Dept. of Otorhinolaryngology -
Head and Neck Surgery
Information for patients

Have you been diagnosed with throat cancer?
Learn about minimally invasive surgery

Diagnosis and treatment options

The *throat* is the name usually given to the anterior part of the neck. It refers to the initial portion of the digestive tract following the mouth, which anatomically corresponds to the pharynx (more correctly to a portion of the pharynx called *oropharynx*). Tumors growing in this site, specially those related to the Human Papillomavirus (HPV) arise from the tonsil (pharyngeal tonsil) or from the base of the tongue (actually, from the lingual tonsil).

If you have been diagnosed with throat cancer your doctor will discuss with you your particular condition, the treatment options, and the best alternative in your case. Depending on the size of the tumor, the particular location and extension, treatment options may include surgery, chemotherapy or radiotherapy, or a combinations of those. If they recommend a non-surgical primary treatment, they should explain why, since current scientific evidence suggests that the sequelae of minimally invasive surgical treatments might be milder than those of radiotherapy / radiochemotherapy. If your doctors recommend surgery, there are two basic ways to approach it: open surgery or transoral minimally invasive surgery (through the mouth).

Open surgery

For traditional open surgery, it is necessary to make incisions in the skin. For the usual approach to the oropharynx, this incision is made in the lower lip and the skin of the chin and later the jaw bone must also be cut (it will be joined again with a screwed titanium plate). It is also necessary to cut the deep soft tissues down to the oropharynx.

A safety tracheostomy is usually required temporarily. In addition, it is often necessary to transfer tissue from other parts of the body to restore the area from which the tumor has been removed. This implies additional damage and a substantial prolongation of surgical time and subsequent hospital stay. Given that the results regarding cancer control are comparable and the associated problems greater, open surgery for oropharyngeal cancer has been abandoned in recent years in favor of minimally invasive surgery. Even so, there will be cases, especially for locally advanced tumors, that will continue to require open or combined approaches.

Minimally invasive surgery

Minimally invasive surgery was designed to minimize the damage associated with surgical procedures, particularly with the surgical approach. In the case of oropharyngeal cancer, this access is through the mouth, so that the tumor is reached directly without making any type of external incision.

Minimally invasive surgery is highly dependent on technology. These approaches can only be performed if the technical capacity exists to visualize and manipulate tissues effectively and safely. Transoral laser microsurgery is one of these options. A microscope is used for visualization and the laser is used as the cutting instrument. However, this technique has important limitations in vision capacity (which must always be in a "straight line") and manipulation.

The development of imaging systems in surgery is definitely evolving towards endoscopic vision. There are various transoral endoscopic surgical techniques. Robotic surgery is actually the most sophisticated form of endoscopic surgery that exists, offering a number of advantages over transoral laser microsurgery and other forms of transoral endoscopic surgery.

Transoral Robotic Surgery

The da Vinci Robotic Surgery System allows surgeons to work through the mouth and operate on the oropharynx without visible scars (except for those associated with neck node removal if required). Its key features are:

- It provides a high definition close 3D view (endoscopic) of the surgical field.
- The instruments have a movement capacity that exceeds that of the human hand.
- This provides the surgeon with better vision, precision and control.

The surgeon controls the da Vinci so that the movements of his hands are transmitted to the small, precise instruments inserted into the patient's body (this is named *telesurgery*).

Like all surgical procedures, Transoral Robotic Surgery is associated with risks. There may be postoperative bleeding that can be life-threatening, or difficulty to swallow that may make it necessary to feed through a tube; in very rare cases this may be permanent. However, the need for feeding tubes is much less frequent in patients treated with transoral surgery than in those treated with open surgery or radiochemotherapy. There are risks to the airway that may require a prolonged connection to a respirator or a hole in the neck (*tracheostomy*) to breathe. Likewise, the need for a tracheostomy is exceptional in transoral surgery and routine in open surgery. There may be lesions on the tongue, difficulty to move the tongue or to open the mouth, dental lesions, changes in the speech, etc. Potentially any minimally invasive procedure may need to be "converted" to open surgery due to impossibility of performance or safety concerns. This is usually exceptional with proper planning. Your doctors will explain in detail the risks associated with the procedures.

Of course this technology is also applicable to benign tumors of the oropharynx.

If you have been diagnosed with throat cancer, robotic surgery may be an option. Your doctor should review the information available and evaluate the surgical and non-surgical treatment options with you to make the most appropriate decision. Normally, if you are a candidate for Transoral Robotic Surgery and your doctors recommend it, it will be because they consider that this is the option with better functional expectations and fewer sequelae associated with the treatment of your disease.