

Oral and neck examination for early detection of oral cancer – a practical guide

Dr Denise MacCarthy
DS NUI FDS RCS(Edin)
MDentSc (U Dublin)

Senior Lecturer/Consultant in Restorative
Dentistry and Periodontology
Dublin Dental University Hospital
Trinity College Dublin

Professor Stephen R Flint

MAjo(U Dubl) PhD(Brist) MB BS(Hons)
BDS(Lond) FDSRCS(Eng)
FFDRCSI FICD FTCD
Professor and Consultant in Oral Medicine
Head of Division of Oral
and Maxillofacial Surgery,
Oral Medicine and Oral Pathology
Dublin Dental University Hospital
Trinity College Dublin

Dr Claire Healy

BDentSc MB BCh BAO FDSRCS(OM)
FFDRCSI(OM) PhD
Senior Lecturer/Consultant in
Oral Medicine
Dublin Dental University Hospital
Trinity College Dublin

Prof Leo FA Stassen

FRCS(Ed) FDSRCS
MA FTCD FFSEM(UK) FFDRCSI
Professor and Consultant Oral and
Maxillofacial Surgeon
Division of Oral and Maxillofacial
Surgery, Oral Medicine and
Oral Pathology
Dublin Dental University Hospital
Trinity College Dublin, and
The National Maxillofacial Unit
St James's Hospital

Address for correspondence:

Dr Denise MacCarthy BDS NUI FDS
RCS(Edin) MDentSc(U Dublin)
Senior Lecturer/Consultant in Restorative
Dentistry and Periodontology
Dublin Dental University Hospital
Trinity College Dublin
T: 01-612 7239
E: dmacCarthy@dental.tcd.ie

Précis

Unfortunately, over 60% of patients presenting with oral (mouth) cancer have either regional or distant spread. We need to detect oral cancer early and thereby improve the prognosis and save lives. Dentists are effective clinicians in the early detection of mouth cancer. An examination system for the oral cavity and neck is described.

Abstract

Cancer of the head and neck region presents a challenge since, unlike other areas of the body, the boundaries are not always easy to delineate. The functional morbidity associated with head and neck cancer and its treatment are considerable. Head and neck cancer is described as cancer of the lip, mouth, tongue, tonsil, pharynx (unspecified), salivary gland, hypopharynx, larynx and other. Oral cancer refers to cancers of the lip, tongue, gingivae, floor of the mouth, palate (hard and soft), maxilla, vestibule and retromolar area up to the anterior pillar of the fauces (tonsil).

When patients present with oral cancer, over 60% of them have regional (lymph node) and sometimes distant (metastatic) spread. The overall five-year survival rates for oral cancer average at between 50 and 80%, depending on the stage of the disease, varying from 86% for stage I to 12-16% for stage IV. The incidence of 'field cancerisation'/unstable oral epithelium is high (17%), and even after successful treatment our patients need to be monitored for dental care and further disease.

Unlike other areas in the body, the oral epithelium is readily accessible for examination and even self-examination. Dentists and dental hygienists are effective clinicians in the examination of the oral cavity for mouth cancer. An oral and neck examination must be part of every dental examination. An examination protocol is suggested here, which is similar to, but more detailed than, the standardised oral examination method recommended by the World Health Organisation, and consistent with those protocols followed by the Centres for Disease Control and Prevention and the National Institutes of Health.

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Introduction

Head and neck cancer is described as cancer of the lip, mouth, tongue, tonsil, pharynx (unspecified), salivary gland, hypopharynx, larynx and other. Oral cancer refers to cancers of the lip, tongue, gingiva, floor of the mouth, palate (hard and soft), maxilla, vestibule and retromolar area up to the anterior pillar of the fauces.¹ Unlike other areas in the body, the oral cavity/neck is readily accessible for inspection and self-examination. Over 60% of patients present with oral cancer with either

regional or distant spread.² The five-year survival rates for oral cancer average at between 50 and 80%, depending on the stage of the disease, varying from 86% for stage I to 12-16% for stage IV.^{3,4}

A major factor in poor outcome for oral cancer is its late presentation due, in part, to lack of awareness about oral cancer in the community among doctors, dentists, pharmacists and, more importantly, patients.⁵ Despite a considerable amount of



FIGURE 1: Neck exposed for examination.



FIGURE 2: Submental triangle.



FIGURE 3: Submandibular triangle.



FIGURE 4: Pre-auricular.



FIGURE 5: Parotid.



FIGURE 6: Posterior auricular.



FIGURE 7: Occipital triangle.



FIGURE 8: Jugulo-digastric node.



FIGURE 9: Jugulo-omohyoid node.

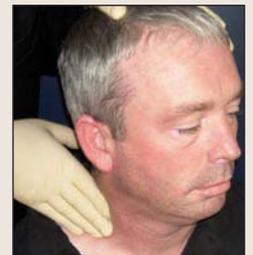


FIGURE 10: Posterior triangle.

research, there is no clear evidence for the management of 'potentially malignant' lesions. The issue is whether all lesions deemed to be 'high risk' should be surgically removed or whether the clinician should follow a 'watch and wait' policy. However, national screening programmes cannot be advocated for head and neck cancer at the present time.⁶ Targeted screening of risk groups has been found to be effective.⁷ However, opportunistic screening of the oral soft tissues by the dentist at every dental check-up is recommended.⁸ Dentists are very effective clinicians in examination of the oral cavity, as are dental hygienists.⁸ Examination for mouth cancer must be part of every dental, oral and neck examination.

Oral and neck examination

This exam requires adequate lighting, two dental mouth mirrors, and gloves. It should take no longer than five minutes.⁹ The examination is conducted with the patient seated comfortably. Removable intra-oral prostheses are removed before starting. The extra-oral and peri-oral tissues are examined first, followed by the intra-oral tissues.

Step 1: Extra-oral assessment

The extra-oral assessment includes inspection of the face, ears, head and neck, noting any asymmetry or changes on the skin such as crusts, fissuring, growths, lumps and/or colour change. The neck lymph node drainage areas are examined and the neck palpated to detect enlarged nodes. If enlargement is detected, the examiner should determine the size, mobility and consistency of the nodes.

The patient should be seated, relaxed and with the neck exposed from jawbone to clavicle (Figure 1). The examiner should lean the head towards the area being examined to allow the muscles to relax and allow easier palpation. The left and right sides of the neck should not be examined at the same time (this can cause sick sinus syndrome, leading to collapse). A recommended order of lymph node examination is to start in the submental triangle with the head bent forward, then the submandibular triangle (Figures 2 and 3), the facial node, the parotid tail, parotid gland, pre-auricular area, post-auricular area and occipital triangle (Figures 4, 5, 6 and 7). The same process occurs on both sides. Then palpate the upper cervical (jugulo-digastric), mid-cervical, and lower cervical nodes (jugulo-omohyoid), and finally the posterior triangle



FIGURE 11: Bimanually palpate sublingual and submandibular glands.



FIGURE 12: Lips.



FIGURE 13: Labial mucosa, maxilla.



FIGURE 14: Labial mucosa, mandible.



FIGURE 15: Buccal mucosa.



FIGURE 16: Gingiva.

(Figures 8, 9 and 10). The same process is followed for both sides. Do not forget the parotid gland, and bimanual palpation of the submandibular and sublingual glands (Figure 11).

Step 2: Lips

Observe the lips with the patient's mouth both closed and open. Note the colour, texture and any surface abnormalities of the vermilion borders. Check for lip sensation (cranial nerve V) and lip movement (cranial nerve VII) and record the result (Figure 12).

Step 3: Labial and buccal mucosa

With the patient's mouth partially open, visually examine the labial and buccal mucosa and the sulcus of the maxillary vestibule and frenum, as well as the mandibular vestibule. Note any colour change, abnormal texture, and any swelling or other abnormalities of the vestibular mucosa and gingiva (Figures 13, 14 and 15).

Step 4: Gingivae

Examine the buccal and labial aspects of the gingival and alveolar

ridges by starting with the right maxillary posterior gingival and alveolar ridge and then moving around the arch to the left posterior area. Drop to the left mandibular posterior gingivae, retromolar area and alveolar ridge, and move around the arch to the right posterior area. Then examine the palatal and lingual aspects as on the facial side, from right to left on the palatal (maxillary) aspect and left to right on the lingual (mandibular) aspect (Figure 16).

Step 5: Tongue – dorsal and ventral surfaces

With the patient's tongue at rest and mouth open, inspect the dorsum of the tongue for any swelling, ulceration or variation in size, colour or texture. Ask the patient to protrude his or her tongue and examine it for any abnormality of mobility (cranial nerve XII), fixation, pain on movement or its position (Figure 17).

Step 6: Floor of the mouth and lingual pouch

Ask the patient to roll their tongue back into their mouth, and inspect and palpate the floor of the mouth (Figure 18). Look for changes in colour and texture, and for swellings or other surface



FIGURE 17: Tongue, dorsum.



FIGURE 18: Tongue, ventral.



FIGURE 19: Tongue, lingual pouch.



FIGURE 20: Tongue, lateral border.



FIGURE 21: Hard palate.



FIGURE 22: Soft palate and anterior pillar of fauces (tonsil).

abnormalities. Irregularities are more easily detected if gauze is used to wipe the floor of the mouth dry; the gauze can also be used to keep the tongue out of the way.

Ask the patient to push their tongue out to the left and examine the lateral tongue; use the mirror to pull the tongue to the left, and examine and palpate the lingual pouch (Figure 19). This area is between the tongue and mandible in the lower molar areas. It is a high-risk site and tissue changes can be easily missed. Follow the same process with the tongue pushed to the right.

Step 7: Lateral border of the tongue

Examining the posterior third of the tongue (oro-pharynx) can be difficult. Grasp the tip of the tongue with a piece of gauze to assist in full protrusion of the tongue. Use a mouth mirror to visually assess the more posterior aspects of the tongue's lateral borders and, with another mirror, retract the cheek. Also, gently run your index finger along the

lateral borders of the tongue to feel for any hardness (induration). A normal tongue should feel a little softer than touching your own cheek, induration feels like touching the tip of your nose, and infiltrating cancer feels like when you touch your forehead – hard (Figure 20).

Step 8: Palate (hard and soft)

With the patient's mouth wide open and head tilted back, gently depress the base of the tongue with a mouth mirror. Inspect the hard and soft palates and anterior lateral pharynx for white/red patch(es) and palpate for hardness. Remember that the pterygoid hamulus is normal (Figures 21 and 22).

Step 9: Floor of the mouth

If not done earlier, bi-manually palpate the floor of mouth (sublingual gland) and submandibular area for any signs of swelling or hardness (induration) (Figure 11).

Table 1: Points to remember when completing a check-up for oral cancer.¹⁰

- Most oral cancers are located on the lateral borders of the tongue, floor of the mouth, retromolar area and lips – special attention should be focused in these areas.
- Tell your patient what you are doing with each procedure and why.
- Always note any changes in colour and texture of all soft tissues, or any swelling.
- If you detect an abnormality, determine the history of the lesion, correct any possible aetiological factors and review after two weeks.
- If the abnormality has been of more than three weeks' duration, take appropriate action to obtain a biopsy. If you are suspicious of a malignant lesion, refer. Always take a photograph before a biopsy.
- Follow up to ensure a definitive diagnosis of an abnormality.
- Teach your patients about the symptoms and signs of oral cancer.
- If a patient uses tobacco products, provide appropriate counselling or refer for counselling.
- Remove all removable prostheses before starting the examination.

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