

LASER VAPORIZATION OF POSTERIOR AND ANTERIOR URETHRAL STRICTURES: LONG TERM FOLLOW UP WITH DURABLE RESULTS

Hypothesis / aims of study

A recent national survey of board certified urologists (1) indicates that 93% of the urethral strictures are treated with repeated dilatation, 85.6% with optical internal urethrotomy and 23.4% with endourethral stents. Overall results following DVIU have been poor with 50 to 64% recurrence within the first 6 to 12 months. This presentation is a long-term follow up of the patients managed using laser to ablate urethral strictures. The study was approved by the institutional review board.

Study design, materials and methods

Sixty two males and one female 26-72 years old (51 spinal cord injured and 12 others including 4 post radical prostatectomy patients) had their strictures (1 to 4 cm long) ablated circumferentially, using contact Nd: YAG or HO: YAG laser. Strictured area was defined and a metal guide wire was left after dilating with filliform boogies. An initial urethrotomy was made at the 12 o'clock position by retrograde vaporization of the scarred tissue through the length of the stricture when a cystoscope could be passed to determine the extent of stricture and also define the external urethral sphincter. For Nd: YAG, 25-30 Watts and for HO: YAG.laser 15 to 22.5 Watts (1to1.5 J X 10 to15 Hz) were used. Urethral catheter was removed after 24 hours. During follow up about 6 weeks after surgery, a dilator was passed for calibration to monitor the size of the urethral strictured area and it was also visualized through linear array transrectal ultra sonography.

Results

The mean operation time was 32 minutes (range 15 to 57 minutes). No significant bleeding was encountered. Two earlier patients developed extravasations in the scrotum that were extensively vaporized posteriorly. Subsequently 6 o'clock vaporization was restricted to minimal. Patients have been followed from 2 to 9 years. (Mean 7.1 years). Repeat vaporization was required in 17% patients with 10% needing during the first year. Repeat vaporization was easy and the patients left the hospital within first 24 hour. During follow up cystoscopic examination and or transrectal linear array ultrasonography revealed almost normal urethra.

Interpretation of results

Careful circumferential vaporization of fibrous tissue without damaging the in between islands of normal urethra has resulted in restoring an unbelievable normal urethra.Careful optimal selection of the laser wattage is critical to prevent charring of the tissues which would impede normal healing.

Concluding message

For strictures of the urethra the success rate following the circumferential laser vaporization of the scar tissue is greater than the other reported techniques. It may be considered a minimally invasive procedure instead of repeated dilatation with resultant repeated bactremia, or stents which are difficult to remove, or open urethroplasty

<i>Specify source of funding or grant</i>	None
<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	Stanford IRB
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	No