

Welcome to Module 3

Complications
of head and
neck cancer



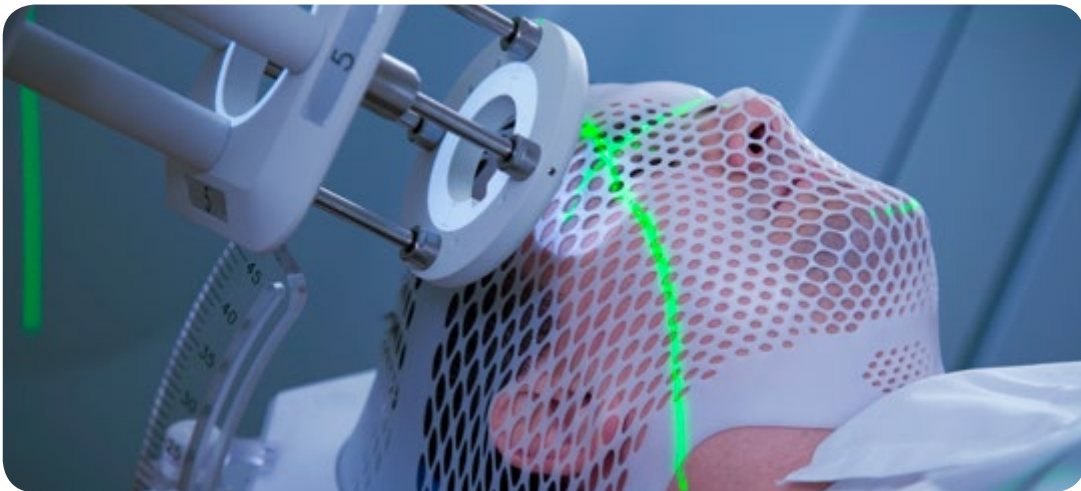
COMPLICATIONS OF HEAD AND NECK CANCER

In the UK there are around 10,000 new cases of head and neck cancer each year. Within the head and neck there are more than 30 areas where cancer can develop, including the mouth, lips, voice box, throat, salivary glands, nose and sinuses and areas at the back of the throat.¹

Chemotherapy is used to treat roughly 70% of cancer patients and a lot of patients unfortunately go on to develop oral health complications.² **Certain chemotherapeutic agents can alter saliva buffering capacity.** Drugs used to treat cancer can result in thickening of saliva inducing a dry feeling and impairing salivary function.³ This is often reversible after treatment.



Radiotherapy to the head and neck can cause irreversible hyposalivation. The degree of destruction of glandular tissue depends on the dose of radiation administered.³ The salivary tissue is extremely sensitive to radiation and doses of greater than 30 Gy are sufficient to change salivary function permanently.³ Partial recovery of the gland is possible unless the whole gland has undergone high doses of radiation and takes 6-12 months.³ Radiotherapy does not spare normal cells with high replication rates such as epithelium of skin and mucous membranes or highly specialised cells in neurological tissue, salivary gland secretory tissue or osteoblasts in bone which, when damaged, are unable to repair themselves.⁴



Dry mouth is responsible for the most common and long-standing problems following orofacial radiotherapy. Salivary gland function rarely recovers following secretory cell damage and it remains difficult to avoid gland damage.⁴

In one survey, investigators observed that **64% of long-term survivors** (at least 3 years after conventional radiotherapy) **had a moderate to severe degree of xerostomia.**⁵ Radiation induced damage to the salivary glands alters the volume, consistency and pH of secreted saliva. Saliva changes from thin secretions with a

neutral pH to thick, tenacious secretions with increased acidity.⁵ With continued impacts on quality of life for patients who are potentially cured of their cancer this poses a new health problem.

Radiation-induced dry mouth starts early during treatment: **in the first week 50-60% decrease in salivary flow occurs and after 7 weeks flow diminishes to approximately 20%.**⁵ Salivary function continues to decline for up to several months following radiotherapy. Some recovery is possible 12-18 months after radiotherapy however dry mouth generally develops into a life-long condition.⁵



A survey of 65 patients who survived for longer than six months after radiotherapy found:

- **91.8%** complained of a dry mouth
- **43%** had difficulty chewing
- **63.1%** had dysphagia (difficulty swallowing)
- **75.4%** had taste loss
- **50.8%** had altered speech
- **48.5%** had difficulty with dentures
- **38.5%** reported increased tooth decay

Swallowing food may also become a problem post radiotherapy due to a generalised decrease in the mobility of pharyngeal structures and a delay of laryngeal closure.⁵

Improvements in cancer treatment outcomes mean that dental practitioners will have to potentially treat and advise patients requiring oral healthcare with malignancies at various stages of the disease. Patients will also require extra care once treatment is over, as survivorship rates continue to increase.



References

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