

PREDICTIVE FACTORS OF URINARY INCONTINENCE AFTER GREENLIGHT® LASER ENUCLEATION OF THE PROSTATE (GREENLEP)

Hypothesis / aims of study

Post-operative, although it is most often transient, is usually regarded as a major drawback of endoscopic enucleation of the prostate. Several studies have aimed to assess de novo urinary incontinence and its predictors after Holmium Laser enucleation of the prostate. Greenlight® laser enucleation of the prostate (GreenLEP) has recently been described and has been shown as a promising way to perform endoscopic enucleation of the prostate. The aim of the current study was to assess de novo urinary incontinence after GreenLEP and to seek its predictors.

Study design, materials and methods

A retrospective multicenter international study was conducted including all GreenLEP performed by four surgeons at four institutions between 2011 and 2016. De novo urinary incontinence was defined by any postoperative urine leakage reported by the patient or by the use of any pads. Postoperative follow-up visits were scheduled at six weeks, three and six months after surgery with collection of the following data: IPSS, IPSS question 8, Qmax, PVR volume, IIEF-5, PSA levels and residual prostate volume measured by transrectal ultrasound. Continence status was assessed at each follow-up visits. Surgeon's experience was analysed as a continuous variable of consecutive cases performed. Univariate and multivariate logistic regression analyses were performed to seek predictive factors of post-operative urinary incontinence.

Results

Out of 416 patients included, 70 (17%), 32 (7.8%) and 12 (3%) had urinary incontinence at 1, 3 and 6 months respectively (figure 1). Most of these incontinences were scarce (median number of pads per day= 1). Physiotherapy from the first post-operative month appeared to enhance significantly continence recovery at 3 months in patients with post-operative urinary incontinence at 1 month (48% vs. 4.8% of continence recovery at 3 months in patients with and without physiotherapy; $p<0.001$). In univariate analysis considering only preoperative variables, prostate volume (OR=29.4; $p=0.005$) and surgeon's experience (OR=0.4; $p=0.05$) were the two predictors significantly associated with incontinence at 1 month. In multivariate analysis adjusting for age, ASA score, and surgeon's experience, prostate volume remained the only predictor of de novo incontinence (OR=26.4; $p=0.009$). When adding intraoperative and postoperative variables into the multivariate model, weight of specimen became the only predictor of urinary incontinence (OR:31; $p<0.0001$).

Interpretation of results

The strongest predictive factor of 1 month urinary incontinence is the quantity of prostate tissue removed which suggest an important role of prostate adenoma in the continence of male with larger glands and a change in continence mechanism postoperatively (main role goes back to striated sphincter) which could take several months. Another possible interpretation of this finding is that bigger prostates need wider excursions of the endoscope around the prostate and might stretch the sphincter.

Concluding message

De novo urinary incontinence is common after GreenLEP (17% at 1 month) but is transient in most cases (83% of incontinent patients had recovered at 6 months). The strongest predictive factor of 1 month urinary incontinence is the quantity of prostate tissue removed. Early physiotherapy may enhance recovery in patients who suffered from incontinence at 1 month.

Disclosures

Funding: none **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** Retrospective **Helsinki:** Yes **Informed Consent:** Yes