The **extra** oral and **intra** oral examination

Dental core trainee **Noor Al-Helou** from Liverpool Dental Hospital explains the importance of thorough examinations in dental assessments.

A thorough intra-oral and extra-oral examination should be a routine part of any dental assessment: checking and recording the presence or absence of any abnormalities. Faculty of General Dental Practice (FGDP) protocols are available to guide dentists and dental care professionals (DCPs) on how an extra and intra oral exam should be conducted, with no differentiation made between an examination of an adult or a child.¹ The importance of regular and thorough dental examinations has been emphasised within literature and many case reports detail positive outcomes for patients as a result of an effective examination.²

There has been a particular emphasis on a thorough dental examination due to dental practitioners being one of the few health professionals who have frequent contact with patients through routine examinations. They have the ability to detect possible oral cancers, skin cancers, as well as manifestations of other

systemic diseases such as Crohn's disease.³

Although the incidence of oral cancers is decreasing gradually, there has been an increase in the number of patients diagnosed with oral cancer under the age of 40.³ Early detection and diagnosis of oral cancers have a direct impact on the patient's long-term prognosis.³ It can result in simpler surgical procedures and a reduced need for radiotherapy and chemotherapy. This often leads to a reduced risk of disfigurement and effect on eating or swallowing which tends to occur in major head and neck surgeries and treatments, ultimately granting the patient a better quality of life.^{3,4}

Extra oral dental examinations can often be overlooked, even though they are a fundamental aspect of oral cancer screening and possible manifestations of other systemic diseases. An extra oral examination could result in the detection of enlarged lymph nodes, metastasis and skin cancers, amongst various other diseases.³

Performing a thorough extra and intra

oral examination could lead to patients questioning the practitioner on the purpose of the examination. This gives the practitioner an opportunity to educate the patient on sinister signs and symptoms to look out for. This could ultimately aid in the early detection of lesions, which is so crucial, especially with oral cancers.

The extra oral examination

The extra oral examination should be conducted routinely, and most practitioners conduct it with each new assessment. This helps to reduce the likelihood of missing any areas of concern.¹ It is generally recommended to complete the extra oral examination systematically and in the same order each time. There is no set order and so the extra oral examination can be conducted in the order that is preferable to the clinician. The extra oral examination is made up of the face, head and neck and should assess the following.

1. Face

a. The face should be assessed, and any abnormal findings noted in the clinical records. These include swelling, discolouration and any asymmetry.¹ Asymmetry can occur due to swellings originating from both dental and non-dental causes such as infection, neoplastic growths and hypertrophy.³

b. The clinical examination may also be altered as a result of a patient's concern or history. For example, the patient may complain of altered sensation following trauma or a gross swelling.¹ These findings should also be included in the extra oral examination clinical records.

2. Head

a. Similar to the examination of the face, the head should also be assessed for any swellings, discolouration or asymmetry.¹ Where a patient's scalp is visible, this should be assessed visually as this can be a common site for basal cell carcinomas and the patient may not be aware of them.

b. The assessment of the patient's head should include the palpation of the major lymph nodes. Findings such as enlargement, fixation and tenderness of lymph nodes should be noted.³ This is particularly important as non-tender and fixed lymph nodes can be indicative of malignancies whereas tender lymph nodes can sometimes occur in conjunction to infections, both of dental and non-dental origin.³

c. The temporomandibular joint (TMJ) is also assessed. This should be assessed both at rest and when the patient is carrying out mandibular movements.¹ The patient can be asked to complete movements such as opening and closing their jaw, moving it side to side as well as thrusting the mandible forward in order to assess the TMJ.³ Any pain, clicking, limitation of movement or opening, grating or tenderness as well as any deviation or deflections should be noted.¹

3. Neck

a. Similar to the assessment of the patient's head, the neck should also be palpated to assess the major lymph nodes. Again, any enlargement, fixation or tenderness of the lymph nodes should be noted.

b. Any lumps, swelling, tenderness or abnormalities should also be noted.

The extra oral examination is also an important assessment when considering safeguarding. Any signs of non-accidental injury such as lacerations or bruising should be noted particularly in children and vulnerable adults.¹

The intra oral soft examination

The intra oral examination is divided into soft tissue and hard tissue examination. The soft tissue examination will be focused on for the purpose of this article. Similarly to the extra oral examination, the intra oral examination should be completed with every new assessment and should be conducted in a systematic manner in order to minimise the chances of an area not being assessed. With the development of technology, many clinicians also find it useful to photograph any abnormal or unusual findings and include them within the clinical record as it is often more useful than an illustration.¹

The areas assessed include:

1. Lips

a. Lips are normally smooth with a homogenous pink appearance and the vermillion border is even and distinct.³ Symmetry, tissue consistency, texture, colour, as well as any lumps should be noted. Ensure to assess the commissures as this is a common site for pathological conditions such as *Candida albicans*, angular cheilitis as well as nutritional deficiencies.³

as erythroplakia (red patch) and speckled leukoplakia (red and white patch) can be indicative of neoplastic changes and therefore should be noted in the clinical record and referred appropriately.

3. Floor of mouth

a. The patient should be asked to raise their tongue to allow the clinician to visualise the floor of mouth directly. Using the back of a mirror may be useful to help see the most posterior aspects of the floor of mouth. In most patients the tissues should be moist in appearance and can be vascular.³ Normal findings include the sublingual caruncle and folds, and the lingual frenum.

b. Abnormal findings include swelling, ulceration, mucoceles, sialoliths and neoplastic changes similar to those mentioned above amongst other findings.

4. Tongue

a. The examination is particularly important when screening for oral cancer as a common site for oral cancer to occur is the lateral border of the tongue.³

b. To examine the dorsum of the tongue, ask the patient to stick their tongue straight

Findings such as cheek biting, burns and ulcers should be noted and reviewed at appropriate levels intervals, most commonly in two weeks.'

2. Buccal and labial mucosa

a. The buccal and labial mucosa should be moist and red in appearance. On palpation it should be soft with no indurations or palpable lesions or lumps. Stensen's or the parotid duct can also be identified on the buccal mucosa adjacent to the upper molars. Linea alba and Fordyce spots or granules are common findings on the buccal mucosa and should be noted, but do not require treatment.³ [Images can be viewed at <https://healthproadvice.com/conditions/how-to-check-yourself-for-oral-cancer.5>] Linea alba can sometimes occur due to stress and as a result of bruxism. It is a hyper-keratinised area in line with the occlusal plane.⁵

b. Findings such as cheek biting, burns and ulcers may be seen and should be noted and reviewed at appropriate intervals, most commonly in two weeks.³ Changes such

out. Then get the patient to move their tongue to the left and the right to examine the lateral border of the tongue. Using a mirror can sometimes be useful when trying to examine the most posterior aspect of the lateral border of the tongue. The ventral aspect of the tongue can be observed by asking the patient to curl their tongue up to the roof of their mouth.

c. The tongue should be pink in appearance and symmetrical in both shape and function. There should be no palpable indurations or lumps.³ Common findings include fissuring of the tongue⁶ as well as papillae including filiform, fungiform and circumvallate papillae.³

d. Any abnormal findings such as geographic tongue,⁷ ulceration, leukoplakia and erythroplakia should be noted in the clinical record and reviewed and referred appropriately in accordance to local guidance.

5. Palate

a. The palate should be examined visually with the aid of illumination. The palate should be a pale pink colour and homogenous in appearance. Normal structures that may be identified are the incisive papilla, raphe, rugae, the maxillary tuberosities and the vibrating line.³

b. The most common atypical findings on the palate are palatal tori⁸ and ulceration.

6. Fauces

a. The oropharyngeal assessment can be completed by depressing the patient's tongue with a mirror. This allows visualisation of the pharyngeal wall, tonsils and tonsillar crypt.

b. Atypical findings can include asymmetry which could be as a result of infection, tonsillectomy or due to the presence of a lesion.

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Findings that could be concerning and their management

With over 6,500 new oral cancers and over 2,000 laryngeal cancers being diagnosed every year within the UK, it is important for dental professionals to look out for any signs or symptoms that may be concerning.⁹ Signs and symptoms commonly include:

- Persistent non-healing ulcers (present for longer than three weeks with no obvious explanation for its presence)⁹
- A mass or lump on the lip or within the oral cavity⁹
- Abnormal bleeding⁹
- A red (erythroplakia) or mixed red and white (erythroleukoplakia) area⁹
- An unexplained persistent sore throat⁹
- Regional lymphadenopathy or unexplained neck lump^{4,9}
- Unexplained pain on one side of the face or neck lasting longer than four weeks⁴
- Hoarseness that is persistent and unexplained.⁹

If a patient presents with any of the above signs or symptoms, then a referral on the suspected cancer referral pathway is advised.

These patients are then typically seen within two weeks of the referral. Clinicians are advised not to hesitate when referring these patients as early diagnosis and treatment significantly improves a patient's long-term prognosis.^{2,3}

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