Cancers of the oral cavity

See also the separate Head and Neck Cancers article.

What is oral cavity cancer?

Most cancers of the oral cavity and pharynx are squamous cell carcinomas (SCCs).[1] The most common site of head and neck cancer in the UK is the tongue.[2] Lip cancer is the least frequent type of oral cancer. Oral cavity cancer includes tumours of the:[3]

- Mucosal surface of the lip.
- Anterior two-thirds of the tongue.
- Gingivae.
- Floor of the mouth.
- Palate.

Oral mucosal melanomas may occur, particularly affecting the palate, alveolar gingivae and lips. Virtually any malignancy can metastasise to the oral cavity but carcinomas of the breast, lung, kidney and adrenal gland are the most common.

Early detection and treatment are critical, as they increase survival chances considerably, allow for simpler treatment and result in a better quality of life for survivors.

How common is oral cavity cancer? (Epidemiology)[2] [4] [5]

- Around 8,800 people in the UK are diagnosed with oral cavity cancer annually.
- The lifetime risk of oral cavity cancer in the UK is estimated at 1 in 55 for men, and 1 in 108 for women.

- In the UK, 80% of oral cavity cancer cases occur in people aged 55 and above.
- Oral cancer incidence rates in the UK have risen by a third in the last decade.
- Worldwide, over 370,000 oral cavity cancers were diagnosed in 2020, with significant variation in incidence between countries.
- In India, oral cavity cancer is one of the most common cancers.[6]

Risk factors

Heavy smoking (or chewing tobacco products), heavy alcohol consumption and poor dentition are the principal risk factors in western countries.

Smoking is the main avoidable risk factor for oral cancer, linked to an estimated 65% of oral cancer cases in the UK. An estimated 46% of oral cancers in the UK are linked to modifiable and preventable factors. Established risk factors include:[2] [4] [7]

- Smoking.
- Smokeless tobacco products, such as chewing tobacco, snus, and betel quid.
- Alcohol consumption.
- Human papillomavirus (HPV) infection. Oral sex may lead to HPV infection of the oral cavity; oral cavity cancer risk is greater in people with a higher number of sexual partners.
- Ionising radiation.
- Occupational exposures, such as to formaldehyde or wood dust.
- Excessive sunlight exposure, for melanoma of the lip.

Epstein-Barr virus infection is also associated with a greater risk of oral squamous cell carcinoma.[8]

Screening

Although there is evidence that a visual examination as part of a population-based screening programme reduces the mortality rate of oral cancer in high-risk individuals, there is otherwise little evidence to support any screening programme for early detection of oral cavity cancers.[9]

Medical and dental professionals should remain vigilant for signs of potentially malignant disorders and oral cancer when performing oral examinations.[10]

A systematic population screening programme is not currently recommended in the UK.[11]

Differential diagnosis

- Actinic keratosis.
- Oral candidiasis.
- Leukoplakia.
- Lichen planus.

Symptoms of oral cavity cancer (presentation)

Tongue cancer

- Malignancies of the tongue may grow to significant size before they cause symptoms.

- Approximately 75% occur in the mobile tongue:
    - They are often well differentiated. The cancer may spread easily and become symptomatic only when its size interferes with movement:
    - SCC of the tongue may arise in apparently normal epithelium, in areas of leukoplakia, or in an area of chronic glossitis. These lesions are usually larger than 2 cm at presentation, with the lateral border being the most common site.
    - The macroscopic appearance of these lesions depends on the duration of the lesion, the amount of keratinisation and the changes in the adjoining mucosa. A fully developed lesion has the appearance of an exophytic bulky lesion that is grey to greyish-red and has a rough, shaggy or papillomatous surface.
    - The patient may develop speech and swallowing dysfunction.
    - Pain occurs when the tumour involves the lingual nerve and this pain may also be referred to the ear.
- Carcinomas of the tongue base:
    - These are clinically silent until they deeply infiltrate the tongue musculature. They are usually less differentiated.
    - Because of the difficulties with direct visualisation, they may extend into the oral tongue or have clinical lymph metastases before the diagnosis is established.

Tonsillar cancer

More than 70% of tonsillar cancers are SCC. Most of the others are lymphomas. Metastases to the palatine tonsils are rare but there have been reports of secondaries from breast, lung, renal, pancreatic and colorectal malignancies.

- Patients with tonsillar carcinomas may present with a neck mass, usually in the jugulodigastric region. Even if the neck mass is not evident on casual inspection, careful palpation may reveal cervical lymphadenopathy.

- Sore throat, ear pain, foreign body or mass sensation, and bleeding may occur.
- Trismus is an ominous sign because it probably indicates involvement of the parapharyngeal space. Such tumours may be large enough to involve or encase the carotid sheath. In addition, the tumour may extend to the skull or mediastinum.
- If the tumour has involved the tongue base, contralateral nodes may be involved.
- Primary tonsillar tumours may grow entirely beneath the surface. The clinician may therefore see nothing suspicious or may see only a slight increase in the size of the tonsil or the firmness of the area.
- Alternatively, an exophytic fungating mass with central ulceration and heaped-up edges may be present. It may be deep red to white.
- Weight loss and fatigue are not uncommon.
- Treatment may lead to pain, xerostomia, infections, poor wound healing, dysphagia, fistula formation, trismus, potential disfigurement and fatigue.

Buccal mucosa cancer

- The tumour is usually at the level of the occlusal plane or below it.
- The lesion is usually painless in the early stages and, only when it becomes ulcerated and secondarily infected or invades an adjacent nerve, is pain the noticeable feature.
- This may be followed by bleeding and difficulty chewing.
- They may be proliferative warty exophytic growth with little fixation, or deeply ulcerative invasive lesion.
- The proliferative lesion, although it looks dangerous, is easily treatable and long-term prognosis is good, as the metastasis to the local lymph nodes is relatively late.
- In contrast, the ulcerative lesion (which is not so easily noticeable in the early stages) is more dangerous because of its invasive nature and very early metastasis to the local lymph nodes.

Editor's note

Dr Krishna Vakharia, 16th October 2023
Suspected cancer: recognition and referral [12]
The National Institute for Health and Care Excellence (NICE) has recommended that a person should receive a diagnosis or ruling out of cancer within 28 days of being referred urgently by their GP for suspected cancer.

Staging

The 'tumour, nodes, metastases' (TNM) staging system can be used to stage oral cavity cancers. T is the extent of the primary tumour; N is the involvement of regional lymph nodes; M is the presence of metastases. The depth of infiltration is predictive of prognosis. TNM staging in the 8th edition of the AJCC staging system is as follows: [13]

T - primary tumour

- T1 - tumour 2 cm or less in greatest dimension, and depth of invasion 5mm or less.
- T2 - tumour 2 cm or less, and depth of invasion 5mm to 10mm; or tumour 2 to 4 cm, and depth of invasion 10mm or less.
- T3 - tumour larger than 4 cm; or depth of invasion greater than 10mm for any tumour.

The N and M staging definitions are similar in all areas of the upper aerodigestive tract and are outlined in the Head and Neck Cancers article.

Oral metastatic lesions from other sites are uncommon but the most common primary sites are lung, prostate, gastrointestinal tract, thyroid gland, breast and liver. [14]

Referral

For urgent referrals to assess the possibility of oral cancer, NICE recommends: [12]

- Consider a suspected cancer pathway referral (for an appointment within two weeks) for oral cancer in people with either:
    - Unexplained ulceration in the oral cavity lasting for more than three weeks; **or**
    - A persistent and unexplained lump in the neck.
- Consider an urgent referral (for an appointment within two weeks) for assessment for possible oral cancer by a dentist in people who have either:
    - A lump on the lip or in the oral cavity; **or**
    - A red or red and white patch in the oral cavity consistent with erythroplakia or erythroleukoplakia.

Management of oral cavity cancer[15]

- Surgery is the mainstay of treatment for oral cavity cancers. The aim of surgery is to resect the tumour completely, ideally with a 1 cm clearance around the tumour, vital structures permitting. Surgical approaches include:
    - Conventional surgery.
    - Laser surgery.
    - Thermal surgery.
    - Photodynamic therapy.
- Surgical treatment may require reconstructive surgery.

- There is debate over the timing and role of cervical lymphadenectomy: specifically, the role of elective neck dissection (performed at the time of the primary surgery) versus therapeutic neck dissection (performed if nodal metastases develop during follow-up).
    - A 2016 multidisciplinary UK guideline recommends offering elective neck dissection to all people with oral cavity tumours, [15] citing trial evidence that it improves overall and disease-free survival in most oral cancers.[16]
    - However, a 2018 Cochrane review concluded that the available evidence comparing elective and therapeutic neck dissection was of very low certainty, and that it was insufficient to make a clear recommendation in favour of either technique.[17]
- Adjuvant radiotherapy, and, in patients with good performance status, adjuvant chemoradiotherapy, are offered for advanced disease (T3, T4 and T1-4 N1); these offer improvements in overall survival.[18] [19]
- Brachytherapy may be an option for early stage tumours (T1 and small T2).
- For locally recurrent disease, treatment options may include repeat surgery, brachytherapy, or external beam radiotherapy.
- Palliative radiotherapy may be offered for patients with advanced and inoperable cancers, or for patients who are unfit for more intensive treatments.
- Palliative chemotherapy may be offered for patients with inoperable, recurrent, and/or metastatic disease.

Prognosis

There are no UK-wide statistics available for oral cavity cancer survival by stage.[20] US figures from the National Cancer Institute's SEER programme, collected between 2013 to 2019, give the following estimates:[21]

Floor of mouth cancers

- Localised: 5-year survival rate of 72%.

- Regional: 5-year survival rate of 43%.
- Distant: 5-year survival rate of 24%.

Tongue cancers

- Localised: 5-year survival rate of 85%.
- Regional: 5-year survival rate of 70%.
- Distant: 5-year survival rate of 41%.

Lip cancers

- Localised: 5-year survival rate of 94%.
- Regional: 5-year survival rate of 62%.
- Distant: 5-year survival rate of 38%.

Most recurrences occur within 2 years of initial treatment.[22]

Prevention of oral cavity cancer

- Lifestyle factors, including smoking avoidance/cessation, avoiding excessive alcohol intake, good dental hygiene.
- Eating a well-balanced diet can reduce the risk of oral cancer. This includes a diet high in fruits, vegetables and fish and low in high-fat and cholesterol meats, rice and refined grains.[23]

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