Dental Management of Head and Neck Cancer patients in Northern Ireland: a retrospective analysis

Background
Head and neck cancer principally affects the oral cavity, nasal cavity, sinuses, salivary glands, pharynx and larynx. Approximately 300 people are diagnosed with such a malignancy in Northern Ireland every year. Management of head and neck cancer typically entails an extensive multidisciplinary approach combining input from maxillofacial and ENT surgery, oncology, radiology, restorative dentistry, and other specialties.

Objective
To determine the oral health outcomes and standard of care provided for Northern Ireland’s (NI) head and neck oncology patients referred for pre-treatment dental assessment by the Multidisciplinary Head and Neck Team (MDT), Royal Victoria Hospital, Belfast, and to assess the impact of using a standardised referral pro-forma for dental assessment.

Methods
A retrospective analysis was undertaken of all head and neck oncology patients referred for pre-treatment dental assessment to the Centre for Dentistry, Queen’s University, Belfast between June 2013 and November 2014. A standardised referral pro-forma was introduced from June 2014 in an attempt to streamline the referral process. Prior to this, patients were referred on an informal ad-hoc basis. Information on the patient’s planned oncology treatment, dental assessment, and dental treatment plan, was determined from their referral letter, their dental notes, and their NI Electronic Care Record. Comparison was made with published guidelines and a review of the relevant literature. Standards were set using guidelines from the Royal College of Surgeons of England, the National Institute for Health and Care Excellence, and the British Association of Head and Neck Oncologists.

Literature Review
The key messages from the literature were:
- All patients should be assessed by a consultant restorative specialist both before and after their cancer treatment.
- The assessment should take place within 7 days of diagnosis at the outpatient clinic. It should be undertaken with the same urgency as panendoscopy or exploratory surgery, and with preferential urgency to the first multidisciplinary team meeting (14 days).
- Studies suggest an incidence of osteoradionecrosis between 5-15% for all head and neck radiotherapy (XRT) patients. The risk following dental extraction is highest immediately prior to, or immediately post radiotherapy (first 4 to 12 months after).
- The Royal College of Surgeons of England request that teeth of dubious clearance under general anaesthetic.
- The National Institute for Health and Care Excellence recommends:
  - Teeth recommended for extraction include those with deep caries, deep periodontal pocketing, furcation involvement, non-vitality, retained roots, and unopposed teeth.
  - Studies suggest an incidence of osteoradionecrosis between 5-15% for all head and neck radiotherapy (XRT) patients. The risk following dental extraction is highest immediately prior to, or immediately post radiotherapy (first 4 to 12 months after).
- Recommendations for dental management vary depending on the radiation treatment type and cancer site.
- Teeth recommended for extraction include those with deep caries, deep periodontal pocketing, furcation involvement, non-vitality, retained roots, and unopposed teeth.
- The Royal College of Surgeons of England recommends:
  - Teeth recommended for extraction include those with deep caries, deep periodontal pocketing, furcation involvement, non-vitality, retained roots, and unopposed teeth.
- The National Institute for Health and Care Excellence recommends:
  - Teeth recommended for extraction include those with deep caries, deep periodontal pocketing, furcation involvement, non-vitality, retained roots, and unopposed teeth.
- The British Association of Head and Neck Oncologists recommends:
  - Teeth recommended for extraction include those with deep caries, deep periodontal pocketing, furcation involvement, non-vitality, retained roots, and unopposed teeth.
- The American Cancer Society recommends:
  - Teeth recommended for extraction include those with deep caries, deep periodontal pocketing, furcation involvement, non-vitality, retained roots, and unopposed teeth.

Results
96 patients initially were assessed. 41 patients were referred by pro-forma and 55 by email, letter, or telephone. Overall, 51% of tumours were diagnosed within the oral or nasal cavities (figure 2). 21% of patients had initially been referred by their general dental practitioner (GDP). 72% of patients were registered with a GDP. Only 3 patients were dentally assessed within the recommended 7 days post-diagnosis.

Pro-forma vs. Non pro-forma
The introduction of the referral pro-forma has resulted in a decrease in the mean number of days from MDT-referral to pre-treatment dental assessment (figure 4). Patients requiring pre-XRT extractions and referred by pro-forma also had a longer number of days from MDT-referral to pre-treatment dental assessment (figure 3).

Conclusion
Given the high prevalence of pre-existing oral disease amongst head and neck cancer patients, prompt dental assessment and treatment intervention is vital. Efforts aimed at improving the care pathway are ongoing within the Restorative Department through the implementation of a mandatory referral pro-forma and a dedicated assessment clinic.

References:

Figure 1: Head and Neck Referral Pro-forma for Dental Assessment introduced within the Belfast Health and Social Care Trust/ Queen’s Centre for Dentistry, Belfast, from June 2014.

Figure 2: Pie chart showing distribution of diagnosed tumour site.

Figure 3: Graph showing the percentage of head and neck oncology patients diagnosed with specified dental pathology.

Figure 4 (left) and 5 (right): Graphs comparing those referred by pro-forma and those referred on an informal ad-hoc basis.

Table 1: Table showing the percentage of pro-forma and non pro-forma referrals that definitely indicated whether or not surgery, chemotherapy, and/or radiotherapy were to form part of an oncologic treatment plan.

Table 1: Table showing the percentage of pro-forma and non pro-forma referrals that definitely indicated whether or not surgery, chemotherapy, and/or radiotherapy were to form part of an oncologic treatment plan.

Figure 2: Pie chart showing distribution of diagnosed tumour site.

Figure 3: Graph showing the percentage of head and neck oncology patients diagnosed with specified dental pathology.

Figure 4 (left) and 5 (right): Graphs comparing those referred by pro-forma and those referred on an informal ad-hoc basis.

Table 1: Table showing the percentage of pro-forma and non pro-forma referrals that definitely indicated whether or not surgery, chemotherapy, and/or radiotherapy were to form part of an oncologic treatment plan.

Conclusion
Given the high prevalence of pre-existing oral disease amongst head and neck cancer patients, prompt dental assessment and treatment intervention is vital. Efforts aimed at improving the care pathway are ongoing within the Restorative Department through the implementation of a mandatory referral pro-forma and a dedicated assessment clinic.