

TRANSURETHRAL LASER ABLATION OF NON-MUSCLE INVASIVE BLADDER CANCER WITH A DIODE LASER: 5 YEAR EXPERIENCE

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INTRODUCTION & OBJECTIVES

Non-invasive bladder cancer is often recurrent. 5-10% of patients will have recurrences that are small and few. Treating these recurrences causes morbidity to patients because of the frequent resections under general anaesthesia that are needed to control the disease. The majority of this patient cohort is elderly with major co-morbidities and as such do not fill the criteria for day surgery, often requiring a 1 to 2 day stay in hospital.

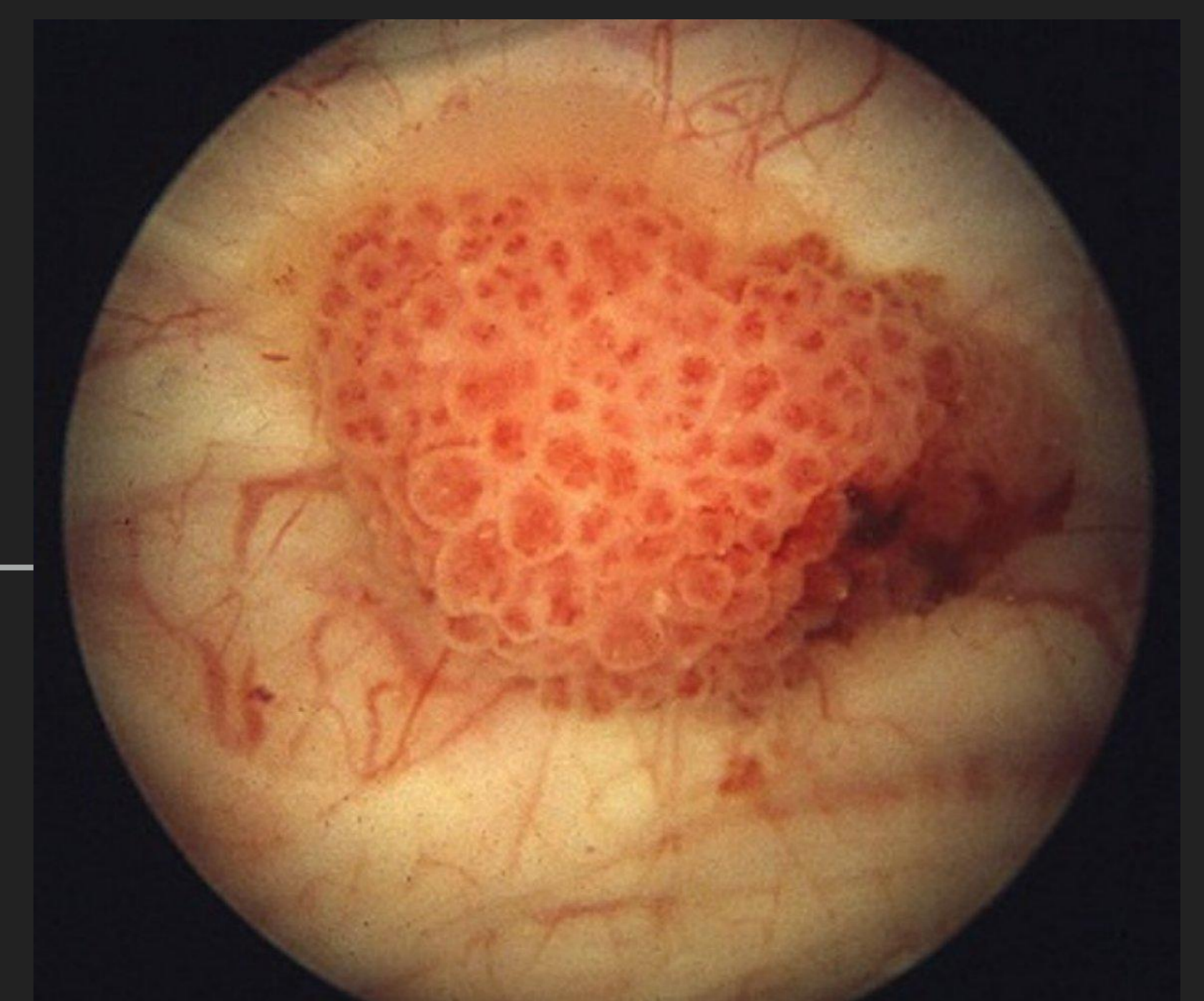
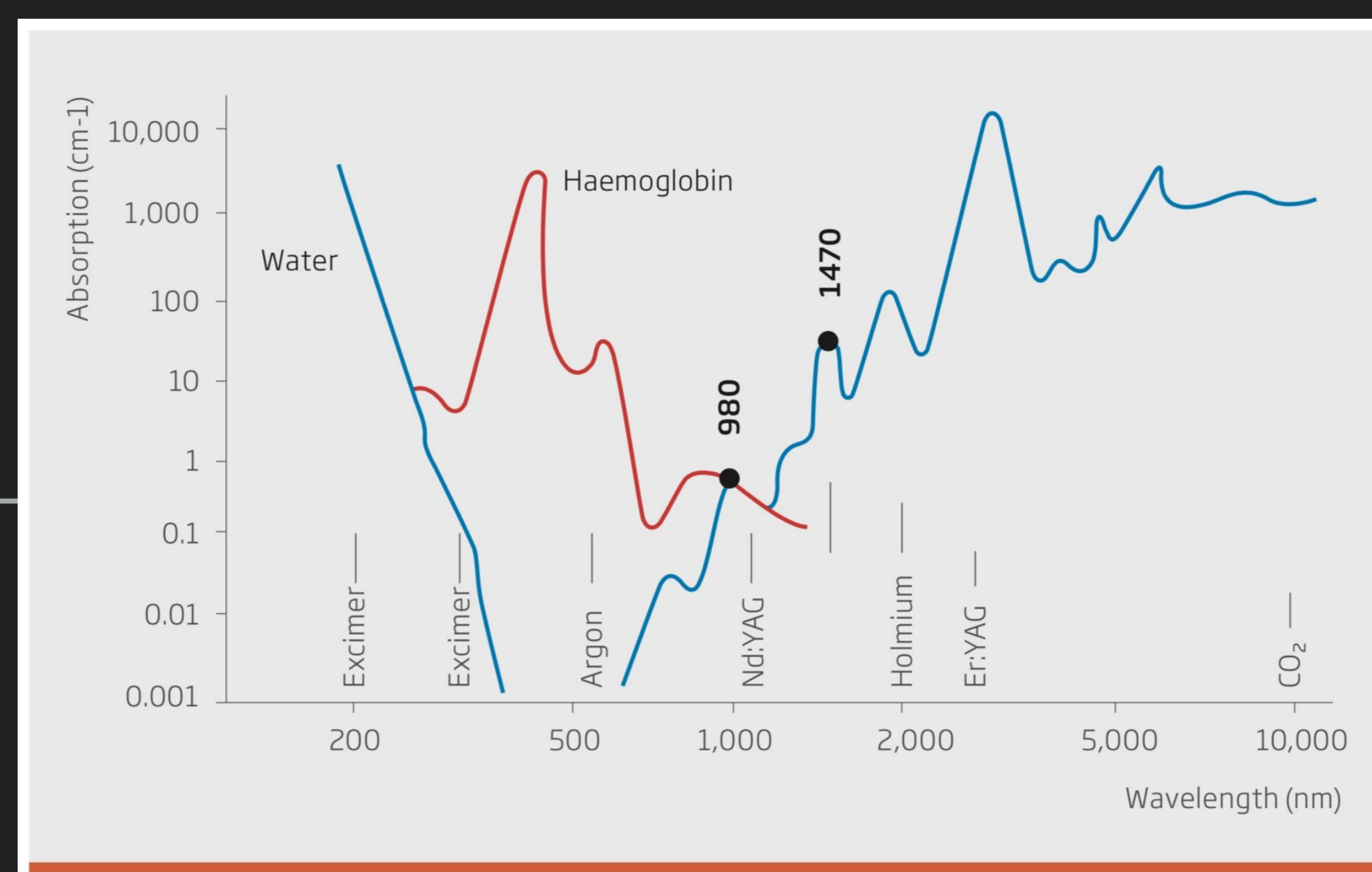
This project aims to prove the safety and efficacy of receiving outpatient laser treatment under local anaesthetic.

Laser vaporization of small bladder tumours has several advantages over standard electrocautery techniques. The lack of electrical conduction reduces discomfort to patients, bleeding is almost absent and even patients on anticoagulation therapy can be treated. The European Association of Urology guidelines recognise the use of lasers for treatment of non-muscle invasive bladder tumours, in particular in co-morbid patients.

METHODS

The Diode laser is a compact, portable and relatively quiet laser. The diode 1470nm (1mm depth of penetration) offers improved haemostasis over the Holmium (0.2mm) and limits the reported bladder perforation risk with the deeper ND;YAG and diode 980mm (5-10mm). As such the diode 1470nm may represent the ideal 'urothelial' laser.

We kept a prospective dataset of patients receiving TULA treatment over a five year period. Parameters recorded include number of patients/ procedures, patient age, comorbidities, procedure time, pain perception, complications, readmission rates, and patient satisfaction.



RESULTS

Between 1st May 2012 and 28th December 2016, there were a total of 454 laser ablations performed on 306 different patients. The median age was 75 (range 24-99 years old). Median procedure time was 10 minutes, mean energy 759J.

Out of 306 patients, 192 had pre existing TCC (141 Ta, 34 T1, 4 T2 (following DXT), 6 CIS, 7 unknown/ historical NMIBC)

102 Laser ablations were conducted whilst the patient was on anticoagulants: (25 aspirin, 22 clopidogrel, 53 warfarin, 1 dabigatran, 1 tinzaparin). No complications were recorded secondary to bleeding. No patients required re-admission.

Out of those questioned, 75% experienced no pain (19% mild pain, 6% moderate pain). All patients opted for repeat outpatient-based TULA.

CONCLUSIONS

Bladder cancer can re-occur in up to 50% of patients over a 5 year period. This often requires multiple procedures and general anaesthetics in patients with multiple medical issues.

The Diode Laser vaporisation of NMI bladder cancer has been proven to be well tolerated, less onerous on patients, and may reduce post operative complications.