

Advice Statement 001/18

January 2018

Is transoral robotic surgery (TORS) clinically and cost-effective for the diagnosis of head and neck cancer of unknown primary?



Why is SHTG looking at this topic?

Da Vinci robotic surgical devices are a relatively new technology which is available at three centres in NHSScotland. These devices are currently used predominantly to provide a laparoscopic prostatectomy service. To ensure the devices are optimally employed, NHSScotland is considering expanding the indications for which robotic surgery is available. This work was requested by the West of Scotland Cancer Network and accepted onto the SHTG programme as a priority to support evidence informed use of robotic surgery capacity.

Evidence Note 74 was produced by Healthcare Improvement Scotland in response to this request.

SHTG advises that:

Head and neck cancer of unknown primary (HNCUP) is a relatively rare condition affecting less than 5% of head and neck cancer patients. Evidence on the use of transoral robotic surgery (TORS) in patients with HNCUP was limited to three small non-comparative studies.

No firm conclusions could be drawn about the effectiveness of TORS mucosectomy/lingual tonsillectomy in patients with HNCUP due to a lack of studies directly comparing TORS with blind biopsy.

No cost-effectiveness evidence was identified on TORS in patients with HNCUP.

NHS boards are required to consider Scottish Health Technologies Group (SHTG) advice.

Background

HNCUP is characterised by malignant metastases in the cervical lymph nodes and a primary tumour that remains undetected following non-invasive diagnostic tests.

Estimates of HNCUP incidence are highly variable due to difficulties in defining an 'unknown primary'. HNCUP accounts for 2% to 5% of all head and neck cancers. Based on head and neck cancer incidence in Scotland in 2015 (n=1,283) this equates to 26–64 cases of HNCUP in Scotland that year. Other estimates suggest up to 160 cases of HNCUP per year in Scotland.

In the UK it is current practice to perform a bilateral palatine tonsillectomy followed by blind biopsy of the tongue base in patients with HNCUP. Palatine tonsillectomy followed by tongue base mucosectomy/lingual tonsillectomy using TORS has been proposed as an alternative technique to current practice in this patient group.

Clinical effectiveness

- Evidence was limited to three non-comparative case series (n<50) with variation in the extent of prior investigation which defined the patient group. In these studies, tumour detection rates for TORS mucosectomy/lingual tonsillectomy in patients considered to have HNCUP were 51% (95% confidence interval (CI) 39% to 62%), 53% (95% CI 36% to 71%) and 54% (95% CI 42% to 65%).
- Tumour detection rates for blind biopsy were not available from the literature identified, therefore it is uncertain how the TORS detection rates compare with current practice.

Safety

- Adverse events were recorded in 8% to 31% of patients with HNCUP undergoing TORS mucosectomy/lingual tonsillectomy in published case series (3 studies, n=130).
- The most frequently reported adverse event was peri-operative bleeding.
- Adverse event rates for blind biopsy were not available from the literature identified, therefore it is uncertain how the TORS adverse event rate compares with current practice.

Cost effectiveness

- No cost-effectiveness evidence was identified on TORS in patients with HNCUP.

Patient and social aspects

- The evidence examined did not encompass patient experience of TORS or investigation of HNCUP.

Context/organisational issues

- Robotic systems (da Vinci®, Intuitive Surgical Inc., California) are installed in three centres in Scotland: Edinburgh, Glasgow and Aberdeen. Each robotic system is presently used 2 to 3.5 days per week to provide a robotic assisted laparoscopic prostatectomy service. The technology is also used in some centres for renal and bladder cancers and for gynaecological indications. As well as interest from head and neck surgeons, colorectal surgical teams are currently exploring robotic assisted surgeries.
- In 2012 a UK evaluation of robotic surgery detailed the costs associated with each procedure. The consumable costs per procedure were approximately £1,200. Despite being based on the prostatectomy procedure, it is expected that this cost is indicative of TORS procedure consumable costs. Additional cost data of interest include the cost of the robot, service and contract costs, and the costs of specialist equipment; full utilisation of the robots will reduce the overall average procedure cost.
- In the first two years of use to March 2017, 486 procedures have been performed: 442 prostate, 33 kidney or renal pelvis, 7 bladder and 4 relating to other cancers.
- TORS is available for selected head and neck cancer patients at twelve centres in England and Wales.
- No studies were identified that assessed the learning curve or volume-outcome relationship for TORS in patients with HNCUP.

Further research

Where possible, prospective comparative studies are required to progress from the evaluation phase to the assessment phase of the [IDEAL Framework](#) for surgical innovation.

Studies should:

- Include patients with HNCUP
- Compare TORS mucosectomy/lingual tonsillectomy with blind biopsy
- Focus on diagnostic accuracy and the impact of primary tumour detection on treatment decisions.

Advice context:

No part of this advice may be used without the whole of the advice being quoted in full. This advice represents the view of the SHTG at the date noted.

It is provided to inform NHS boards in Scotland when determining the place of health technologies for local use. The content of this Advice Statement was based upon the evidence and factors available at the time of publication. An international evidence base is reviewed and thus its generalisability to NHSScotland should be considered by those using this advice to plan services. It is acknowledged that the evidence constitutes only one of the sources needed for decision making and planning in NHSScotland. Readers are asked to consider that new trials and technologies may have emerged since first publication and the evidence presented may no longer be current. SHTG Advice Statements are intended to inform a decision at a particular point in time. They will however be considered for review if requested by stakeholders, based upon the availability of new published evidence which is likely to materially change the advice given. This advice does not override the individual responsibility of health professionals to make decisions in the exercise of their clinical judgment in the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

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Chair

Scottish Health Technologies Group



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