cylindrical radiopacity of mild intensity enveloping the tooth cervix, extending approximately 2 mm apically. Based on an expert oral and maxillofacial radiologist's consultation, a diagnosis of a foreign body around the tooth was favored, although no relevant anamnesis was given. A watch-and-wait policy was adopted, and the patient was observed regularly in follow-up for the next 4 years with mild but progressive gingival recession, revealing a larger part of the ringlike structure. Radiographically, the "lesion" did not show any changes; however, a progressive but overall limited resorption of the alveolar bone in the cervical area was observed. At age 6 years, the tooth was extracted, and, on gross examination, a cylindrical structure was detached with difficulty from the tooth, confirming its nature as a foreign body, most likely an accidentally misplaced rubber ringlike toy part. Subsequent follow-up confirmed uneventful eruption of the permanent central incisor.

Conclusions: Accidental impregnation of a foreign body in the oral soft tissues is an unusual but not rare event in children. However, the occurrence of a foreign body completely surrounding the cervix of a tooth, eventually becoming inseparable possibly due to calcification, is probably very rare. Although harmless, the peculiar clinical and radiographic appearance may cause diagnostic dilemmas.

ORAL ABSTRACT PRESENTATIONS

RELATIONSHIPS BETWEEN SUBJECTIVE TASTE SENSATIONS AND ELECTROGUSTOMETRY

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Objectives: The purpose of this study was to examine the relationships between subjective taste sensations and electrogustometry (EGM) results in patients with taste disorders according to the presence of burning mouth symptoms.

Methods: Forty-six patients (11 men, 53.5 ± 19.5 years; 35 women, 52.9 ± 12.9 years) with taste disturbances as a chief complaint were included. They were asked to complete a questionnaire including subjective taste sensations of 4 basic taste qualities and the pattern of taste disorders such as ageusia, hypogeusia, and dysgeusia. EGM was performed to measure detection thresholds of the chorda tympani, glossopharyngeal, and greater petrosal nerve areas in both sides. To examine the influence of burning mouth symptoms, they were divided into 2 groups: patients with (20 patients; 2 men and 18 women) and without (26 patients; 9 men and 17 women) burning mouth symptoms. The Mann-Whitney *U* or Kruskal-Wallis test was used to compare variables between the groups. The chi-square test or Fisher exact test for categorical variables and the Spearman correlation analysis for continuous variables were used to investigate associations.

Results: There were no significant differences in age and sex distribution according to the presence of burning mouth symptoms. Compared with the patients with burning mouth symptoms, those without burning mouth symptoms reported significantly lower levels of subjective taste sensations in all taste qualities and showed higher correlation levels between subjective taste sensations and EGM thresholds. Hypogeusia was the most common in both groups. Dysgeusia was more common than ageusia in the patients with burning mouth symptoms and vice versa in those without burning mouth symptoms. The pattern of taste disorders also showed more significant associations with the levels of subjective taste sensations in the patients without burning mouth symptoms than those with burning mouth symptoms.

Conclusions: Patients with taste disorder without burning mouth symptoms had a more severe level of taste disturbances than those with burning mouth symptoms. The pathophysiology of taste disturbances could differ according to the presence of burning mouth symptoms.

RECONSIDERATION OF THE NOMENCLATURE AND DISEASE DEFINITION OF BURNING MOUTH SYNDROME: AN INTERNATIONAL DELPHI SURVEY

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Objectives: We sought to determine whether the nomenclature, disease definition, and diagnostic criteria for burning mouth syndrome (BMS) should be revised on the basis of expert agreement using the Delphi method of consensus.

Methods: An international group of 30 BMS experts was invited to participate (April 2019). The study consisted of 3 iterative survey rounds, and findings were presented and participant feedback obtained in a fourth round. Qualtrics^{XM} survey software (Qualtrics, Provo, UT) was used to create an electronic self-administered questionnaire. The first survey included closed-ended and open-ended questions intended to generate suggested changes and gauge each participant's agreement (predefined as 70% in agreement) with the existing International Classification of Diseases, 11th Revision (ICD-11), nomenclature, diagnostic criteria, and disease definition for BMS. Subsequent rounds summarized and presented data from the previous round. Round 2 presented suggested changes and asked if participants agreed or disagreed (dichotomous variable); open-ended questions were for additional changes, comments, and rationales for their selections. Round 3 presented items that met with >50% but <70% agreement and new items that were suggested. Data were summarized using both quantitative (percentage agreement) and qualitative methods (thematic coding). This study was determined to be exempt by the Case Western Reserve University Institutional Review Board (20190366).

Results: Thirty screening e-mails were sent to international experts in BMS, and 22 expressed interest in participating. Nineteen experts completed round 1, 17 completed round 2, and 15 completed round 3 for 86%, 89%, and 88% response rates, respectively. Consensus was reached that BMS should not be classified as a syndrome (15 of 17) and that it should be renamed (15 of 19) "burning mouth disorder." Consensus included that the following should be removed from the diagnostic criteria: (1) emotional distress or functional disability and (2) the number of hours per day that symptoms occur. All other items that reached consensus clarified the disease definition and diagnostic criteria, including delineating the local and systemic causes of oral burning that should be evaluated before diagnosis.

Conclusions: International consensus among selected experts indicated that the proposed ICD-11 nomenclature,

disease definition, and diagnostic criteria can be improved and clarified.

USE OF PRESCRIPTION SIALAGOGUES FOR MANAGEMENT OF XEROSTOMIA IN CHRONIC GRAFT-VS-HOST DISEASE

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Objectives: The objective of this study was to analyze use patterns of prescription sialagogues for management of xerostomia in patients with chronic graft-vs-host disease (cGVHD) after allogeneic hematopoietic cell transplant (allo-HSCT).

Methods: A retrospective chart review was conducted of patients who were diagnosed with cGVHD and prescribed sialogogue therapy from 2005 to 2019. Data collected included patient demographic characteristics, date of transplant, date of oral cGVHD diagnosis, concurrent immunosuppressive medication, sialogogue regimen including start and end dates, worst xerostomia score reported, and patient-reported percentage improvement.

Results: This study included 67 patients with a median age of 64 years (range, 25-78 years) diagnosed with oral cGVHD at a median of 8.2 months after allo-HSCT. Most patients were prescribed pilocarpine (81%) at 5 mg (88.5%) or, less frequently, 7.5 mg (3.8%), 10 mg (5.8%), or 15 mg (1.9%). Cevimeline was prescribed less frequently (19%), always at 30 mg. The median worst xerostomia score was 6.5 (range, 1-10). Pilocarpine dose was increased in 2 patients (4%) with no subsequent change in worse xerostomia score or percentage improvement. Overall median duration of therapy was 7.4 months (range, 1-152). For patients receiving pilocarpine, the median duration on therapy was 7 months (range, 1-152), and for patients on cevimeline, the median duration was 10 months (range, 1-111 months). The overall median patient-reported percentage improvement was 20% (range, 0-100%). Most common side effects were diarrhea (1.6%) and nausea (2.9%); excessive sweating was infrequent (1.4%).

Conclusions: The median duration of sialogogue therapy was 7.4 months, and most patients were prescribed pilocarpine at 5 mg. The median overall reported improvement was 20%, and side effects were infrequent and did not lead to therapy discontinuation. Patients receiving higher dosages of pilocarpine had a higher worst xerostomia score and a lower percentage improvement in symptoms. The prolonged duration of therapy suggests perceived benefits; however, prospective studies are needed.

ASSOCIATION OF *CANDIDA* AND FLUCONAZOLE THERAPY WITH PROINFLAMMATORY CYTOKINES IN ORAL LEUKOPLAKIA: A PILOT STUDY

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Objectives: Chronic inflammation caused by infection may lead to the production of proinflammatory cytokines (PICs) that can cause DNA damage and cell proliferation, thus playing a role in carcinogenesis. *Candida* infection has been reported to be increased in oral leukoplakia (OL) and is associated with an increased rate of malignant transformation into oral squamous cell carcinoma (OSCC). In vitro studies have demonstrated that the interactions between *Candida* and the oral epithelium lead to the release of PICs (interleukin [IL]-6, IL-8. IL-17, tumor necrosis factor [TNF]-α) that have also been found to be upregulated in OSCC and OL. This study aims to determine the correlation between *Candida* infection and PICs and their response to fluconazole therapy in OL.

Methods: Immunocompetent adult patients with OL (30 homogenous leukoplakia [HL], 30 nonhomogenous leukoplakia [NHL]) and 30 age- and sex-matched healthy control subjects (C) with no predisposing factors for oral candidal infection were recruited. Sterile cotton swabs and polyvinyl alcohol ophthalmic sponges were used to take samples from the lesional surface in OL and from the buccal mucosa in C for direct microscopy and culture for *Candida* and to determine levels of PICs (IL-6, IL-8, IL-17, TNF-α) by enzyme-linked immunosorbent assay, respectively. Sampling for PICs was repeated from the same sites in OL after treatment with tablet fluconazole 100 mg (oral rinse for 2 minutes and swallow) once daily for 14 days. Chi-square and Mann-Whitney *U* tests were used to estimate the difference between the groups.

Results: Forty percent of patients with NHL and 30% of patients with HL had positive findings for *Candida albicans*. Levels of IL-6, IL-8, and IL-17 were observed to be significantly higher ($P < .05$) in patients with NHL than in those with HL and in C. Patients with NHL and HL showing the presence of *C. albicans* had significantly ($P < .05$) higher levels of IL-6, IL-8, IL-17, and TNF-α than C and showed reduction in their levels and clinical improvement (decrease in size, thickness, and erythema) after fluconazole therapy.

Conclusions: Candidal infection is common in OL and causes release of PICs. There is a decrease in levels of these PICs and clinical improvement after fluconazole therapy in both NHL and HL. Hence, antifungal therapy in the management of OL can reduce the inflammatory milieu in which carcinogenesis can occur.

IN VIVO ECTOPIC OSTEOGENESIS OF ADIPOSE-DERIVED MESENCHYMAL STEM CELLS/OSTEOBLASTS COMBINED WITH PLLA/HAP NANOSTRUCTURED AEROGEL SCAFFOLDS

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Objectives: Osteoblast deficiency is a key problem in bone tissue engineering, and transplant of mesenchymal stem cells combined with osteoblasts can achieve ideal results. We sought to investigate the in vivo ectopic osteogenesis of adipose-derived mesenchymal stem cells (ADSCs) and osteoblasts (OBs) combined with poly(L-lactic acid) (PLLA)/hydroxyapatite (HAp) nanostructured aerogel scaffolds.

Methods: We tested a new supercritical fluid-assisted technique for the formation of nanostructured aerogel scaffolds. We obtained PLLA aerogel scaffolds and PLLA/HAp aerogel