

The reconstructive oral cancer patient: what the general dental practitioner needs to know

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Key points

Provides an update for GDPs of what to do when a patient is diagnosed with oral cancer.

Acts as a precursor to new guidelines that will be coming out regarding how the GDP can manage the oral cancer patient.

Provides an update of what the oral cancer patient goes through with regards to surgical reconstruction.

Abstract

The rate of oral cancer is on the rise; lesions are often being picked up late meaning it is necessary for patients to undergo multidisciplinary head and neck reconstruction. Working in a specialist head and neck oncology unit this year has opened my eyes as to how this patient subgroup is managed, with regards to both a surgical and restorative basis. This article has been written to help inform GDPs about the upcoming NHS guidelines, 'The NHS Oral Cancer Toolkit', in the management of oral cancer patients. Furthermore, I hope that the reader gains an appreciation for what the oral cancer patient endures on their toilsome journey. This article is designed as a refresher on the restorative management of the oral cancer patient. After having read this article you will have an improved awareness of the '8-step' oral cancer screen and an insight as to what happens when the patient is sent on the urgent cancer pathway. Most importantly, this paper will refresh your learning on what the GDP needs to do in the preoperative and postoperative phases with regards to the oral health and wellbeing of the reconstructive oral cancer patient.

Introduction

A new NHS Oral Cancer Toolkit is in the process of being developed for the GDP – this will provide guidance on what can be done for the oral cancer patient throughout their journey.

The oral cancer patient can often lose many if not all teeth, among other oral and anatomical structures. Most maxillofacial departments involve a restorative consultant in the multi-disciplinary management of their patients; however, there is limited guidance as to what the general dental practitioner can do to aid this patient through their diagnostic, surgical and rehabilitative therapy. This paper will describe what the GDP needs to do with regards to the oral health and wellbeing of the reconstructive oral cancer patient.

The initial screen

Oral cancer is associated with a malignant change in the mucosal, soft and hard tissues of the mouth, lips, cheek and oropharynx. There has been a 30% increase in the rates of oral cancer in the last ten years alone.¹ The rate of this specific cancer is on the rise and it is often the general dental practitioner who spots suspicious lesions first. As with any cancer the best chance of cure lies with wide surgical excision and the simplest way this can be facilitated is early detection and referral – 'most early-stage oral cancers can be locally excised or treated with radiotherapy, with no or minimal functional and physical morbidity.'²

The GDP should carry out risk factor analysis for each patient. A thorough medical history and drug history should be undertaken, alongside smoking history and the analysis of alcohol and betel nut/pan consumption. Patients should be counselled appropriately and made aware of the services that the NHS provides to try and help alter smoking/drinking habits. At dental school we are often taught how to perform a full intra and extra

oral exam – given the stresses of daily practice it is known that the extra oral exam can be overlooked by some. A refresher on the intra/extra oral exam can be found in Figure 1.

It is interesting to note that the teeth make up such a small component of a clinical examination. Despite being trained as dentists it is easy to forget that we are highly specialised in treating, recognising and potentially diagnosing a wide range of diseases in the head and neck region. If the GDP follows the pathway shown in Figure 1, then a systematic approach can be taken and one would hope that suspicious lesions can be picked up at the earliest opportunity, bringing about the possibility of curative treatment. In the paper by Mike Lewis (published in this Journal in 2018 in an Oral Cancer themed issue - 2018, volume 225 issue 9), multiple different types of oral cancer are clearly outlined, and ways in which they can be detected and what to look out for in your routine examination are discussed.³ Additionally, Cancer Research UK and the BDA have designed an online toolkit which is designed to improve the knowledge, prevention and detection skills of oral and oropharyngeal cancers.⁴

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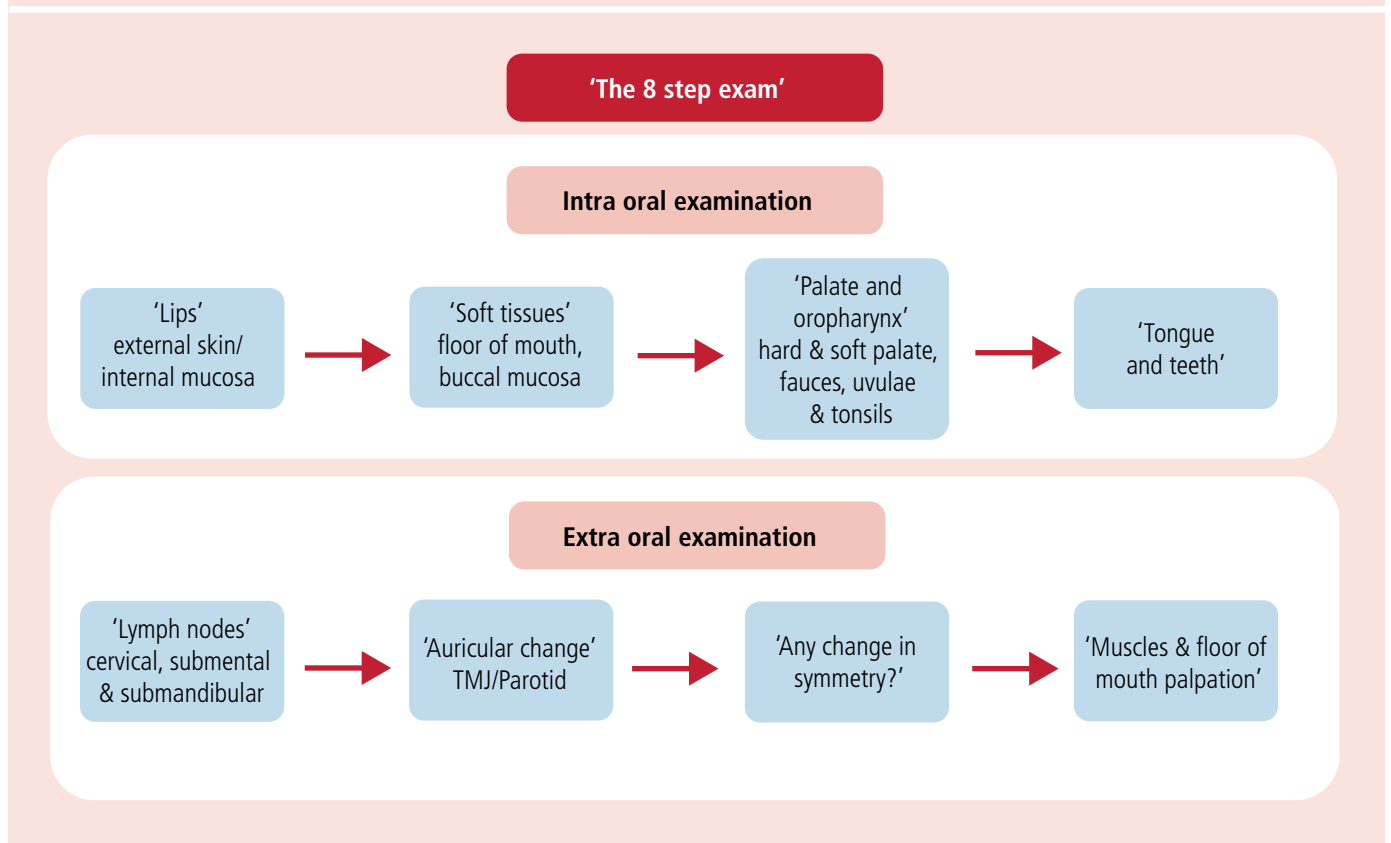
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Fig. 1 The 8-step exam



Suspect lesions should be sent on the urgent cancer referral ‘two week wait’ pathway, this pathway is easily available to GDPs via the online NHS dental referral system. The following lesions would raise concern:

- Mixed white and red patches
- Non-healing intra oral ulcers
- Non-healing intra oral ulcers (lip)
- Moles showing signs of change on the face/skin of the head and neck
- Irregular and non-explainable raises in soft tissue/hard tissue
- Unexplained paraesthesia or pain (accompanied with above)
- Unexplained lymphadenopathy (accompanied with above).

When the lesion is referred it should be described appropriately:

- Sessile – immobile
- Pedunculated – supported by a stalk
- Reticulate – resembles a network of structures
- Homogenous – uniform consistency/structure
- Heterogeneous – of a varied consistency/structure
- Erosive – breakdown/loss of the epithelium

- Atrophic – wasting/decrease in size
- Removable – does the lesion wipe away?

Early detection is the key. If picked up early, excision can usually be undertaken with the use of local anaesthetic only. If detected late and there are delays in referral, surgical reconstruction becomes the mainstay of treatment.

The surgical reconstruction phase

Surgical reconstruction is life changing for patients. It usually involves anywhere from 2–4 weeks in hospital, and operations that will occupy the operating theatre for the best part of a day. The surgery usually involves the removal of the tumour and the surrounding neurovascular supply. Sometimes segmental and entire parts of the maxilla and mandible are removed, further to this the lymphatic systems of the neck are removed on the affected side and occasionally both sides of the neck. This is all done to prevent any dissemination of cancerous cells from the tumour and prevent recurrence or spread of the disease. The fine details of microvascular reconstruction are beyond the scope of this paper, but if you wish to read about it the paper by Yadav *et al.* from

2007 is recommended.⁵

Large surgical wounds are created; more often than not they are too large to be closed by primary closure only. The reconstruction occurs using either a local tissue graft or no tissue is used and the site left to granulate. Alternatively, a full-fledged ‘microvascular flap’ is used – an ‘mv flap’ is tissue that is harvested alongside its venous and arterial supply often from the radial forearm, anterolateral thigh or iliac crest area, it is then grafted into the place of this surgically created wound.

Extraorally patients undergo changes of varying degree, some patients will have minimal disfigurement, with intraoral soft tissue loss only, while others will have large surgical scars, disfiguring swelling and loss of expression – loss of the eyes and nose can also take place. Intraorally, patients can lose the ability to swallow and are often rendered edentulous, making speech an issue but more relevantly the patient often has changes in anatomy which renders them unable to wear a dental prosthesis.

Prior to any surgical reconstruction most patients will undergo screening by a restorative specialist, who will plan to extract any teeth of poor prognosis. The reason this is done is to prevent acute dental problems

during the pre-, intra-and, most importantly, postoperative phase. Some patients will be sent for head and neck radiotherapy as the prime modality of treatment, while others will be sent post operatively. In turn if an extraction is needed, this brings about an inevitable risk of radiation-related osteonecrosis of the jaw. This is a complication which can have devastating consequences and involves further reconstructive surgery.⁶

As a GDP you must ensure that the following demands are strictly met at the preoperative phase. One must work in conjunction with the restorative specialist, they will plan the surgery with 3D-guided software and dictate what the patient will be rehabilitated with in conjunction with the OMFS surgeons – they will often provide GDPs with a treatment plan describing what to do with regards to management of caries and periodontal disease.




The checklist shown in Table 1 is designed to make this process easier – this pathway assumes the patient has a positive oncological diagnosis and is going to go forward with reconstructive surgery.

The GDP should continue to carry out routine care, for example, if a patient is rehabilitated on the upper arch with full mouth implants, the GDP is not responsible for any pathology/failures related to these implants, but they are responsible for picking up on these diseases and referring back to the hospital for management. Furthermore, the unaffected arch, in this case the lower arch, must be continued to be managed by the GDP as they would for a non-surgical patient, ie caries control, periodontal control and hygiene control.

When this niche subgroup of surgical patients finish their surgical reconstruction and treatment they will return for routine management and care. As a GDP you must be aware of and be able to manage the following accordingly:

- The reconstructive patients who undergo flap/microvascular surgery often return with vast changes in oral anatomy – these complex changes are managed by the OMFS team and patients are rehabilitated with dental implants.⁷ This brings about the importance of the GDP in maintaining immaculate oral health for these patients, cleaning around implant surfaces and ensuring that these restorations have as long of a life span as possible. The general aim is to prevent further surgical intervention/morbidity

Table 1 Checklist for GDPs with oral cancer patients

Phase		Treatment
Pre-operative		Ensure the patient is periodontally stable - no residual calculus deposits should remain, provide RSD if necessary and promote OHI & TBI
		Stabilise caries - restore relevant teeth
		Extract any teeth of unrestorable/poor prognosis - fractured, grossly carious, mobile and pathologically involved teeth
		Start patients on a high F-regimen ie prescribe duraphat 5000
Intra-operative		It is unlikely that you will have much contact with patients in this phase, they will be managed by the relevant OMFS unit in hospital. However, you can make sure that the following is provided;
		Sufficient fluoride therapy
		And understanding/appreciation of what surgery the patient is going thorough
Post-operative		This phase is crucial for the GDP. Once the patient leaves the hospital they will be followed up periodically. Between the hospital appointments the GDP must continue with;
		The oral cancer screen - to check for any signs of recurrence
		Continue providing fluoride therapy
		Continue to monitor for any dental pathology or mobility of teeth post treatment
		Monitor for RONJ - a large proportion of patients will undergo adjuvant chemo -radiotherapy. The GDP must be able to spot this debilitating disease early. Furthermore, dental extractions are to be avoided in these patients to prevent the formation of ONJ. This highlights the importance of treatment in the preoperative phase

- Salivary glands can be in the field of surgical resection, this means that patients will return with a reduced salivary flow – in turn they present with xerostomia (dry mouth), dysphagia (difficulty swallowing), and an increased caries rate. The GDP is capable of prescribing salivary substitutes in the form of sprays, lozenges and pastilles; with these salivary aids one would hope that swallowing becomes slightly easier. It is well documented that saliva has a vital buffering effect and helps prevent excess acidic attack of teeth.⁸ Maintaining a good salivary flow is essential to prevent further caries and risk extraction in these patients, and it also maintains a moist environment to facilitate swallowing for patients
- Radiotherapy can have a further effect on the soft tissue. Radiotherapy-induced mucositis can occur. Oral mucositis presents as an acute inflammation of the tongue, buccal mucosa and oropharynx,⁹ it is a normal but unwanted complication of radiotherapy. The GDP must be able to recognise this complication, they are equipped in prescribing NSAID-type

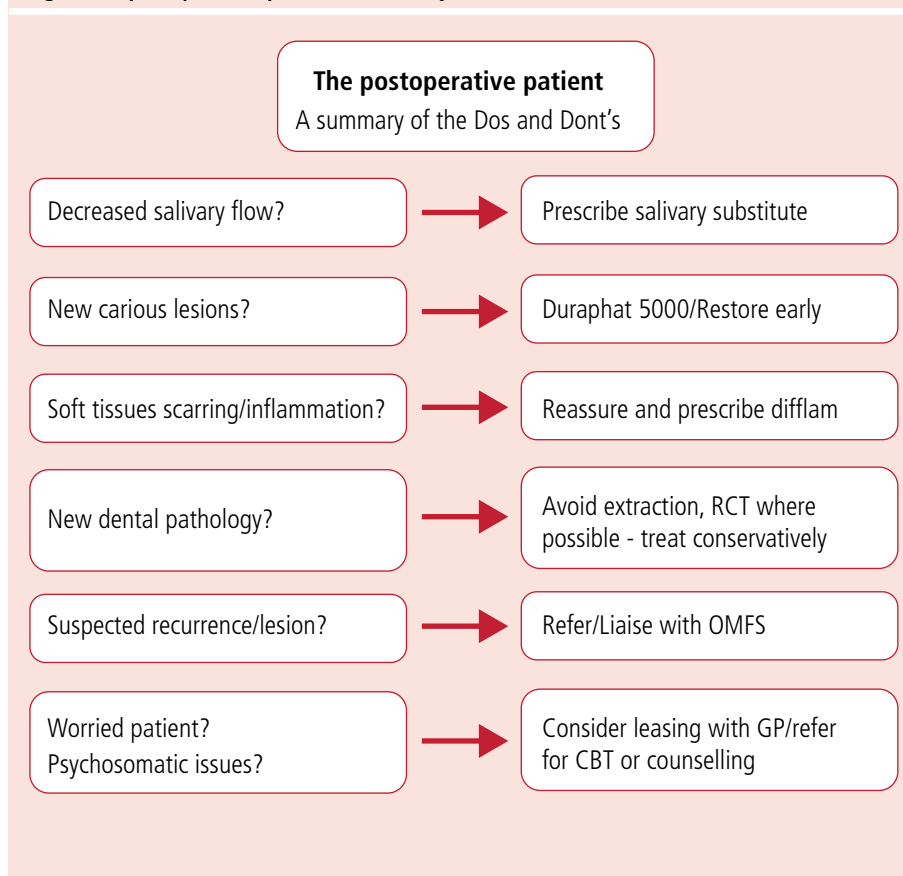
medicaments – such as difflam solution (benzylamine hydrochloride) to provide topical relief for the inflammation. The inflammation is often temporary and the literature reports that it rarely stays for more than 3 months.¹⁰ This is a simple action from the GDP but one which will provide vast improvements in a patient's quality of life in the postoperative phase.

A summary of the 'Dos and Don'ts' in treating the postoperative patient is shown in Figure 2.

The reconstructive oral cancer patient goes through a long and arduous journey in order to have the best possible chance of fighting the disease. The key is early diagnosis to prevent reconstruction and to allow treatment by localised excision only.

This article stresses the importance of the GDP and how they play a vital role throughout the surgical journey of the oral cancer patient. Above all, they are essential in detecting the disease early. The preoperative or 'preparation' phase ensures that the patient is ready for surgery, they enter the operation

Fig. 2 The postoperative patient: a summary of the dos and don'ts



with a stable oral environment with no local disease or pathology. Intraoperatively, you will have minimal contact with the patient, but provisions must be in place to ensure the patient can maintain the level of oral health you collectively worked hard to achieve. In the postoperative or 'maintenance phase' the GDP plays the most important part in managing the oral cancer patient, carrying out regular cancer screens, ensuring that the aforementioned postoperative complications are managed accordingly and patients receive the multidimensional care that they deserve.

Summary

In summary, this article has outlined the following:

1. The importance of intra/extra oral screening and early diagnosis of oral cancer
2. A general overview of the surgical process for the reconstructive cancer patient and how they should be managed in the pre-, intra- and postoperative phases
3. The importance of the GDP working in conjunction with the OMFS hospital unit and the local restorative consultant if present

4. The importance of being able to diagnose simple implant and soft tissue disorders.

While the aforementioned material of this paper doesn't necessarily constitute any new research, it should bring the readers' attention to the plethora of information available in both the public and academic domain with regards to this topic. Clinicians should also refer to the 'GM Oral Cancer Toolkit' for further information, guidance and support around the management of the oral cancer patient.¹¹

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