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DENTAL CONSIDERATION AND MANAGEMENT OF CANCER PATIENTS BEFORE INITIATION OF IV BISPHOSPHONATES.

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Purpose: Osteonecrosis of the jaw (ONJ) related to intravenous bisphosphonates (IVBP) is characterized by exposed necrotic bone in the maxillofacial region in patients who have received or are receiving treatment with IVBP and have no history of radiation therapy of the jaws.[1] The risk of complication of using IVBP for oncologic purposes can be reduced with effective management of cancer patients. Therefore, it is imperative for practitioners to follow patient-specific guidelines for the dental management of patients who will be treated with IVBP. The purpose of this article was to provide a patient-specific, individualized approach for the dental management of patients before initiation of IVBP to prevent ONJ. This guideline will focus on 3 separate factors: the cancer, the patient, and the dentition.

Methods: A systematic literature review was conducted via PubMed using the following medical subject headings and terms: "bisphosphonates," "avascular necrosis," "bisphosphonate-related osteonecrosis of the jaw," and "medication-related osteonecrosis of the jaw." We then cross-referenced the same terms with the terms "multiple myeloma (MM)," "breast cancer," "prostate cancer," "jaw disease," and "metastatic cancer" to identify publications that can provide evidence to develop pretreatment dental guidelines in cancer patients treated with IVBP. Articles were reviewed as a result of the PubMed literature search. The cancer types evaluated included breast cancer, prostate cancer, and MM. Relevant studies regarding patient- and dentition-related factors and their relation to IVBP treatment of the said cancers, survival, or comorbidities were evaluated.

Results: Upon review of articles, 137 articles met our inclusion criteria. No association was found between development of ONJ and the primary tumor site. The hazard of developing ONJ was significantly higher in patients who received zoledronic acid alone compared to those who received pamidronate alone or in combination with zoledronic acid. Our review also concluded that time of exposure to IVBP is strongly associated with development of ONJ, with exposure beyond 4 years of IVBP treatment increasing the incidence of ONJ significantly.[2] Our literature search indicated that the risk of development of ONJ after IVBP treatment in cancer patient is also dose dependent, with higher doses being associated with higher risk of ONJ. This suggests that not only does the type of IVBP treatment positively correlate with the likelihood of developing ONJ, the dose and duration of IVBP therapy is also a significant factor. Our analysis identified several unique patient characteristics, including motivation, presence of a support system, socioeconomic status, nutrition, and race, which have all been found to affect the outcomes of IVBP therapy. Dental disease and available supportive dental management was found to significantly impact treatment and quality of life in this patient population.

Conclusion: Complications from IVBP treatment in cancer patients can have a lifelong impact on quality of life. Dentists and oral and maxillofacial surgeons can play a major role in preventing and minimizing these complications. The cancer, the patient, and the dentition should be analyzed thoroughly to assemble an effective pre-IVBP dental treatment plan. A pre-IVBP extraction-based dental treatment plan is warranted for patients with history of noncompliance, limited financial means, lack of motivation, and presence of tooth factors that decrease the prognosis of dentition. Use of zoledronic acid, IVBP for extended period of 4+ years, and dosage of 22.6 doses or higher are associated with significantly higher chance of developing ONJ and a more aggressive dental treatment (e.g., extraction vs restoration) should be utilized in treatment of these patients.

References

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NEW CRITERIA DEMONSTRATE SUCCESSFUL OUTCOMES FOLLOWING TEMPOROMANDIBULAR JOINT (TMJ) ARTHROSCOPY.

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Purpose: Outcomes of temporomandibular joint (TMJ) surgery, including TMJ arthroscopy, use both subjective and objective criteria based on changes in pain and maximum interincisal opening (MIO). TMJ arthroscopy has reported success rates of 80% to 90%.[1,2] Studies have demonstrated an increase in MIO may not be accompanied by reduction in pain, and conversely, reduction in pain may result without an increase in MIO. The purpose of this study was to determine whether the use of a MIO-pain change measurement/index that provides equal weight to objective changes in MIO and subjective changes in pain would more accurately reflect the results of surgery.

Methods: The study included 102 patients with internal derangement and severe inflammatory/degenerative TMJ disease (Wilkes II–V) that failed nonsurgical management and underwent arthroscopy. All patients underwent advanced operative arthroscopy, including removal of adhesions, debridement and biopsy of pathologic tissues, disk mobilization, and injection of steroid medication into inflamed synovium under direct vision. Surgical outcomes (successful vs unsuccessful) were based on a MIO-pain change measurement/index that provided equal weight to objective changes in MIO and subjective changes in pain (visual analogue scale [VAS]). Preoperative pain and MIO changes were compared to postoperative pain

and MIO changes, and comparisons between the more successful and the least successful TMJ arthroscopic results were performed (*t* test). To determine if there were any significant predictive differences in the successful and unsuccessful groups, the following variables were compared: gender, age, arthroscopic findings, magnetic resonance imaging (MRI) findings, and MIO-pain changes.

Results: The mean postoperative follow-up period was 7.9 months. Comparison of the groups with respect to the combined MIO-pain change index demonstrated significant differences between the successful group (SG) (1.2338 + 0.5588) and the unsuccessful group (UG) (0.15010 + 0.3418) ($P < .000000003$), confirming the value of using a combined MIO-pain change index. Overall outcomes of TMJ arthroscopy revealed significant reductions in pain (preoperative VAS = 6.6 + 2.1; postoperative VAS 2.6 + 2.7; $P < .05$) and increases in MIO (preoperative 30.4 + 7.1 mm; postoperative 40.1 + 6.7 mm; $P < .05$). Systemic arthropathy was present in 14% (n = 14/102) and atypical pathology in 9% (9/102) patients. The SG included 88% (90/102) and the UG 12% (12/102) of the patients, based on MIO-pain changes. The SG was 87% females, with a female/male ratio of 6.5:1; and in the UG, 100% were females. Age differences between the SG (mean age 42 years) and UG (mean age 31 years) were significant ($P < .05$). There were no major differences in the SG compared to the UG with respect to arthroscopic findings; osteoarthritis (SG = 39%;UG = 50%), synovitis (SG = 94%;UG = 100%), adhesions (SG = 74%;UG 83%); and MRI diagnosed effusion (SG = 81%;UG = 83%) and disk displacement (SG = 80%;UG = 83%).

Conclusion: This study demonstrated similar successful outcomes following TMJ arthroscopy as previous reports. There were no major predictive differences between the SG and the UG, although the mean age of the SG was older than the UG. This study demonstrated that the outcomes of arthroscopy must consider the importance of establishing an accurate diagnosis (atypical intra-articular pathology and systemic disease), which can alter the course of treatment. Importantly, using an outcome measurement with equal influences of pain and MIO changes, may provide a more accurate depiction of the effects of surgery.

References

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MANAGEMENT OF OBSTRUCTIVE SLEEP APNEA THROUGH A MULTIDISCIPLINARY SLEEP CLINIC.

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Purpose: Obstructive sleep apnea (OSA) has become increasingly prevalent in recent years.[1] The burden of the condition on the individual as well as the collective health care system has been well characterized and is primarily evidenced in the contribution of OSA to cardiovascular, metabolic, and psychiatric disorders.[2] Management of OSA is often plagued by fragmentation of care among disarticulated individual providers, who may have expertise in certain aspects of the disease but often lack the comprehensive knowledge base necessary to adequately address all of its multifaceted intricacies.[3] Collaboration among providers has proven critical to coordination of relevant diagnostic and treatment modalities across the array of medical specialists.[4] The purpose of this study was to provide an example of how a multidisciplinary sleep clinic (MDSC) can optimize patient care by facilitating appropriate nonsurgical and surgical interventions through collaboration of relevant providers, namely, oral and maxillofacial surgeons, otolaryngologists, neurologists, and dentists.

Methods: This retrospective study reviewed the cases of 20 patients seen at the Virginia Commonwealth University Health System Multidisciplinary Sleep Clinic between April 2018 and April 2019. Patients were referred following diagnosis of OSA with intolerance to positive airway pressure management. Patients underwent baseline polysomnography and a variety diagnostic modalities. Based on the diagnostic workup, appropriate intervention was recommended for each patient. Recommendations included both nonsurgical management by the neurologist/dentist and surgical management by the oral and maxillofacial surgeon/otolaryngologist. Efficacy of the completed intervention was measured by using repeat polysomnography.

Results: Twenty patients were evaluated over 9 meetings during the year analyzed. Six completed diagnostic studies, were given management recommendations, and underwent their respective management modality with an average reduction of their Apnea Hypopnea Index (AHI) score from 34.5 to 14.4. Ten patients had pending surgical intervention, postintervention polysomnography/home sleep test, or continued diagnostic workup at the time of data query. Three patients had failed follow-up after surgical intervention was recommended. One patient withdrew from the study. Interventions completed and/or planned at the conclusion of the study included nonsurgical management (oral appliance therapy, modification to existing positive airway pressure device) and surgical management (septoplasty, turbinate reduction, adenoid ± lingual tonsil removal, uvulopalatopharyngoplasty, tongue base ± reduction, hypoglossal nerve stimulator implantation, hyoid suspension, and maxillomandibular advancement).

Conclusion: This retrospective study demonstrated that patient care can be facilitated through the collaboration of relevant providers in the management of OSA. All study patients who had completed the recommended interventions demonstrated successful reduction in AHI scores within 1 year of initial workup. Half of the population had ongoing workup, pending intervention, or incomplete repeat polysomnography at the conclusion of the study. This short duration and small patient population served as limitations. However, both limitations stem from the relatively short period in which the MDSC has been in operation at this institution. Within these limitations, the study provides a template upon which further research may be built. Future studies must be directed toward increased number of participants and length of follow-up, along with inclusion of subjective assessment of patient satisfaction with the collaborative approach and comparison of outcomes in patients undergoing management of OSA through individual providers versus providers within a collaborative setting.