2 Matzen L, Christensen J, Hintze H, Schou S, Wenzel A. Influence of cone beam CT on treatment plan before surgical intervention of mandibular third molars and impact of radiographic factors on deciding on coronectomy vs surgical removal. Dentomaxillofac Radiol. 2013;42: 98870341.
3 Kallio-Pulkkinen S, Haapea M, Liukkonen E, Huumonen S, Tervonen O, Nieminen MT. Comparison of consumer grade, tablet and 6 MP-displays: Observer performance in detection of anatomical and pathological structures in panoramic radiographs. Oral Surg Oral Med Oral Pathol Oral Radiol. 2014;118:135-141.
4 Tadinada A, Mahdian M1, Sheth S, et al. The reliability of tablet computers in depicting maxillofacial radiographic landmarks. Imaging Sci Dent. 2015;45:175-180.

ULTRASONOGRAPHIC EVALUATION OF THE MASSETER MUSCLE BEFORE AND AFTER BOTULINUM TOXIN INJECTION IN PATIENTS WITH BRUXISM.

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Background: Bruxism is defined as a diurnal or nocturnal parafunctional activity of the masticatory muscles, with a prevalence of 20% and an impact of life quality. It is characterized by the compression and/or grinding of the teeth without purpose. In cases where conventional therapies are insufficient, botulinum toxin type A can be used as an alternative therapeutic treatment for patients who present masticatory muscle hyperfunction.

Objective(s): The purpose of this case series was to assess the masseter muscles before and after injection of botulinum toxin type A by using ultrasonography.

Study Design: Ethical approval and patient consent were obtained. Botulinum toxin injection was performed on 4 patients with bruxism. Masseter muscles on both sides were assessed before and 1 month after injection by using ACUSON S 2000 (Siemens, Munich, Germany) with a 9-18 MHz linear probe. Maximum width, height, and volume measurements of the masseter muscles were obtained, along with elastography and virtual touch IQ elastography measurements in both rest and contraction positions.

Results: Measurements obtained from the patients before and after injection at rest position showed a decrease of 10% and 3% in masseter muscle width and volume, respectively. Measurements obtained from the masseter muscles before and after injection at contraction position again showed a decrease of 20% and 3% in muscle width and volume, respectively. According to virtual touch IQ elastography values, approximately 20% reduction was found at both positions. However, we were unable to reveal any constant variation before and after injection at both positions in consideration of height and elastography.

Discussion/Conclusions: Certain measurements of the masseter muscle with ultrasonography before and after botulinum type A injection in patients with bruxism may provide useful information in the follow-up process. Further research is essential, with more patients evaluated at different follow-up intervals.

References

1 Park G, Choi YC, Bae JH, Kim ST. Does botulinum toxin injection into masseter muscles affect subcutaneous thickness? Aesthet Surg J. 2018;38:192-198.
2 Ariji Y, Nakayama M, Nishiyama W, Nozawa M, Ariji E. Shear-wave sonoelastography for assessing masseter muscle hardness in comparison with strain sonoelastography: study with phantoms and healthy volunteers. Dentomaxillofac Radiol. 2016;45:20150251.
3 Quezada-Gaon N, Wortsman X, Peñaloza O, Carrasco JE. Comparison of clinical marking and ultrasound-guided injection of botulinum type A toxin into the masseter muscles for treating bruxism and its cosmetic effects. J Cosmet Dermatol. 2016;15:238-244.

UNCOMMON FORM OF ECTODERMAL DYSPLASIA: TRICHO-DENTO-OSSEOUS SYNDROME.

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Background: Tricho-dento-osseous syndrome (TDOS) is an autosomal dominant genetic disorder, which is characterized by inherited defects in tissues that arise from epithelial−mesenchymal interaction. The minimal diagnostic criteria for TDOS include enamel hypoplasia, posterior taurodonts, autosomal dominant inheritance pattern, tightly curly hair at birth, and/or radiographic evidence of bone sclerosis. Some authors have questioned whether amelogenesis imperfecta of the hypomaturation−hypoplasia type with taurodontism (AIHHT) and TDOS are distinct conditions or denote a spectrum of the same disease.

Objective(s): The aim of this study was to increase awareness of TDOS.

Results: A 25-year-old female patient was seeking restorative treatment for the yellowish-brown discoloration of her teeth. Clinical evaluation revealed that she had multiple missing teeth, discolored teeth, frontal bossing, and a concave profile. She was otherwise healthy and not taking any medications. Her medical history indicated a previous diagnosis of ectodermal dysplasia (ED). Panoramic radiography and cone beam computed tomography (CBCT) revealed multiple missing and impacted teeth, as well as retained primary teeth. Reduction in enamel thickness on deciduous and permanent teeth was observed, in addition to taurodont appearance of second permanent molars. Generalized homogeneous ground-glass trabecular pattern in the maxilla and the mandible with a square shape of mandible was noted.

Discussion/Conclusions: In this report, we describe an unusual phenotype of ED, which represents a group of inherited conditions in which 2 or more ectodermally derived anatomic structures fail to develop. TDOS is an uncommon form of ED. The dental findings are clinically similar between TDOS and AIHHT; however, patients with AIHHT lack changes in their hair and bone. In cases where hair, bone, and nail changes are not significant, genetic analysis may help in differential

diagnosis. TDOS is genetically linked to markers on chromosome 17 q21.

References

1 Crawford PJ, Aldred MJ. Amelogenesis imperfecta with taurodontism and the tricho-dento-osseous syndrome: separate conditions or a spectrum of disease? Clin Genet. 1990;38:4450.
2 Price JA, Wright JT, Walker SJ, Crawford PJ, Aldred MJ, Hart TC. Tricho-dento-osseous syndrome and amelogenesis imperfecta with taurodontism are genetically distinct conditions. Clin Genet. 1999;56:35-40.
3 Nguyen T, Phillips C, Frazier-Bowers S, Wright T. Craniofacial variations in the tricho-dento-osseous syndrome. Clin Genet. 2013;83:375-379.
4 Neville BW. Oral and Maxillofacial Pathology. St. Louis, MO: Saunders/Elsevier; 2009.

A BLENDED LEARNING RADIOLOGY INTERPRETATION LAB: A QUALITATIVE APPROACH.

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Background: Blended-learning (BL) radiographic interpretation activities were implemented into the dental hygiene curriculum with the aim of increasing student confidence in interpretation and to address this perceived gap in students' education.

Objective(s): This study assessed senior dental hygiene (DH) students' self-reported confidence in interpreting dental radiographs after the introduction of a BL module for radiology interpretation. Preliminary results were presented at the American Academy of Oral and Maxillofacial Radiology (AAOMR) meeting in 2017. This abstract further describes the effectiveness of this qualitative approach and the subsequent changes that were implemented into the radiology curriculum.

Study Design: In order to capture the context, descriptions, and differences of students' experience and confidence, a qualitative research approach was selected. Data were captured using a semistructured interview process and analyzed using the phenomenographic approach. This method involves researchers coding transcripts of the interviews to determine categories of description (commonalities and their variations) of the participants' various ways of thinking about and describing their experiences. Sixteen students, 5 months from graduation, consented to participate and were interviewed. Blinded transcripts were analyzed by the research team, and the main themes relating to confidence were extracted and arranged into categories. The categories were coded as to how confident (low, medium or high) each of the students felt, specific to varying contexts and complexities of radiographic interpretation. Quotations were extracted to exemplify each category.

Results: The BL module had a positive impact on DH students' confidence in interpretation of radiographic findings. However, when asked about their level of overall confidence in interpreting dental radiographs, the students still did not describe themselves as confident with regard to all potential findings on radiographs at this point in their education.

Discussion/Conclusions: The phenomenographic approach revealed important themes relating to confidence and provided useful insights on the issues and attitudes affecting the students' confidence levels that can inform further course and curriculum development.

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Reference

1 McGee P, Reis A. Blended course design: a synthesis of best practices. J Asynchronous Learning Networks. 2012;16:7-19. Available at: http://sloanconsortium.org/jaln/v16n4/blended-course-design-synthesis-best-practices. Accessed November 12, 2017.

A CLINICAL AUDIT TO ASSESS THE QUALITY OF DENTAL RADIOGRAPHIC REPORTS.

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Background: Radiography forms an integral part of dental and maxillofacial practice, but its reporting continues to pose a variety of problems for practitioners. Chief among these are medicolegal complications and the detriment to patient care that arises from a lack of comprehensive record keeping.

Objective(s): This audit objectively assessed the completeness and variation of radiographic reports written by undergraduate dental students from year 2 to year 5, including dental core trainees (DCTs) and consultants. We aimed to provide recommendations enabling higher-quality reporting.

Study Design: Conducted at the Royal London Dental Hospital (UK), 100 radiographic reports were randomly selected for each of the chosen groups, and the data were collected retrospectively using clinical case notes. Based on national and international guidelines, we compiled a list of 10 criteria, against which all reports were judged. The data were recorded in a dichotomous manner for each criterion to minimize ambiguity. Each report was subsequently scored of ten (with equal weighting of each criterion) and the average for the group calculated.

Results: Data analysis revealed that less than 1% of reports met all criteria. On average, 5 criteria were met; however, there exists considerable variation between groups. A slight tendency for more comprehensive reporting with undergraduate seniority was noted, in opposition to a substantial drop at the DCT level and again at the consultant level.

Discussion/Conclusions: The data demonstrate a concerning lack of comprehensive reporting across all groups, especially at the higher-ranking levels. Possible explanations include a reduction in senior input and feedback; awareness of the importance of record keeping; time available for each patient encounter; and knowledge of current guidance and policy. Following these results, we recommend regular auditing of radiographic reports by every department and local publication of updates to guidelines and legislation. Raising awareness of this issue will