability and suitability.

Keywords: Panoramic radiograph, coronoid, condyle, sigmoid, morphometry

OP20. MORPHOLOGICAL, FRACTAL AND TEXTURAL FEATURES OF THE MANDIBLE IN FAMILIAL MEDITERRANEAN FEVER PATIENTS: A CASE-CONTROL STUDY

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PURPOSE: Familial Mediterranean Fever (FMF) is an inflammatory disease and chronic inflammation may affect bone turnover and metabolism. This study aims to compare the morphological, fractal, and textural features of the mandibular bone in FMF patients with healthy controls on panoramic radiographs.

MATERIALS & METHODS: Fifty patients diagnosed with FMF and, age and sex-matched 50 healthy controls were included in the study. Morphological evaluation of the mandibular cortex on digital panoramic images of a total of 100 individuals was performed using the mandibular cortical index (MCI). For fractal dimension (FD) and texture analysis of trabecular bone, regions of interest (ROI) with a size of 50x50 pixels were selected from the trabecular bone region between the roots of the second premolar and first molar teeth. The box-counting method was applied to calculate the FD. Since the pixel gray-scale levels of these regions show different distributions, pre-processing was performed with histogram equalization for texture analysis. First-order and gray-level co-occurrence matrix-based second-order features of panoramic images were calculated and their textural characterizations were obtained.

RESULTS: The MCI values of the mandibular cortex did not significantly differ between the case and control groups ($p>0.05$). FD values for the trabecular bone were 1.43 in the case group and 1.44 in the control group, and there was no significant difference between them ($p>0.05$). First and second-order textural features of trabecular bone did not differ statistically significantly between the case and control groups ($p>0.05$).

CONCLUSION: Morphological features of the mandibular cortex, fractal and textural features of the trabecular bone are similar on panoramic radiographs in FMF disease.

KEYWORDS: Familial mediterranean fever, mandible, fractal, entropy, panoramic radiography

OP21. EVALUATION OF TURKISH WEBSITES PROVİDİNG INFORMATION ABOUT IMPACTED WISDOM TEETH IN TERMS OF CONTENT QUALITY AND READABILITY

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Purpose: This study aims to analyze the readability and quality of informative websites with Turkish text, which are accessed by patients when they search for impacted wisdom teeth on the internet.

Materials & Methods: As a result of a Google search with the keyword "impacted wisdom tooth", the first 55 websites containing Turkish text aimed at informing patients were included in the study. Websites that are repetitive or implement cookie policies, websites with advertising content, the videos and the images in the website contents are not included in the study. These websites were analyzed using Ateşman readability analysis, Quality Criteria for Consumer Health Information (DISCERN) and Journal of American Medical Association (JAMA) quality indexes.

Results: Of the 55 websites analyzed in the study, 69.1% (n=38) belonged to private dental clinics. The Ateşman readability index of the analyzed websites was calculated as 65.16±7.28 (48-88), DISCERN score as 37.87±12.40 (19-70), and JAMA index score as 1.34±0.96 (0-4). According to Ateşman, 70.9% of the analyzed web contents had medium difficulty (n=39), 25.5% had easy level (n=14), and 3.6% had difficult level (n=2). JAMA and DISCERN scores showed a statistically significant difference according to the content source of the websites (p<0.001, p=0.000).

Conclusion: It was determined that the readability of the texts on Turkish websites related to impacted wisdom teeth was of medium difficulty for the general population and the quality was low. By taking into consideration the quality criteria and readability level while preparing internet content, the use of the internet as a source of information in the field of health can be ensured to benefit society.

Keywords: Impacted wisdom teeth; Readability; DISCERN; JAMA

OP22. DETERMINATION OF THE FREQUENCY OF PULP CALCIFICATIONS IN BITEWING RADIOGRAPHS AND THE RELATIONSHIP BETWEEN DIFFERENT CHARACTERISTICS OF TEETH AND CALCIFICATION

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Purpose: This study aims to determine the frequency of pulp calcifications in bitewing images and the relationship between different characteristics of teeth and calcification.

Materials and Methods: In the study, the films of a total of 200 patients were evaluated by examining bitewing radiographs taken from patients who applied to Necmettin Erbakan University Faculty of Dentistry between 2023-2024. Teeth are divided into three groups according to the group in which the tooth is located (molar, premolar), according to the jaw it is located in (upper jaw, lower jaw), according to the side of the arch it is located in (left of the arch, right of the arch), and the presence or absence of pulp calcification is determined. has been recorded. The data obtained were analyzed using descriptive statistics and Chi-square tests ($p < 0.05$).

Results: According to the results of our study, at least one or more calcifications were observed in 45 patients (22.5%). Calcification was detected in 257 teeth (16.06%) among 1600 molars and in 198 teeth (12.38%) among 1600 premolars. While no significant difference was observed between gender and sides of the arch in the appearance of pulp calcifications, a significant difference was detected between jaws and age groups.

Conclusion: The prevalence of pulp stones in the Turkish population is 22.5%, but larger-scale studies are needed to evaluate the prevalence in the general population compared to other ethnic groups.

Keywords: bitewing radiography, pulp calcifications, pulp stone

OP23. EVALUATION OF ROOT AND ROOT CANAL MORPHOLOGY OF MANDIBULAR AND MAXILLARY CANINE TEETH BY CONE BEAM COMPUTED TOMOGRAPHY WITH USING TWO CLASSIFICATION SYSTEMS

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Purpose: Knowledge of root and root canal morphology is a prerequisite for effective nonsurgical and surgical endodontic treatments. The external and internal morphological features of roots are variable and complex. Hence, the aim of this cone beam computed tomography (CBCT) study was to evaluate the root canal morphology of permanent canines in a Turkish population using two classification systems (Vertucci 1984 and Ahmed et al. 2017).

Materials and Methods: A total of 2,000 canine teeth were examined using CBCT. The number of roots was identified, and root canal configurations were classified according to Vertucci's classification and a new system for classifying root and canal morphology. Fisher's exact test was used for statistical analysis, and the level of significance was set at 0.05 (p = 0.05).

Results: More than half of the canines were single rooted. The canal configuration type I was the most common in all canines, while type 3 was the second most common. According to the new system, the code 1C1-1 was the most common for canines, whilst 1C1 (A1) codes were the second most common for all canines. It has been found that the two-channel morphologies in double-rooted canines show significant differences. Sex and age were not effective factors for canal complexity (p>0.05).

Conclusion: Canines in a Turkish subpopulation had a slight variation in root and canal anatomical variations. Clinicians should be aware of where canals merge or diverge to prevent missing canals. The new system for classifying canal morphology describes the root and canal configurations in a more accurate and practical manner compared to the Vertucci classification.

Keywords: canine, root canal configuration, Vertucci classification, Ahmedi classification

OP24. EVALUATION OF ANTERIOR TEETH USING PERIAPICAL AND ENDODONTIC STATUS SCALE: RETROSPECTIVE STUDY

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PURPOSE: The aim of this study is to evaluate the prevalence of apical periodontitis and quality of endodontic treatment using the periapical and endodontic status scale (PESS) of maxilla and mandible anterior teeth with and without endodontic treatment by cone beam computed tomography (CBCT).

MATERIALS AND METHODS: CBCT images of 125 patients were included in study. The total number of dental data obtained from patients whose maxilla and mandible were evaluated is 250. While periapical health of 140 teeth with root canal treatment was evaluated with complex periapical index (COPI)(S (size of radiolucent lesion),R (relationship between root and radiolucent lesion),D (localization of bone destruction)) and the quality of endodontic treatment with the endodontically treated tooth index (ETTI)(L(length of root canal filling),H(homogeneity of root canal filling),CS(coronal seal),CF(complications-failures)) of PESS, the periapical health of 110 teeth without root canal treatment was examined only with COPI. Statistical analysis of distribution of maxilla and mandibular anterior teeth and endodontically treated teeth between COPI and ETTI variables was performed with Chi-square test.

RESULTS: There was a statistically significant difference in S parameter between maxilla and mandibular anterior teeth and COPI(S, R, D)(p = 0.014) S3(lesion larger than 5 mm in diameter) was seen in 119 of total 250 teeth(47.6%), and higher in right and left maxillary lateral teeth(p = 0.014). When looking at the relationship between S, R and D parameters and teeth with and without root canal treatment, lesions larger than 5 mm in diameter(S3) causing bone destruction(D3) were seen higher in teeth without root canal treatment(p<0.001), lesions up to 3mm in diameter(S1) and limited radiolucency around the root in teeth(D1) with root canal treatment were found to have significantly higher rate(p<0.001).

CONCLUSION : The absence of apical periodontitis has been associated with adequate root canal filling and complete obturation in endodontically treated teeth.

KEYWORDS: Apical periodontitis ,CBCT, Endodontic treatment ,Periapical and Endodontic Status Scale (PESS)

OP25. GARDNER SYNDROME: A CASE REPORT

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PURPOSE: Gardner syndrome (GS) is a phenotypic variant of familial adenomatous polyposis, characterized by numerous adenomatous polyps lining the intestinal mucosal surface with a high potential for malignancy. It is an autosomal dominant disease. Typically, patients with GS may present with osteomas of the mandible and skull, as well as epidermal cysts and fibromatosis. The purpose of this case report is to present the clinical and radiologic findings of a patient diagnosed with GS.

MATERIALS and METHODS: A 41-year-old woman applied to our clinic to replace her fixed prostheses. It was learned that the patient was diagnosed with GS due to polyps seen in the colon and that he was taking medication for this reason. Intraoral examination revealed a hard, smoothly circumscribed, bony prominences (palatinal torus, lingual torus) on palpation on the hard palate and anterior lingual mandible. The patient was imaged with orthopantomography (OPG) and cone beam computed tomography (CBCT).

RESULTS: In the OPG images of the patient, a minimally sized, smoothly circumscribed radiopacity was observed in the left maxillary sinus. Additionally, minimal irregularly circumscribed radiopacities were noted at the apices of the posterior teeth in both jaws. CBCT images revealed a minimal radiopacity (possibly a bone spur or osteoma) on the lateral
wall of the left maxillary sinus. Irregularly circumscribed radiopacities (potentially osteomas or hyperostosis) were also observed at the palatal aspect of tooth 15, buccal aspect of the left mandibular teeth, and buccal aspects of teeth 44 and 45, as well as at the apices of the posterior teeth in both jaws, not associated with the teeth themselves. Despite the findings, the patient declined the biopsy procedure as she did not have any complaints regarding the lesions. A follow-up appointment was scheduled for the patient after 6 months.

CONCLUSION: The primary jaw lesions associated with Gardner syndrome typically include multiple osteomas and odontomas. In cases where cutaneous cysts and osteomas result in dysfunction, surgical resection may be considered. Family screening becomes essential due to the autosomal dominant inheritance of the disease.

KEYWORDS: Gardner Syndrome, Osteoma, Cone Beam Computed Tomography