HoLEP Perioperative Outcomes Using Three Different Holmium Laser Technologies in a Community Hospital Setting

Michael Li
Lehigh Valley Health Network, Michael.Li@lvhn.org

Nicholas Russo BS
USF MCOM- LVHN Campus, nicholas.russo@lvhn.org

Alexis R. Brown PA-C
Lehigh Valley Health Network, Alexis_R.Brown@lvhn.org

James Johannes MD
Lehigh Valley Health Network, James_R.Johannes@lvhn.org

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HoLEP Perioperative Outcomes Using Three Different Holmium Laser Technologies in a Community Hospital Setting

Michael C. Li, MS, BS,[1,2] Nicholas W. Russo, BS,[1,2] Alexis Brown, PA-C,[2] James Johannes, MD[2]

[1]University of South Florida Morsani College of Medicine, [2]LVPG Urology

Introduction

Transurethral resection of the prostate is the gold standard treatment of Benign Prostatic Hyperplasia.[1]

Holmium laser enucleation of the prostate (HoLEP) has demonstrated superior perioperative and long-term outcomes.[2]

Recent advances in laser technology have improved treatment times, hemostasis, and length of stay.[3,4]

Moses technology is optimized for soft tissue ablation and hemostasis, with Moses Enucleation of the Prostate employing optimized Moses bubble technology for soft tissue ablation.

We examined the perioperative outcomes of three generations of lasers: Traditional 100W HoLEP, Moses Pulse 120H (Moses 120), and Moses Enucleation of the Prostate (MoLEP).

Methods

HoLEP was performed by a single surgeon in 140 patients using the Traditional 100W HoLEP, Moses 120, and MoLEP with a modified two-lobe technique.

We performed a retrospective review of our prospectively collected database of 140 consecutive traditional 100W HoLEP, Moses Pulse 120H (Moses 120), and Moses Enucleation of the Prostate (MoLEP) from a single provider.

Patients were managed via same post-operative care pathway at a community hospital.

Patients were discharged home when clinically appropriate.

Pre-operative, peri-operative, and post-operative outcomes (IPSS, PVR, Qmax, Operative Time, Length of Stay (LOS), thirty-day readmissions) were assessed via chart review.

Patients were excluded if they underwent resection before the post-operative care pathway was standardized at a community hospital.

Results

Patient characteristics and preoperative values were similar between cohorts regarding age, prostate volume, IPSS, Qmax, and PVR.

MoLEP patients had a decreased total length of surgery versus HoLEP and Moses 120: 64 minutes versus 77 minutes and 78 minutes, respectively ($p = 0.03$).

MoLEP patients had a decreased resection time versus HoLEP and Moses 120: 43 minutes versus 54 minutes and 50 minutes, respectively ($p = 0.019$).

MoLEP patients experienced a decreased LOS versus HoLEP and Moses 120: 10 hours versus 14 hours and 13 hours, respectively.

MoLEP patients had an increased same-day discharge percentage versus HoLEP and Moses 120: 88% versus 78% and 73%, respectively.

Thirty-day readmission was highest in the Traditional 100W HoLEP cohort at 4, with 2 requiring reoperation for genitourinary cause.

Thirty-day readmissions for Moses 120 and MoLEP were 1 and 2 respectively, with 1 from each necessitating reoperation.

All returns to operation were due to hematuria.

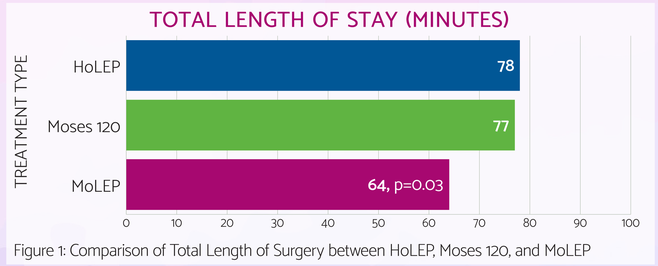

Figure 1: Comparison of Total Length of Surgery between HoLEP, Moses 120, and MoLEP

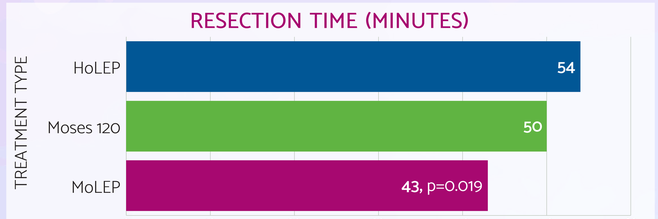

Figure 2: Comparison of Resection Time between HoLEP, Moses 120, and MoLEP

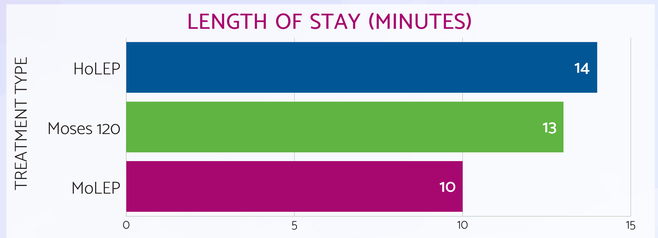

Figure 3: Comparison of Length of Stay between HoLEP, Moses 120, and MoLEP

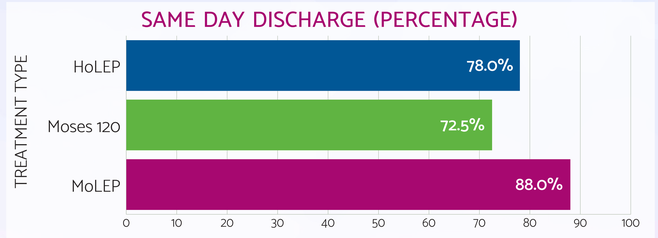

Figure 4: Comparison of Same-Day Discharge Percentage between HoLEP, Moses 120, and MoLEP

Conclusions

MoLEP demonstrated superior outcomes, including shorter operative times and a higher percentage of patients discharged same-day compared to Traditional 100W HoLEP and Moses 120.

Additionally, readmissions were decreased in Moses 120 and MoLEP when compared with Traditional 100W HoLEP.

This is prospective evidence HoLEP using MoLEP improves healthcare outcomes over other holmium laser technology by reducing readmissions.

In addition, Moses technology also improves efficiency of surgical BPH treatment by reducing resection times.

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