



180 Watt Thulium laser vaporization of the prostate for BPH - safety and efficacy in 100 cases with up to 1 year follow up.

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Introduction

Laser procedures are now considered an alternative to TURP, potentially offering equal efficacy, lower early morbidity, and a shorter hospital stay.

Thulium lasers use a photo-thermal effect to rapidly ablate tissue with no deep necrosis. They are versatile, providing a choice of vaporisation (ThuVaP), vaporessection (ThuVaRP) or vapoenucleation (ThuVEP) techniques.

Thulium lasers offer rapid tissue removal with good haemostasis and no overshoot risk. They are user-friendly, and utilise cheap multiple-use fibres^{1,2,3}

Aim

Assess the safety and efficacy of Thulium Vaporisation of the Prostate (ThuVaP) using the 180Watt CyberTM generator in the treatment of bladder outlet obstruction due to benign prostatic hyperplasia in patients otherwise suitable for Transurethral Resection of the Prostate.

Methods

With Ethics Committee approval, ThuVaP was performed from July 2011 to November 2013 on 100 consecutive patients in a community urological practice who would otherwise be considered suitable for TURP for BPH. Clopidogrel or Coumadin were ceased. Patients with catheter dependent retention or obstructive uropathy were included. **There was no limitation on prostatic volume (largest 240 cc)** as measured by transrectal ultrasound. Laser energy was delivered by a CyberTM 180 Watt Thulium device using a Wolf 26 Fr. resectoscope and working element. **Catheters were typically removed the day of surgery, and patients generally discharged on the first postoperative day.** Patients were reviewed at 1, 6 and 12 months, and follow up to 1 year is complete in 66 patients (Average follow up 9.1 months)

Conclusions

Thulium laser vaporisation of the prostate is a safe and effective technique, even for patients with catheter dependent retention, obstructive uropathy, or with prostatic volumes up to 240 cc.

A modest learning curve for ThuVaP operative efficiency was observed, but there did not appear to be a learning curve for safety and other outcome measures.

Ongoing study is planned to assess the relative efficacy and durability of Thulium Vapo-Enucleation (ThuVEP) of the prostate versus ThuVaP in larger glands⁴.

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Results 100 Patients Includes 30 catheter-dependent or upper tract dilation

Operative	Average	Range
Age	71 years	49 – 93 years
Prostatic volume	85cc	27 – 240 cc
Operative time	75 min	20 – 157 min
Energy used	417 kJ	72 – 962 kJ
Time to ToV	8 hours	2-24 hours
Length of stay	1.1 days	0 – 3 days

Outcomes (Averages)	Pre-Op	1 month	6 months	12 months
IPSS	22.1	7.6	4.9	4.6
QoL	4.2	1.3	0.8	0.9
Q Max	8.1 ml/sec	-	19 ml/sec	-
PVR	170 ml	49 ml	-	-
PSA (median)	3.6	-	1.7 (-53%)	-

Complications – Early

- 3 recatheterisation for bleeding, all repeat TOV next day
- No transfusions
- No returns to theatre
- No ureteric or bladder injuries

Complications - Late

- 5 clot retention (2-3 weeks post op)
- 2 urethral stricture (simple dilation)
- 2 bladder neck contractions (BNI)
- 1 revision TURP (haematuria)
- 1 stress incontinence (50cc/ day)
- 1 high grade prostate cancer at 6/12

An improving “foot on the pedal” ratio from 60% to 72% (laser activated/ laser turned on time/case) was observed over the series. This implies a modest learning curve in operative efficiency.

References

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