Trans-oral robotic surgery for head and neck cancer

ABOUT THE SURGERY

What is trans-oral robotic surgery?

Trans-oral robotic surgery, or TORS, is throat surgery performed through the mouth, under general anaesthetic, with robotic assistance. TORS uses a 3D high-definition camera and special jointed instruments which the surgeon can bend and move a bit like a human wrist. These allow a clearer view and better access to areas which are usually difficult to reach, such as the base of the tongue, lower part of the tonsils and the area above the voice box.

The surgeon controls these instruments from a console, usually found in a corner of the operating room, and always has full control of the instruments in your mouth. An assistant surgeon will be next to you throughout the operation.

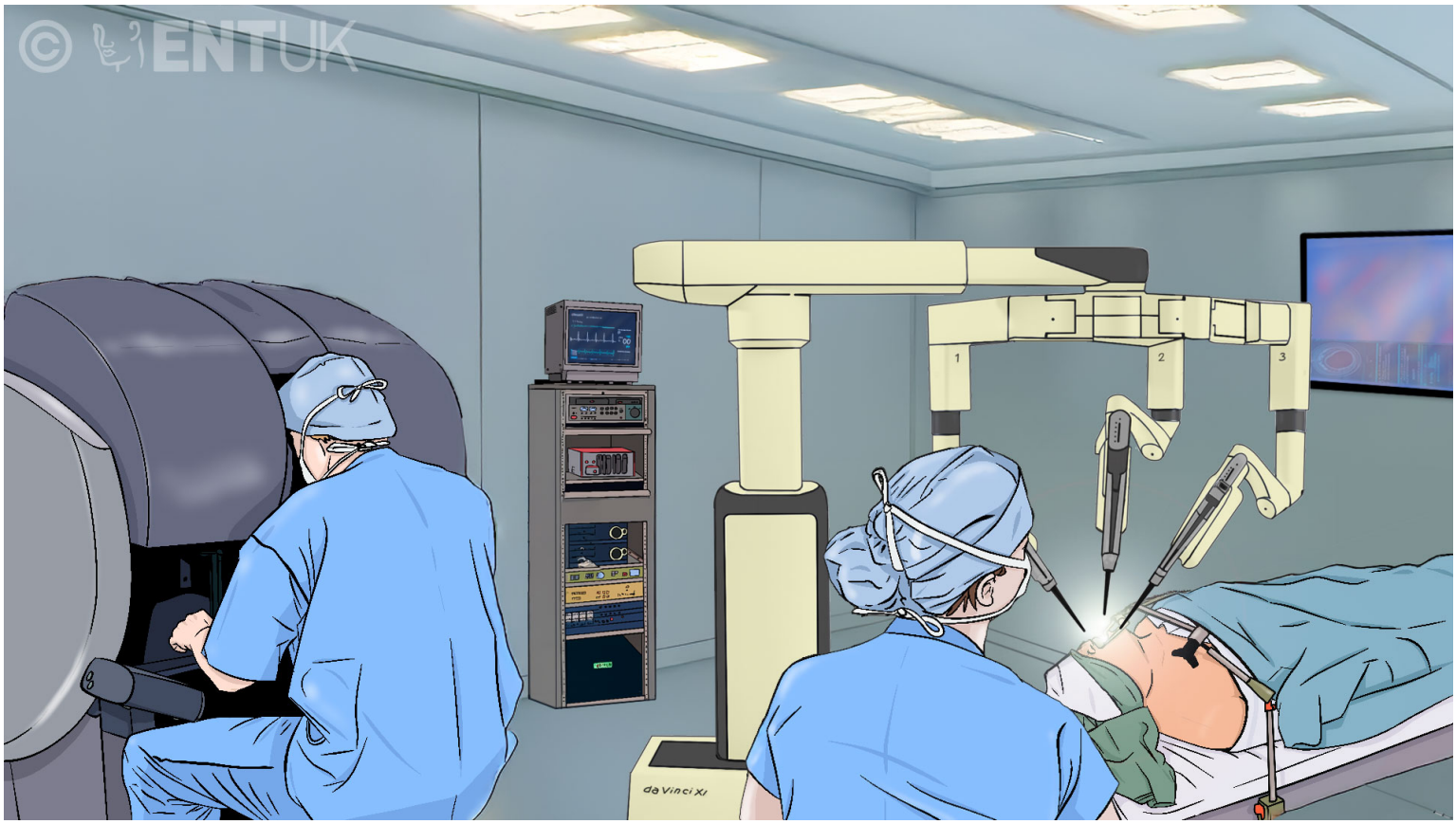


Figure 1. The da Vinci robot in position during TORS

What are the benefits of having TORS?

As well as improving the surgeon's view and access to hard-to-reach areas of the throat during surgery, TORS offers patients major benefits compared to open surgery (where the jawbone is cut to allow access to the back of the throat). These include:

- avoiding complications of open surgery, such as the jawbone not healing
- improved eating, drinking, swallowing and speech
- quicker recovery, and a shorter stay in hospital.

Why do I need this operation?

Your case was discussed by the multi-disciplinary team (MDT) for head and neck cancer, and they agreed that TORS is the most suitable treatment for you.

It may be because you have a cancer located in the back of the throat, for example in the tonsil, base of the tongue or area above the voice box. Your surgeon can access these areas and remove the cancer more easily using TORS.

The following are the four commonest types of TORS surgery performed in the UK.

- A **lateral oropharyngectomy** involves removal of the tonsil cancer with a border of normal tissue.
- A **tongue base hemiglossectomy** involves removing half the tongue base, including the cancer.
- A **supraglottic laryngectomy** involves removal of a cancer above the level of the voice box.
- A **base of tongue mucosectomy**. You may have an enlarged lymph node in the neck containing cancer cells. None of your scans have shown where the 'primary' or original cancer came from.The lining of the base of the tongue will be removed and examined to find the primary cancer. This can then be accurately targeted with further treatment, such as radiotherapy.

Are there alternative treatments to TORS?

Trans-oral laser microsurgery (TLM) uses a microscope and a laser to remove a cancer through the mouth. TLM is a good alternative to TORS. Which technique your surgeon chooses usually depends on his or her preference and how accessible the cancer is.

Before the era of TLM and TORS, these difficult-to-access tumours were removed by an operation which involved splitting the jawbone. Most head and neck departments around the country have moved away from this practice, due to the potential for complications and slow healing. In some patients, however, such major operations are still necessary.

Radiotherapy, with or without chemotherapy, is another alternative treatment. Patients treated non-surgically often have more trouble swallowing. They also have a greater need for feeding tubes (inserted through the patient's middle, directly into the stomach) and tracheostomy (a breathing tube inserted through the skin directly into the windpipe).

Will I need any other treatment?

This will depend on where your tumour is and what type, how advanced it is, and what treatment you have had already. Sometimes we add radiotherapy (special x-ray treatment), chemotherapy (strong drugs given

through the vein to help kill cancer), or both, if we think this may give you a better chance of a cure. Your surgeon will give you further details for your specific cancer type and stage.

Will I have a neck scar?

TORS is performed through the mouth. This means there is no cut on the outside of your neck or face, and there is no need to split the jawbone to reach the cancer being removed.

However, the blood vessels that supply the primary cancer may need to be clipped in order to reduce the risk of bleeding during and after the operation. This will leave a small scar, approximately 4-5 cm, on the same side of the neck.

If the lymph nodes in the neck also need to be removed, a larger scar (7-10 cm) across the neck will be created. Please read the ENT UK patient information leaflet 'About neck dissection'. Neck dissection may be performed at the same time as the TORS or may take place a week or so before TORS (this is called a staged operation).

Can TORS be performed on everyone?

TORS is not suitable for every patient. Reasons for not choosing TORS include:

- Unfavourable anatomy, such as patients whose neck cannot be extended or patients with poor mouth opening, for example from previous radiotherapy treatment or the position of cancer.
- If the carotid artery, the big blood vessel bringing blood from the heart to the brain, is found too close to a tonsil cancer, performing TORS or TLM may put this blood vessel at risk.
- If your primary or original cancer is small and suitable for TORS but the secondary cancer in your neck lymph nodes is very large, your surgeon may recommend chemotherapy and radiotherapy to treat them instead.
- The machine to perform TORS is not available in every head and neck cancer unit in the UK.

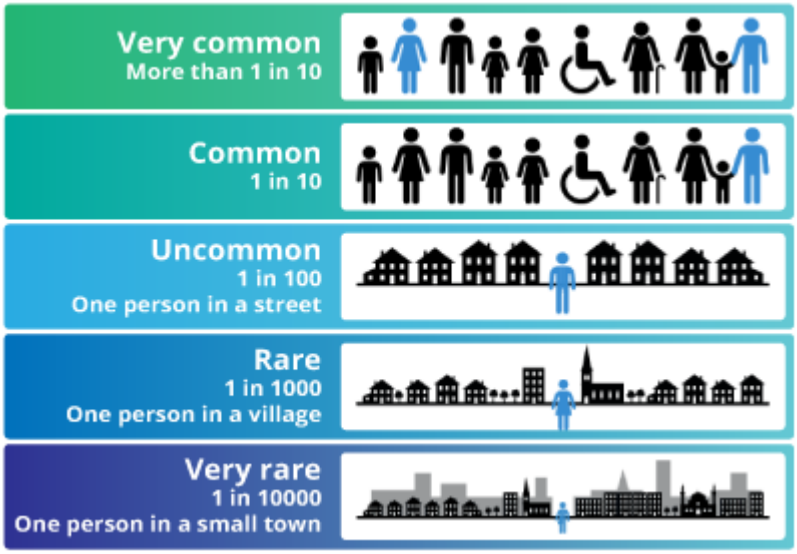
ABOUT THE RISKS

Are there any complications to this operation?

All operations have an intended benefit but also have risks. Most patients who have this procedure recover well.

You can help reduce some of the risks discussed below if you stop smoking, drink alcohol within recommended limits, exercise regularly and maintain good nutrition.

The complications and risks of any operation are grouped as follows:



Some patients are more likely to have certain complications. These include patients who have previously had radiotherapy to the throat, or who suffer from medical conditions such as diabetes. This is also true of patients who require more complex surgery, such as creating a connection from the mouth or throat into the neck

- **Painful throat.** A painful throat is common after this procedure (less than ten out of 100 people will have severe symptoms). The area operated on is left open to heal 'by secondary intention', which means that no stitches are inserted. You will be provided with strong painkillers and mouth gargles. Please ask your nurse for more pain medication if needed.
- **Neck pain**. Please inform your surgeon and anaesthetist if you have neck problems before your surgery. This is because your neck needs to be extended during this procedure. Significant neck pain after surgery can occur in one out of 100 cases.
- **Dental, gum or lip trauma**. Surgery is performed through your mouth. Precautionary measures are taken to protect your teeth, gums and lips as there is a one or two in 100 risk of damage. There is a risk of chipping or even dislodging a tooth. Please tell your surgeon and anaesthetist if you have loose or capped teeth before surgery. Because of the limited space inside your mouth, bruising of your gums and some swelling and bruising of the lips and tongue can occur. This tends to settle down quite quickly.
- **Swelling of the tongue**. Swelling of the tongue and some numbness is expected. This can occur in 14 out of 100 cases, especially when operating on the base of the tongue or if surgery takes longer than planned. You may require steroid medication to reduce the swelling after surgery. There is a chance we may need to keep you asleep in the Intensive Therapy Unit, with your tubes in place, until the swelling settles down. In rare circumstances, a tracheostomy tube may need to be inserted through the skin directly into your windpipe to help your breathing if the tongue swells up too much.
- **Airway blockage**. There is a risk of surgery causing serious enough difficulty breathing through the nose and mouth to need medical action. This can happen in nine out of 100 cases. Medical action might include steroid treatment or keeping your tubes in place for longer. The risk of needing a tracheostomy tube is up to 5% in more complex cases.
- **A numb tongue**. Damage to the lingual nerve causing permanent numbness on one side of the tongue can occur between one and three out of 100 cases.
- **A weak tongue (caused by problems to the hypoglossal nerve)**. The hypoglossal nerve controls movement of one side of the tongue. It is extremely rare for this nerve to be damaged during a routine operation. Very rarely, this nerve must be removed due to its closeness to a tumour at the base of the

tongue. In case of damage to the hypoglossal nerve, which occurs in one out of 100 cases, you will find it difficult to move your tongue to one side and to clear food from that side of the mouth. It can also affect your swallowing and your speech. Should this occur, you will be referred to a speech and swallowing therapist.

- **Changes to speech**. In addition to changes in speech due to one side of the tongue not working well, cancer surgery may lead to hypernasal speech in four out of 100 cases when a large amount of soft palate is removed.
- **Bleeding**. You may see some blood in your saliva. This can occur in between one and 27 out of 100 cases. Please attend the emergency department if you bring up a large amount of blood after you are sent home. You will need to be brought back to hospital for observation and will probably have to be given antibiotics. Sometimes, we may need to take you back to the operating room and control the bleeding under a general anaesthetic. In extremely rare circumstances, a tracheostomy tube may need to be inserted through the skin directly into your windpipe to protect your lungs from blood. To reduce the risk of severe bleeding, which can occur in approximately ten in every 100 cases, we make a cut in the neck before the TORS procedure and tie the main blood vessel bringing blood to your cancer.
- **Throat infection**. The surgical site may get infected in two or three out of 100 cases. Some units will give you antibiotics at the start of and after surgery to reduce the risk of infection. Please discuss this with your surgeon and inform the team if you are allergic to antibiotics or have negative effects when you take them.
- **Airway fire**. As we are using hot instruments in your throat, close to your breathing tube which contains oxygen, there is a small risk of a fire starting in your throat. This is extremely rare as precautions are used to prevent this from happening.
- **Complications of general anaesthetic**. The operation is performed under general anaesthetic. Problems can include blood clots in the legs (called deep vein thrombosis) or lungs (called pulmonary embolism), heart attack, chest infection, stroke, and death. These complications are all rare. However, some patients have other medical conditions that make them more likely and increase the risks of a general anaesthetic. The pre-assessment team and anaesthetist will explain what occurs during a general anaesthetic and the associated risks that are relevant to you. **This link** summarises the common events and risks.

WHAT HAPPENS AFTER MY OPERATION?

After the operation, you will be transferred to the recovery area. When you are fully awake, you will be taken to the ward area or the day case unit.

Pain

You will experience pain following your operation, but strong pain medication will be provided to ensure that you are as comfortable as possible.

Swallowing and eating

A speech and language therapist will assess your swallowing and speech before your operation. The therapist will explain how your speech and swallowing may be affected by TORS and how we expect these

functions to recover over time. Swallowing things down the wrong way and getting a chest infection are reported in up to 15 out of 100 cases. This is why the following precautions are taken.

You will find it difficult to eat and drink, especially in the first 48 hours after the operation. This is mainly due to the pain at the back of your throat or the change in swallowing when the cancer has been removed. You will be given regular painkillers and have extra ones in case you are still in pain. Your nutrition may be given through a nasogastric (NG) feeding tube which runs through your nose, directly into your stomach. Some surgeons always put in an NG tube at the end of the operation. In other units, the dietician who sees you after the operation will talk with your surgeon and the speech and language therapist and decide if a feeding tube is needed. The feeding tube will be taken out when the team is happy that you can manage enough food and drink by mouth. This may be done after you are discharged from hospital.

The speech and language therapist will use advice and exercises to help you eat and drink safely again. Your swallowing may be checked using the following tests:

- A special x-ray swallow test called a videofluoroscopy.
- A camera to look in your throat via your nose, called fibreoptic endoscopic evaluation of swallowing (FEES).

Any changes to speech are usually temporary. The speech and language therapist will talk to you about speech recovery.

How long will I stay in hospital?

You would normally stay in hospital for between three and ten days. Some patients go home sooner than this, while others may have to stay for longer. Once your pain is under control and you are able to eat properly, you will be sent home. If, for any reason, there is a complication following surgery, you might need to stay in hospital for longer.

How long will I be off work?

You should discuss this with your surgeon. This will depend on the type of treatment you have had and other treatment that you may need. As a rule, you will need at least six weeks off work to recover from your operation. If you require radiotherapy after your operation, then you will need a few months off from work. Please ask your surgical team or your GP for a sick note if you need one.

Follow up

You will be given an appointment to come back and see a member of your surgical team. He or she will talk to you about the pathology result from the surgery, whether any further tests or treatment are needed, such as radiotherapy. You will be followed up for a total of five years by the head and neck team in hospital.

Will the tumour come back?

There is a risk that cancer of the head and neck may come back, which is why you will be monitored closely for the next five years.

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FEEDBACK SURVEY

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