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MSCT DIAGNOSIS OF CANCER OF THE ORAL CAVITY AND OROPHARYNX

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ABOUT ARTICLE

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Abstract: Tumours in the oral cavity and oropharynx differ in presentation and prognosis and the detection of spread of tumour from one subsite to another is essential for the T-staging. This article reviews the anatomy and describes the pattern of spread of different cancers arising in the oral cavity and oropharynx; the imaging findings on computerized tomography and magnetic resonance imaging are also described. Brief mention is made on the role of newer imaging modalities such as [(18)F]fluorodeoxyglucose-positron emission tomography/computed tomography, perfusion studies and diffusion-weighted magnetic resonance imaging.

INTRODUCTION

How oral or oropharyngeal cancer is diagnosed

There are many tests used for diagnosing oral or oropharyngeal cancer. Not all tests described here will be used for every person. Your doctor may consider these factors when choosing a diagnostic test:

- The type of cancer suspected
- Your signs and symptoms
- Your age and general health
- The results of earlier medical tests

The following tests may be used to diagnose oral or oropharyngeal cancer:

- Physical examination. Dentists and doctors often find lip and oral cavity cancers during routine checkups. If a person shows signs of oral or oropharyngeal cancer, the doctor will take a complete medical history, asking about the patient's symptoms and risk factors. The doctor will feel for any lumps on the neck, lips, gums, and cheeks. Because people with oral or oropharyngeal cancer have a higher risk of other cancers elsewhere in the head and neck region, the doctor will examine the area behind the nose, the larynx (voice box), and the lymph nodes of the neck.

- Endoscopy. An endoscopy allows the doctor to see inside the mouth and throat. Typically, a thin, flexible tube with an attached light and view lens, called an endoscope, is inserted through the nose to examine the head and neck areas. Sometimes, a rigid endoscope, which is a hollow tube with a light and view lens, is placed into the back of the mouth to see the back of the throat in more detail.

Endoscopic examinations have different names depending on the area of the body that is examined, such as laryngoscopy to view the larynx, pharyngoscopy to view the pharynx, or nasopharyngoscopy to view the nasopharynx. To make the patient more comfortable, these examinations are performed using an anesthetic spray to numb the area. If an area looks suspicious, the doctor will take a biopsy (see below). Tests are often done in the doctor's office. However, sometimes an endoscopy must be performed in an operating room at a hospital using general anesthesia, which blocks the awareness of pain.

- Biopsy. A biopsy is the removal of a small amount of tissue for examination under a microscope. Other tests can suggest that cancer is present, but only a biopsy can make a definite diagnosis. The type of biopsy performed will depend on the location of the cancer. During a fine needle aspiration biopsy, cells are removed using a thin needle inserted directly into the suspicious area. A pathologist then analyzes the cells. A pathologist is a doctor who specializes in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease.

- Oral brush biopsy. During routine dental examinations, some dentists are using a newer, simple technique to detect oral cancer in which the dentist uses a small brush to gather cell samples of a suspicious area. The specimen is then sent to a laboratory for analysis. This procedure can be done in the dentist's chair with very little or no pain. If cancer is found using this method, a traditional biopsy is recommended to confirm the results.

- HPV testing. HPV testing may be done on a sample of the tumor removed during the biopsy. As described in Risk Factors and Prevention, HPV has been linked to a higher risk of oropharyngeal cancer. Knowing if a person has HPV can help determine the cancer's stage and the treatment options that are

likely to be most effective. ASCO recommends that HPV testing is done for all patients newly diagnosed with oropharyngeal squamous cell carcinoma. This is a type of oropharyngeal cancer that starts in flat, scale-like cells called squamous cells. Testing is not usually recommended for oropharyngeal cancer that starts in other types of cells or for other types of head and neck cancer. Learn more details about recommendations for HPV testing on a separate ASCO website.

- X-ray. An x-ray is a way to create a picture of the structures inside of the body, using a small amount of radiation. X-rays may be recommended by your dentist or doctor to look for abnormal findings in the mouth or neck.

- Barium swallow/modified barium swallow. There are 2 barium swallow tests that are generally used to look at the oropharynx and to check a patient's swallowing. The first is a traditional barium swallow. During an x-ray exam, the patient is asked to swallow liquid barium. This lets the doctor look for any changes in the structure of the oral cavity and throat and see whether the liquid passes easily to the stomach. A modified barium swallow, or videofluoroscopy, may be used to evaluate difficulties with swallowing.

- Computed tomography (CT or CAT) scan. A CT scan takes pictures of the inside of the body using x-rays taken from different angles. A computer combines these pictures into a detailed, 3-dimensional image that shows any abnormalities or tumors. A CT scan can be used to measure the tumor's size, help the doctor decide whether the tumor can be surgically removed, and show whether the cancer has spread to lymph nodes in the neck or lower jawbone. Sometimes, a special dye called a contrast medium is given before the scan to provide better detail on the image. This dye can be injected into a patient's vein or given as a pill or liquid to swallow.

- Magnetic resonance imaging (MRI). An MRI uses magnetic fields, not x-rays, to produce detailed images of the body, especially images of soft tissue, such as the tonsils and the base of the tongue. MRI can be used to measure the tumor's size. A special dye called a contrast medium is given before the scan to create a clearer picture. This dye can be injected into a patient's vein or given as a pill or liquid to swallow.

- Ultrasound. An ultrasound uses sound waves to create a picture of the internal organs. This test can detect the spread of cancer to the lymph nodes in the neck, which doctors also call the "cervical lymph nodes."

- Positron emission tomography (PET) or PET-CT scan. A PET scan is usually combined with a CT scan (see above), called a PET-CT scan. However, you may hear your doctor refer to this procedure just as a PET scan. A PET scan is a way to create pictures of organs and tissues inside the body. A small amount of a radioactive sugar substance is injected into the patient's body. This sugar substance is taken up by cells that use the most energy. Because cancer tends to use energy actively, it absorbs more of the radioactive substance. However, the amount of radiation in the substance is too low to be harmful. A scanner then detects this substance to produce images of the inside of the body.

After diagnostic tests are done, your doctor will review the results with you. If the diagnosis is cancer, these results also help the doctor describe the cancer. This is called staging.

The next section in this guide is Stages and Grades. It explains the system doctors use to describe the extent of the cancer. Use the menu to choose a different section to read in this guide.

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