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Diagnosis and Management of Head and Neck Cancers: A Clinician's Dilemma

Cancers of the head and neck can present in a complex variety of ways and pose a diagnostic dilemma for head and neck surgeons. This is all too widely evident as we still commonly see patients with quite advanced cancer presentations having relatively minor or non-specific symptoms (Figures 1 and 2).

The increasing incidence of head and neck cancer year upon year is also concerning and public health measures to ensure early diagnosis and referral are ever more important. We currently rely upon opportunistic screening from dentists and GPs in primary care, as widespread screening is not feasible or practical.

The majority of cancers are Squamous Cell Carcinoma (SCC) but the head and neck region is not spared from other cancer types.

Whilst Head and Neck Cancers present predominantly in smokers and drinkers we are also seeing an unprecedented rise in cancers of the oropharynx which are thought to be related to Human Papilloma Virus (HPV) infection [1]. This worrying trend has skewed the incidence on a worldwide epidemiological scale and considerable research is being undertaken to understand this particular cancer presentation. Tobacco control measures must be exploited in the widest sense as it uses in ethnic communities e.g. chewing, shisha are equally high-risk behavior.

This review will examine the various presentations of head and neck cancer and will provide an overview of treatment regimes.

Oral Cancer

Oral cancer is more common than cervical cancer and is the 5th most common cancer affecting the UK population. Whilst common sites include the

tongue, floor of mouth, buccal mucosa and jaw; that affecting the lip (for completeness) is usually attributed to sun exposure.

Patients present with ulcers, sore patches or white patches and routinely our outpatient clinics receive considerable '2 Week Wait' referrals from dentists and GPs for assessment. Whilst increasingly this mode of direct referral is utilised the 'yield' is typically 6-13% in numerous audits undertaken.

Unfortunately, T4 advanced stage primary oral cancers are commonly seen and these require aggressive management surgically in addition to radical clinical oncology treatment to effect cure. Less fortunately some have to be treated with palliative intent.

The management of oral cancer has to address a 3-Dimensional approach to the tumour with adequate surgical resection margins where possible. The neck usually has to be treated with a neck dissection for local disease control and access to major vessels for simultaneous reconstruction of the tissues usually with free tissue transfer. A neck dissection is a formal and systematic surgical procedure that aims to remove lymph nodes and preserve functioning nerves and blood vessels in the neck.

The effects upon the patient's function with respect to speech, swallow and appearance have to be taken into account, as does their quality of life when approaching disease management.

With a Multi-Disciplinary Team management these factors along with patient comorbidities and performance status are discussed at length before proceeding along a radical treatment pathway.

Figure 1. Advanced Tongue Cancer- its management will affect speech and swallowing.



Figure 2. Early Stage 1 Tongue SCC Red –White Patch with fixation.



Maxillary Sinus and Jaw

The maxilla incorporates the maxillary and paranasal sinuses. In these vacuous spaces the growth of a carcinoma can continue with minimal symptoms. Common sinus related symptoms of congestion, postnasal discharge and facial pain can make diagnosis difficult and a high index of suspicion is necessary here. Occupational histories of working in dust and chemical filled environments and of course smoking are useful pointers.

Primary maxillary sino-nasal tumours can often be managed with endoscopic techniques whilst involvement of the facial bones will require wider resection.

When maxillary tumours grow, they can do so in all directions. Again, late presentation is common and often the involvement of the orbital structures; infra-orbital nerve, retro-maxillary musculature and jawbone are seen in one presentation. To provide treatment with curative intent here is demanding, disfiguring and can hold a reduced prognosis for stage of disease.

Where the tumour is localised and resectable with a maxillectomy, the region can be effectively rehabilitated with either free tissue transfer to reconstruct the jaw, palate and face or with a maxillofacial prosthesis. It is important to address the neck for such cancers, as there is increasing evidence of improved local disease control.

Oropharynx

The oropharynx is that region composed of the base of tongue (posterior third), the tonsils, soft palate and posterior pharyngeal wall. This region is abundant with lymphoid tissue and the squamous epithelium lines all the tissues here. Again, it is the persistence of oropharyngeal symptoms, odynophagia, deep-seated earache and speech problems that should alert the clinician.

Late presentation of cancer here is common as often the primary may be very small or occult and the metastatic neck node large. This presentation by its very nature with few sinister oral or pharyngeal symptoms has led to patients being falsely reassured. The comprehensive assessment of a neck mass can never be over emphasised in the authors opinion. A rapid referral to a neck lump clinic will ensure evaluation with nasendoscopy, blood tests and a fine needle cytology or biopsy (aided by ultrasound guidance). Further evaluation may require imaging, and examination under anaesthesia and biopsies of the suspected sites including the nasopharynx.

The Unknown Primary Tumour

Sometimes we are reassured with a benign result of a branchial cyst of the neck. However, in any patient over 40 years of age this is a diagnosis that the clinician should still view with discord. Increasingly in my MDT discussions we have seen this benign looking clinical picture but further evaluation with a PET-CT scan has shown the malignant lymph node and a small oropharyngeal lesion not clinically visible.

These small oropharyngeal tumours with extensive lymph node involvement in younger adults are becoming a typical presentation of HPV related disease.

Fortunately, there is increasing evidence that despite such advanced stage of disease at presentation, current treatment modalities using chemotherapy and intensity modulated radiotherapy (IMRT) are showing promising results.

Increasingly, surgical advances utilising robotic aided techniques [2] have reported favorable outcomes also highlighting the effects of direct oncologic surgery and preservation of function of the tongue and pharynx.

Salivary gland malignancy

Whilst less common, salivary glands can be the focus for a primary malignancy [3] or due to their inherent association with lymphoid tissue be due to metastatic disease.

Primary salivary malignancy usually present with a lump in the affected gland and in advanced cases with symptoms of pain, salivary obstruction, fixity of the surrounding tissues and facial nerve weakness for parotid gland cancer.

Loss of sensation within the tongue can be associated with submandibular and sublingual gland tumours.

The spectrum of pathology can be divided into pathologically high or low-grade disease. Some benign pleomorphic adenomas can undergo malignant transformation and for this reason standard surgical excision is imperative for histological analysis.

The associated neck lymph nodes are increasingly being addressed for staging purposes and for the benefit of local control of disease.

Salivary gland tumours remain relatively radio-resistant and as such primary management continues to remain surgical intervention.

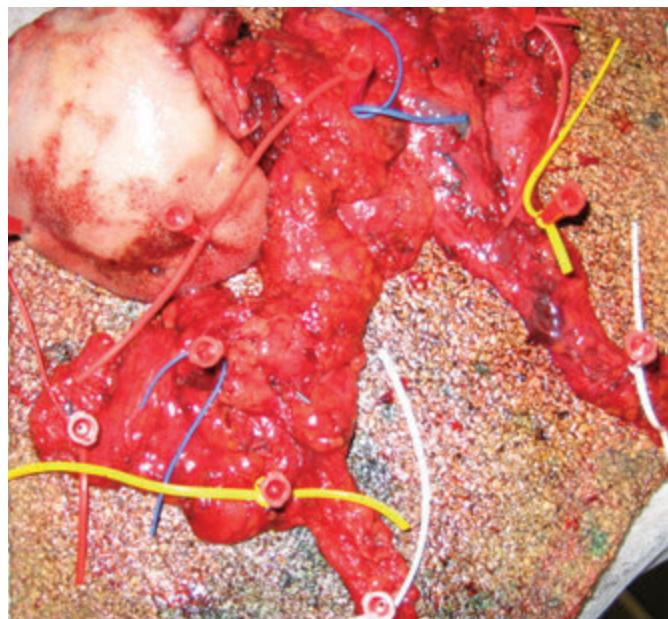


Figure 3. Total Glossectomy and Bilateral Neck Dissection Radical surgery for late stage disease.

Neck Disease

The neck has an abundance of lymph nodes and these are crucial for lymphatic drainage. Their arrangement in the neck usually allows predictable drainage to be followed from the primary tumour site. The involvement of a neck node with cancer immediately upstages the disease and has a dramatic effect upon cancer survival rates.

Surgical techniques have advanced to address the primary head and neck cancer whilst preserving function and allowing disease control. In addition any neck disease must be managed comprehensively and if necessary, radically, to effect disease control and cure (Figure 3).

Current function preserving neck dissection techniques aim to remove lymph glands whilst sparing key nerves, blood vessels and soft tissues to maximise function. Selective neck surgery is gaining vogue with the emergence of Sentinel Node Biopsy [4] (SNB) of the main identified lymph glands in patients with localised small T1 –T2 disease. The results from SNB work do show promise.



Figure 4. Micro-anastomoses of artery and vein for free flap reconstruction.



Figure 5. Tongue reconstructed with free radial forearm flap

Other Head and Neck Cancers

In such a review the remit is quite broad. One cannot by any means be comprehensive.

Lymphoma does need mention, as it is a common and worrying disease affecting all age groups. Particularly presenting with florid lymph node persistence in young patients the diagnostic pathways invariable will involve a Head and Neck Surgeon. The key linkage within a Neck Lump Service with Haematologists and Pathologists is essential in-order to provide a rapid diagnosis.

Extra-nodal Lymphoma can present within any head and neck structure and is commonly seen within the maxilla.

The management of diagnosed Lymphoma is non surgical and usually with a better prognosis.

Chemo-Radiation

Advances in chemotherapy and targeted radiotherapy (IMRT) in combination have allowed a sea of change in the management of head and neck cancer.

With targeted planning and 3-D radiotherapy fields the tumour volume and margin of treatment can be mapped accurately and key anatomical structures e.g. spinal cord can be omitted. The addition of adjuvant chemotherapy has seen a survival benefit for head and neck cancer patients.

Reconstruction

The advances in Head and Neck reconstruction have aimed to not only reconstruct the hard and soft tissue defects but also to improve function and appearance. These advances are in imaging technology and planning with computer aided modeling (Figure 6).

With a functional approach to cancer surgery we are able to replace facial bone



Figure 6. Use of Computer aided model for reconstruction of the jaw.

structures, harmonise facial appearances and rehabilitate the region with titanium implant supported maxillofacial prosthetics.

Conclusion

This review highlights the complexity and specialist nature of head and neck cancer. The spectrum of disease is large and varied and the nature of presentation and symptomatology equally complex. Specialist training has dedicated the fields of Oral and Maxillo-Facial Surgery and ENT Surgery to overlap considerably. The development of close working relationships within surgical disciplines has allowed large numbers of patients to be

managed together by dedicated specialists. Naturally we should expect that from such an evolution in cancer management, outcomes and survival would continue to improve.

For the future, the viral aetiology of head and neck cancer does need to gain support for potential immunisation. Whilst the evidence base strongly favours such measures for cervical cancer the positive knock-on effect for head and neck cancer prevention should be expected.

Currently cervical cancer immunisation programmes in the UK target females in their teenage years. Pressure to include males surely will surely increase for added benefit against HPV.

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READING LIST AND WEBSITES

- HPV and head and neck cancer
www.peerviewpress.com/p3/SCCHN
- www.cancerresearchuk.org/about-cancer/type/head-and-neck-cancer/
- www.baoms.org.uk
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