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Radiation Therapy and the Dental Management Team

The wide-ranging side effects of ionizing radiation to the head and neck region are well known and are related to cumulative doses that vary from 50 to 70 Gy delivered over a five to seven week timescale. An anatomically complex region, the oral/salivary and oropharyngeal area will demonstrate variable degrees of sensitivity and morbidity as a result of non-surgical cancer management. With the increasing use of combined modality management with radio-sensitizing chemotherapeutic agents, normal tissues are further affected by the primary radiation treatment by way of sublethal damage and corresponding clinical alterations, which have an impact on daily life. The immediate or acute effects of irradiation include oral and oropharyngeal mucositis. Such effects are very bothersome, to the extent that at times the oral and oropharyngeal radiation-related morbidity may be the rate-limiting factor in terms of maintaining continuity of treatment. Diminution of, or loss of taste acuity, hyposalivation, and xerostomia constitute a set of painless but significant morbidities, with the impaired saliva secretion complication potentially capable of producing devastating and rapidly progressive dental caries (Jensen et al, 2003; Hofer et al, 2004). Nevertheless, an effective salivary fluid replacement containing the dental and mucosal protective and reparative components associated with this secretion is still not available.

In this issue Martinez et al appropriately emphasize the critical role of proper and detailed dental and oral evaluation prior to the initiation of radiotherapy; thus, having a dental and oral practitioner as a member of the head and neck cancer team becomes a necessity. As a component of overall cancer management, further emphasis is required regarding proper management of dental, periodontal and oral disease prior to radiation therapy in terms of providing oral and head and neck cancer patients with a greater degree of orally-directed education regarding anticipated co-morbidities at the time of referral. Further details on preventive treatments (Clarkson et al, 2004) can be found in the Cochrane Library, which also contains systematic reviews on treatments of other conditions found in radiotherapy patients.

Within the group of head and neck cancer patients, the challenges to the dental team in terms of patient compliance are poorer levels of general oral health, lifelong or chronic dental neglect and/or only sporadic, emergency-based treatment. The immediate institution of an often complex dental treatment plan coupled with the oncologic treatment protocol must be carefully managed from a behavioural as well as a dental clinical perspective Such patients often face the immediate need for dental extractions, caries control and periodontal management in addition to the implementation of a strict oral disease prevention strategy, where none existed previously. Earlier studies have underscored minimal levels of motivation within this group of patients and an associated absence of dental and periodontal management in the past (Lockhart and Clark, 1994).

The decision to extract otherwise normal teeth due is disturbing when based on a stated absence of motivation, presumably in anticipation of the usual radiation-related morbidities, both short term and chronically. This philosophy is further emphasized by the study of Bruins et al (1999) with risk-associated factors clearly defined.

Carmen et al (2004) have shown the efficacy of a caries control protocol utilizing inexpensive materials that are readily available within the context of a motivated and therefore, educated patient base. Apart from the use of fluoride, chlorhexidine, oral hygiene measures, salivary stimulation, frequent dental monitoring and follow-up, and increased oral health awareness, the level of effort is the factor that must be expanded by the oral health team in appreciating the complex nature of radiation-related oral compli-

cations, the management of the primary oncologic disease, and the role/obligation of the patient in this paradigm.

The Royal College of Surgeons of England have published guidelines on treatment of oncology patients which can be found on their website: http://www.rcseng.ac.uk/dental/fds/clinical_guidelines/index_html

These guidelines include information for patients and need to be more widely disseminated.

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