

MiLEP Minimally Invasive Laser Enucleation of the Prostate

acc. to Dr. Felipe C. A. de Figueiredo



Benign Prostatic Hyperplasia

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MILEP SYSTEM

Holmium laser prostate surgery is a minimally invasive treatment for Benign Prostate Hyperplasia (BPH). The holmium laser enucleation of the prostate (HoLEP) uses a laser resectoscope to enucleate the prostate tissue that is blocking urine flow. A morcellator which passes through the morcescope is then used to cut the prostate and remove the adenoma.

As with other types of prostate laser surgery, HoLEP can offer faster recovery, less risk of bleeding and transfusion and better symptom relief compared to traditional prostate surgery.

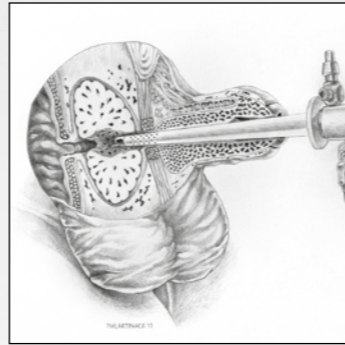


HoLEP has proven itself to be the new gold standard in surgical treatment for LUTS secondary to BPH with the ability to endoscopically treat prostates independent of size, with durable long term outcomes

K. Akhil et al 2020 (*)

Holmium laser enucleation of the prostate (HoLEP) is a minimally invasive and size-independent treatment for benign prostatic hyperplasia with excellent long-term surgical outcome

F. Figueiredo et al 2020 (**)



Ergonomic design



Quick lock mechanism



Ø 5mm working channel compatible to blades of:
- Wolf
- Lumenis
- Storz
- Dornier



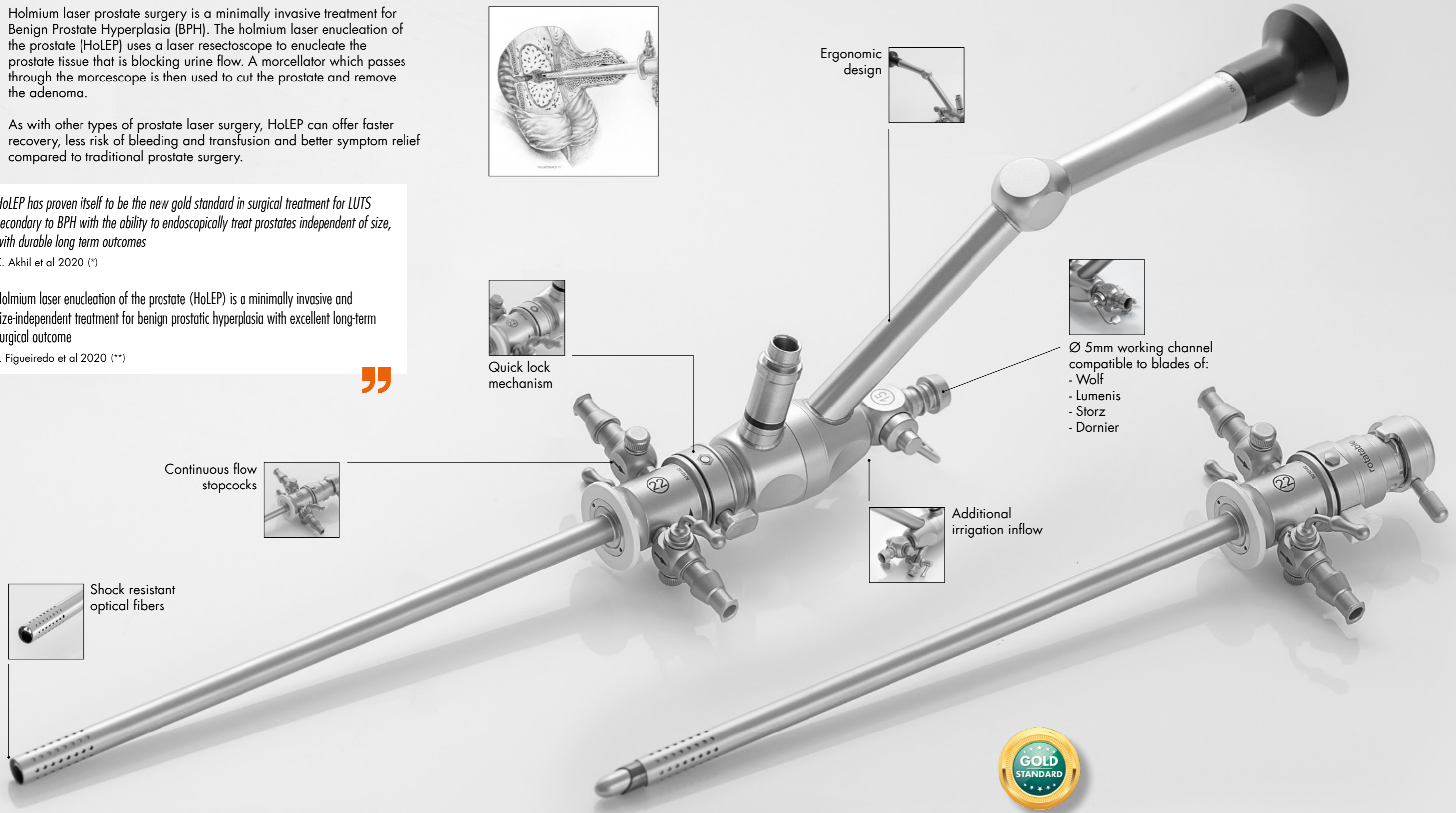
Continuous flow stopcocks



Additional irrigation inflow



Shock resistant optical fibers



Endoscopic laser enucleation has become the golden standard for treatment of BPH for glands > 80g.

To improve the functional outcome and reduce the risk of postoperative side effects as injury of the urethra and urinary incontinence, RZ has developed a slim HoLEP instrument set in 22 Charr. outer diameter for Laser Enucleation and Morcellation.

(*) Holmium laser enucleation of the prostate (HoLEP): size-independent gold standard for surgical management of benign prostatic hyperplasia
Das K. Akhil, Han M. Timothy, Hardacker J. Thomas, Department of Urology, Thomas Jefferson University, Philadelphia, Pennsylvania, USA
Can J Urol Aug 2020 (Vol. 27, Issue 43, Pages (44 - 50)

(**) Holmium laser enucleation of the prostate: Problem-based evolution of the technique
Felipe Carvalho Antunes de Figueiredo, Cecilia Maria Crocco , Rodrigo Loureiro de Marins, Cesare Marco Scoffone
Andrologia 2020 Sep;52(8):e13582. doi: 10.1111/and.13582. Epub 2020 Apr 8.



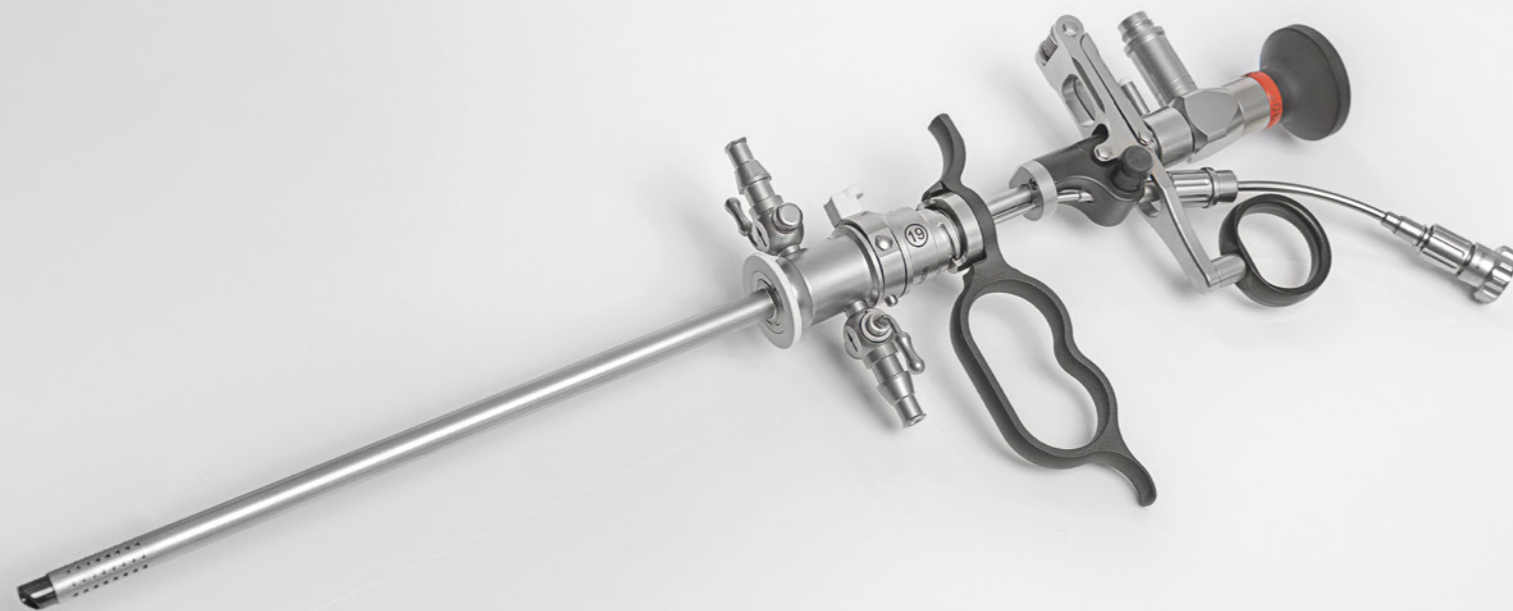
1
STEP

**LASER
ENUCLEATION**

slim HoLEP Laser Resectoscope
according to Dr. Felipe C. A. de Figueiredo

Slim HoLEP with 22 Charr. outer diameter provides the smallest resectoscope you can use with the same shaft as with a morcescope.

- Working element based on standard resectoscope design
- 2.9mm scope diameter
- Compatible for HoLEP and ThuLEP for fibers up to 1.2mm
- Rotatable sheath with continuous flow



2
STEP

**TISSUE
MORCELLATION**

slim HoLEP Morcescope
according to Dr. Felipe C. A. de Figueiredo

The smallest 22 Charr. Morcescope reduces the risk of surgical side effects such as urethral damage and complications like dysuria and urethral strictures. After Laser Enucleation, the Morcescope and Morcelator can be used with the same sheath of the slim resectoscope which avoids any additional traumatization of the urethra.

- High picture quality
- High flow irrigation channel plus additional irrigation port
- Compatible with Morcellators of R. Wolf, Lumenis, Karl Storz and Dornier
- Shock resistant optical fibers - longer lifetime



de Figueiredo



ultra slim HoLEP₊ **LASER ENUCLEATION SYSTEM** according to Dr. Felipe C. A. de Figueiredo

As an alternative to the 22 Charr. system, the 18.5 Charr. resectoscope with laser working element is the smallest available system for prostate enucleation. It features a rotatable continuous-flow design and a 0.8 mm laser channel. It allows minimal trauma to the urethra and the sphincteric mucosa during the enucleation movements which reduce the risk of dysuria, strictures and urinary incontinence. It is ideal for smaller glands (<80g) and Transurethral Incision of the Prostate with Holmium (TUIP).

- Working element based on standard resectoscope design
- 2.9mm scope diameter
- Rotatable sheath with continuous flow

*Minimal Invasive Laser Enucleation of Prostate (MiLEP) using smaller endoscopes is safe and technically feasible and deserves further exploration.**



18.5
CHARR.

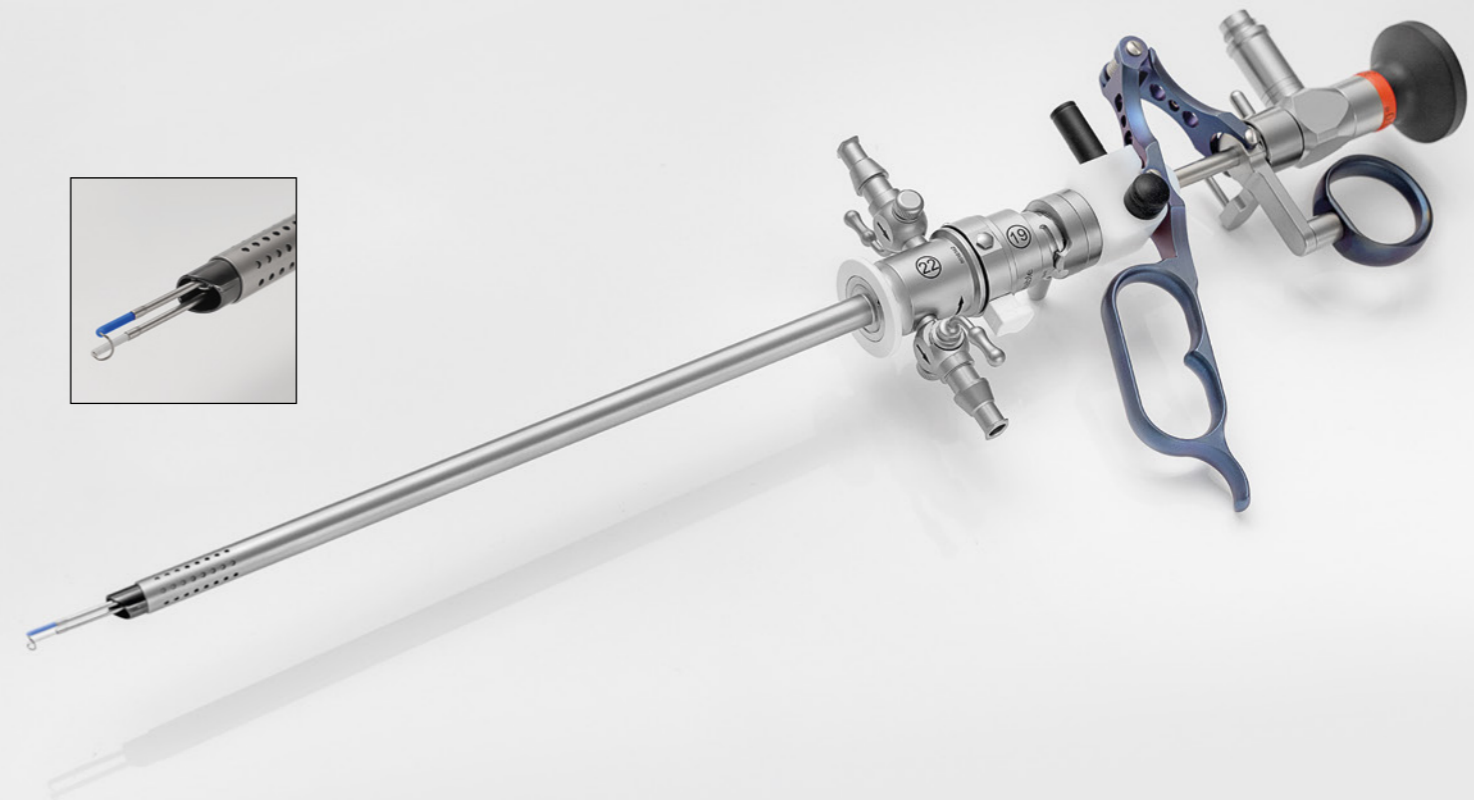
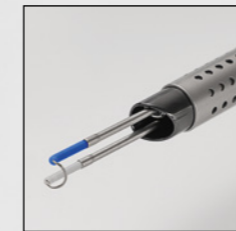
(* Urology Video Journal: Minimally invasive Laser Enucleation of the prostate (MiLEP): Slim (22Ch) and UltraSlim (18.5Ch) HoLEP
Dr. Felipe Figueiredo, MD, Pompeia Hospital, Caxias do Sul, RS BRAZIL

slim HoLEP₊ **HYBRID RESECTOSCOPE**

After finishing the enucleation and pushing the adenoma into the bladder, hemostasis is performed with a bipolar electrode. An appropriate hemostasis will assure perfect visualization during morcellation and will avoid a post-operative bleed.

The 22 Charr Hybrid resectoscope can be used with the same 22 Charr outer sheath as the slim laser resectoscope or the Morcscope to complete the slim HoLEP system.

- Hybrid resectoscope can as either used monopolar or bipolar
- Available with active or passive working element
- Titanium handle
- Compatible to the slim HoLEP Set



22
CHARR.

HIGH-FLOW / METAL SHEATH – available for Laser Resectoscope 22 Charr. and 18.5 Charr.

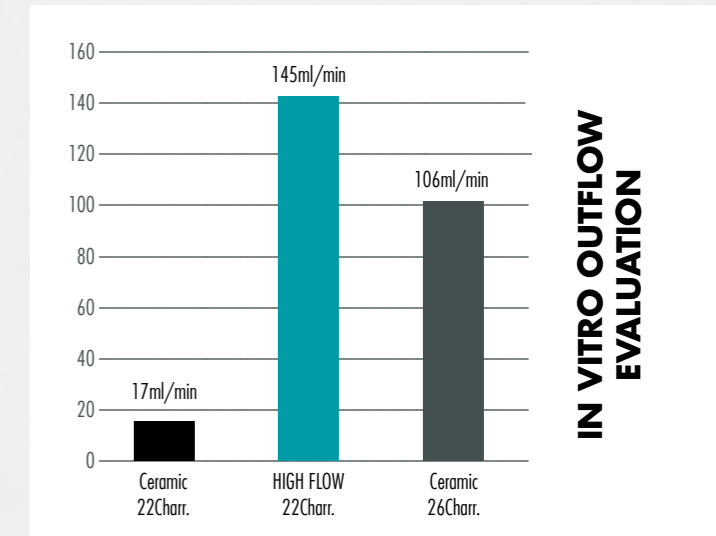
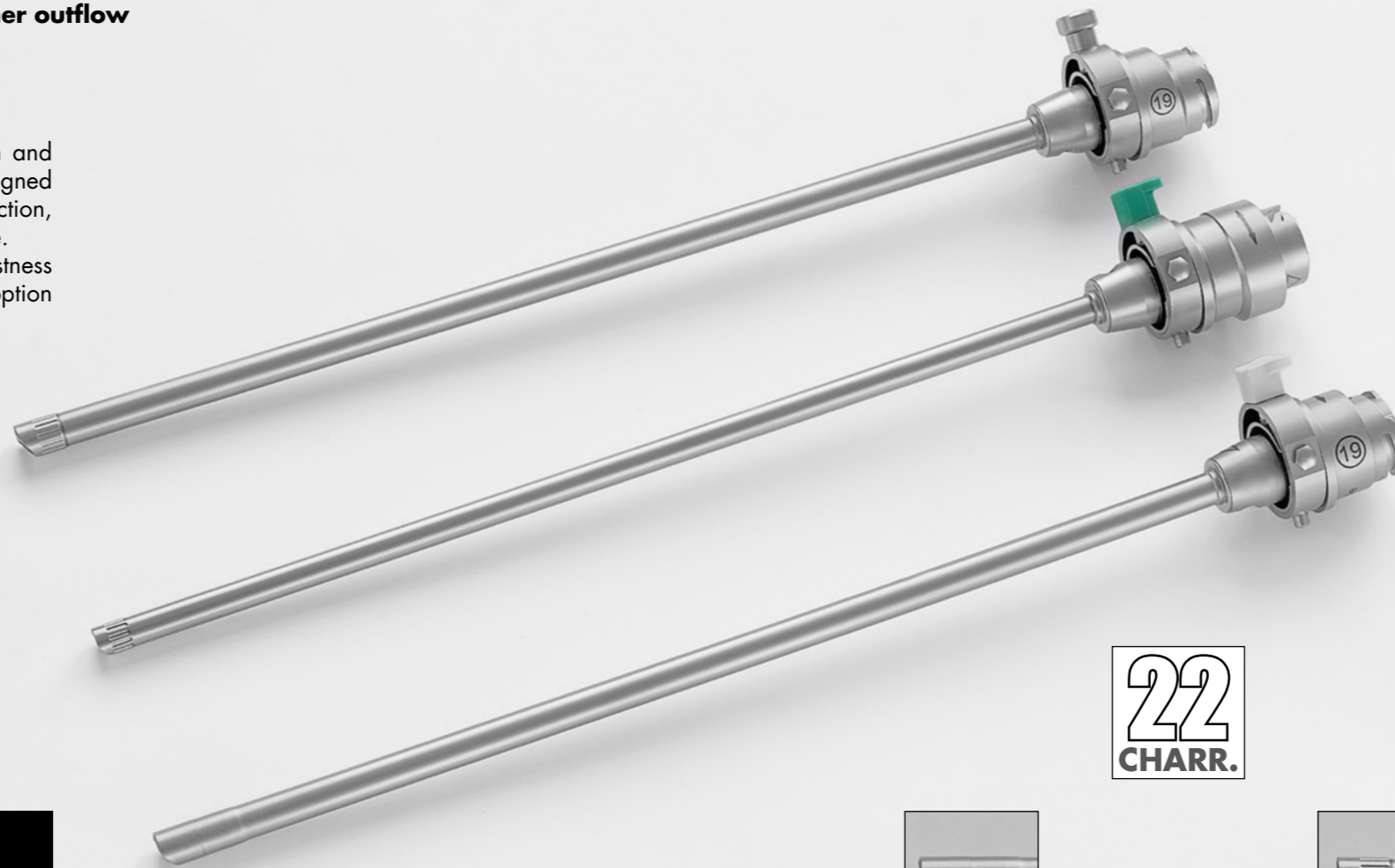
Improved inner sheath in metal designed for higher outflow and clearer view during laser enucleation

A clearer view through improved outflow

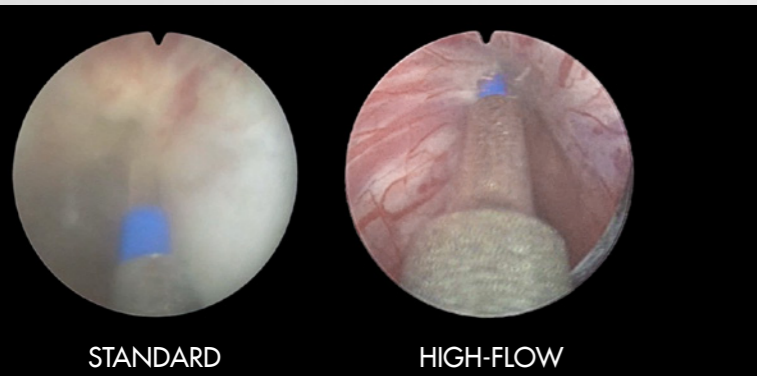
In laser enucleation, visibility depends on stable irrigation and efficient outflow. The new High-Flow inner sheath is designed to support a clearer endoscopic field during laser resection, particularly during initial apical dissection and early release. All versions feature a metallic distal tip for increased robustness in case of unintended laser contact, and a standard-flow option is also available.

High flow Inner Sheath available in two sizes

- **22 Charr.** High-Flow Metal for slim HoLEP
- **18.5 Charr.** High-Flow Metal for ultra slim HoLEP
- **22 Charr.** Standard Metal for slim HoLEP



Internal Data



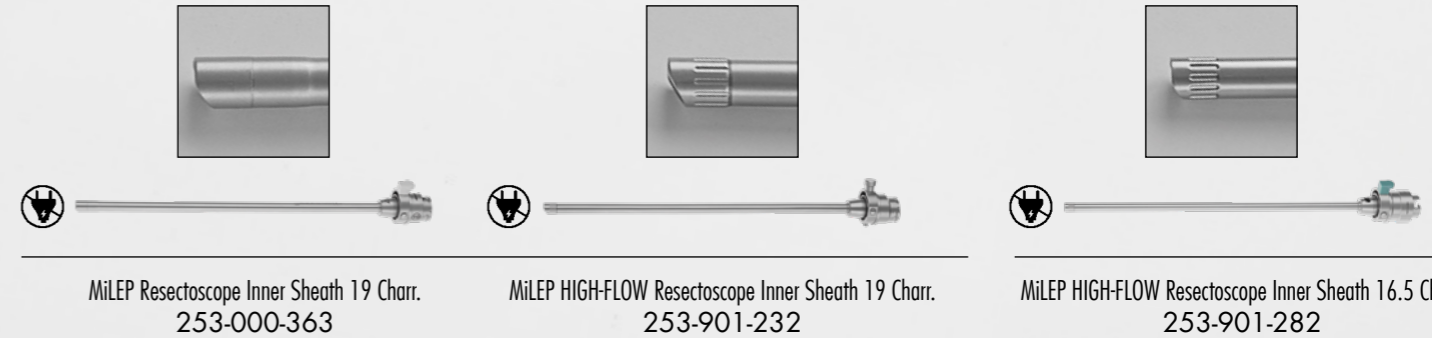
Slim HoLEP in Vivo evaluation Dr. Patrick Rein - Switzerland

BENEFITS

- + Better outflow
- + More stable continuous flow
- + Better view
- + Supports controlled dissection
- + Robust distal tip

**22
CHARR.**

**18.5
CHARR.**

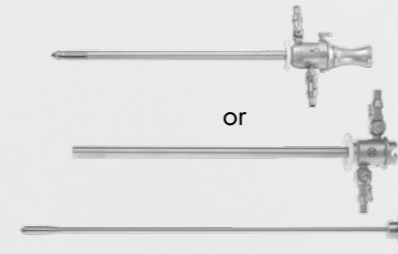


MiLEP Resectoscope Inner Sheath 19 Charr.
253-000-363

MiLEP HIGH-FLOW Resectoscope Inner Sheath 19 Charr.
253-901-232

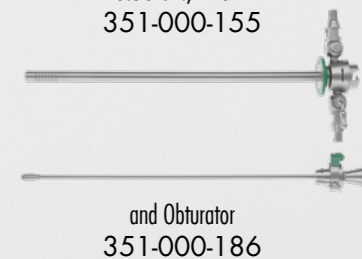
MiLEP HIGH-FLOW Resectoscope Inner Sheath 16.5 Charr.
253-901-282

compatible with:
FELIPE Continuous Flow Sheath
22Charr., 220mm
253-901-220



Continuous Flow outer Sheath, Rotatable 22 Charr., 220mm and Obturator
253-000-352 + 253-000-555

compatible with:
Continuous Flow Outer Sheath
18.5Charr., 220mm
351-000-155



and Obturator
351-000-186



slim HoLEP_k **LASER RESECTOSCOPE**
according to Dr. Felipe C. A. de Figueiredo

	RZ Rod Lens Cystoscope, autoclavable, Ø 2.9mm	253-829-030 30° 253-829-012 12°
	RZ Laser Working Element, passive	253-000-319 for fibres up to 0.8mm 253-000-316 for fibres up to 1.2mm
	Resectoscope Sheath 22 Charr., rotating inner tube for continuous suction / irrigation	253-000-352
	Visual Obturator, 22 Charr.	253-000-082
	RZ LL-Connection, rotatable for use with Laser Probe	253-000-302 (long) 253-000-301 (short)
	Luer-Lock Tuohy Borst Adapter (Ø 0.6 - 1.4mm)	300-011-184
	Morcescope, 22 Charr., 220mm working length, 5mm working channel	253-905-220
	Sealing Cap for Morcescope, with membrane to puncture through, package of 10 pieces	253-904-220









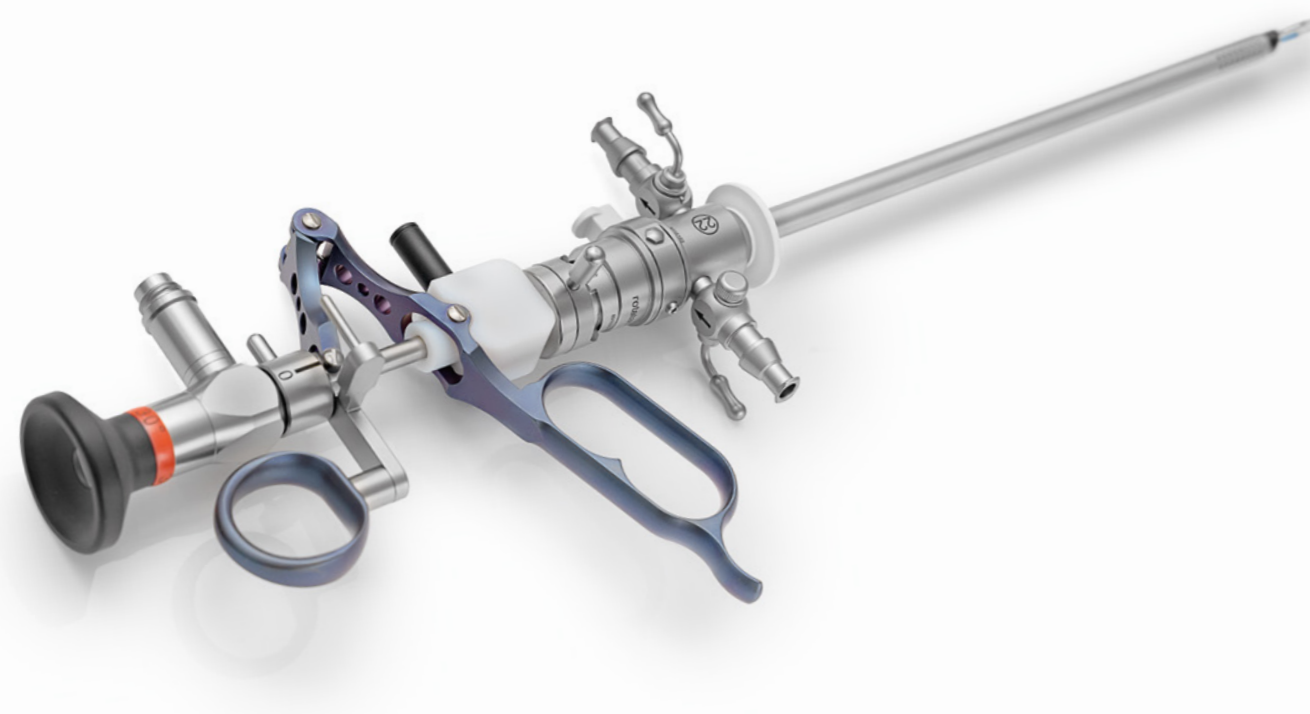
ultra slim HoLEP_k **LASER ENUCLEATION SYSTEM**
according to Dr. Felipe C. A. de Figueiredo

	RZ Rod Lens Cystoscope, autoclavable, Ø 2.9mm	253-829-030 30° 253-829-012 12°
	RZ Laser Working Element, passive for fibres up to 0.8mm	253-000-318 with push button
	Resectoscope Continuous Flow Sheath, 18.5 Charr., with rotating sheath, incl. obturator, with QuickLock	351-000-185
	Visual Obturator	351-000-180
	RZ LL-Connection, rotatable for use with Laser Probe	253-000-302 (long) 253-000-301 (short)
	Luer-Lock Tuohy Borst Adapter (Ø 0.6 - 1.4mm)	300-011-184
	Morcescope, 22 Charr., 220mm working length, 5mm working channel	253-905-220
	Continuous Flow Sheath, 22 Charr., 220mm working length, 2 way stopcock, quicklock, with Obturator	253-901-220
	Sealing Cap for Morcescope, with membrane to puncture through, package of 10 pieces	253-904-220

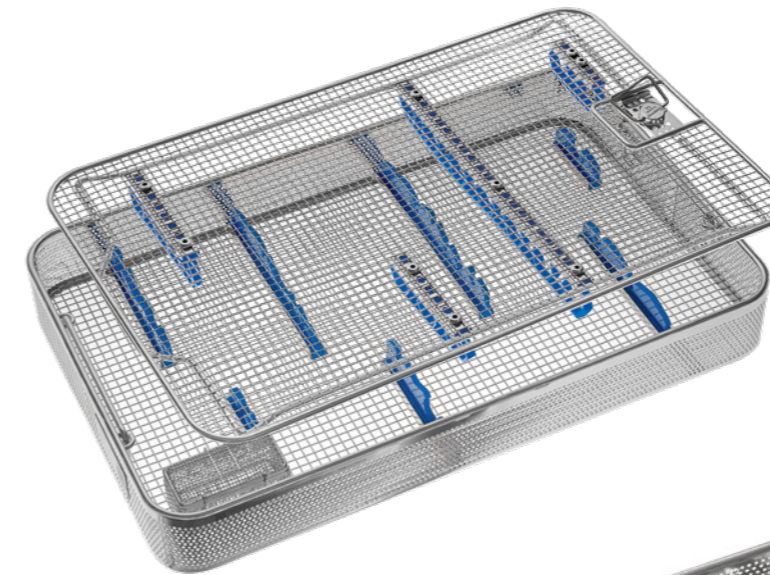


slim HoLEP_k 22 CHARR. HYBRID RESECTOSCOPE SET

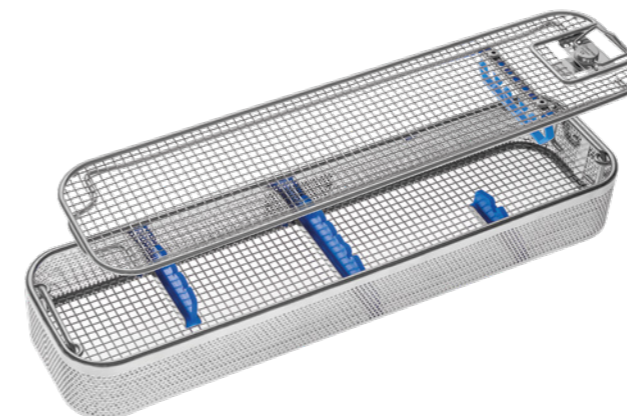
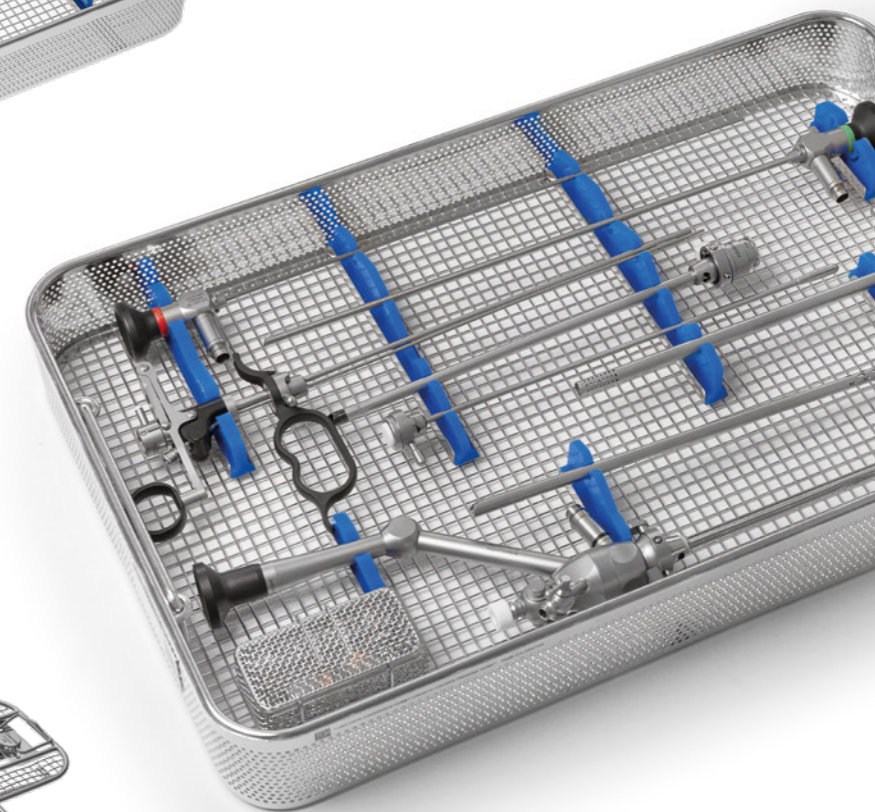
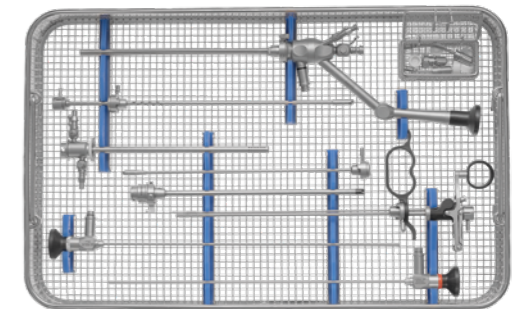
	RZ Working Element, passive	253-000-410
	RZ Working Element, active	253-000-411
	Loop Electrode, 30° angled	253-000-541
	Roller Electrode, Ø 3mm	253-000-547
	Ball Electrode	253-000-545
	Knife Electrode	253-000-543



TRAY AND SET

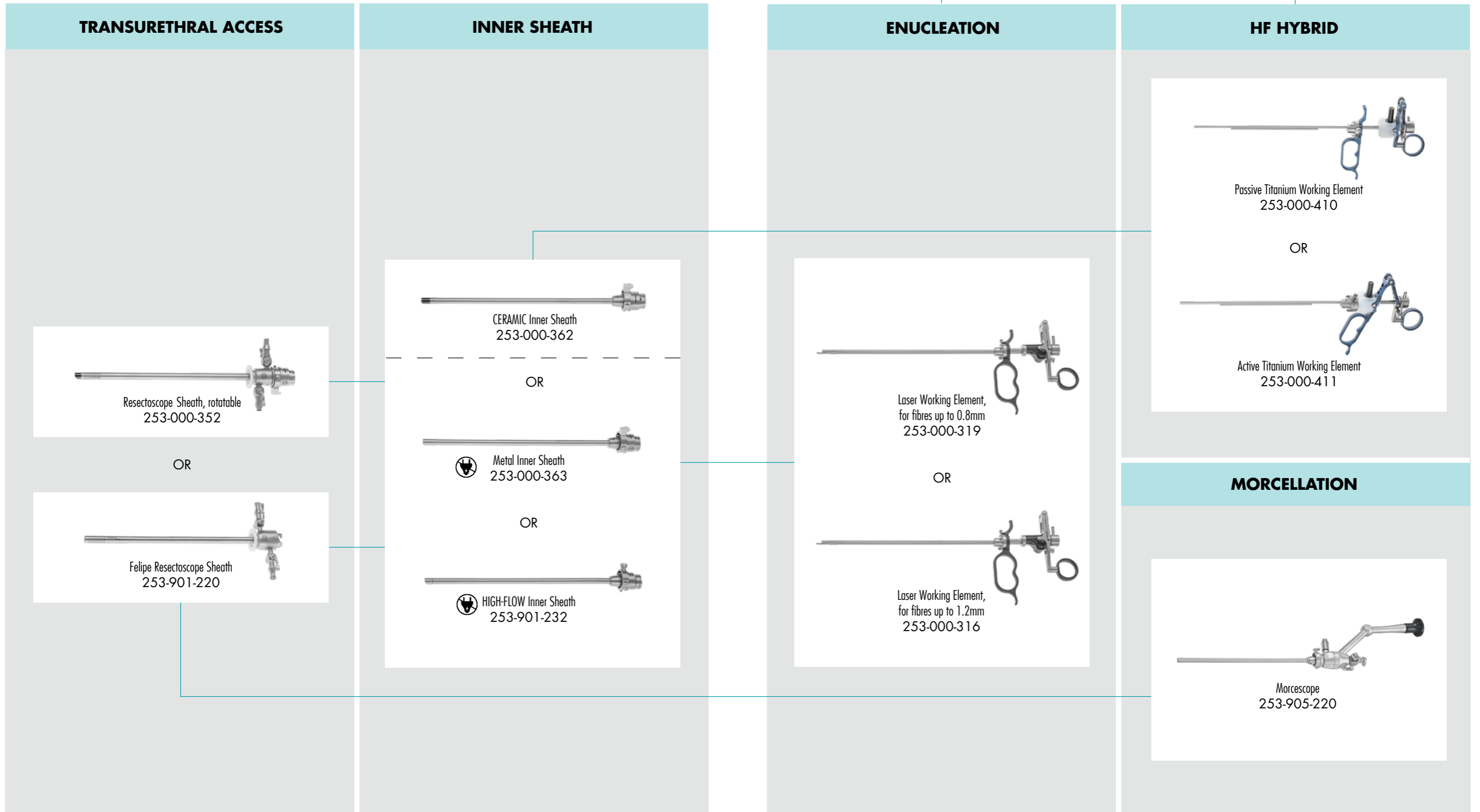


600-605-220 MilEP Wire Basket
480 x 300 x 60mm

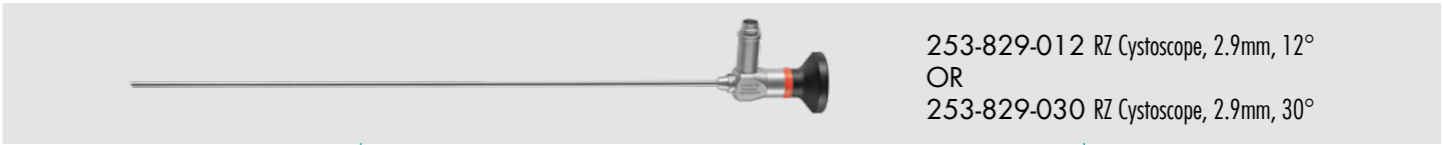
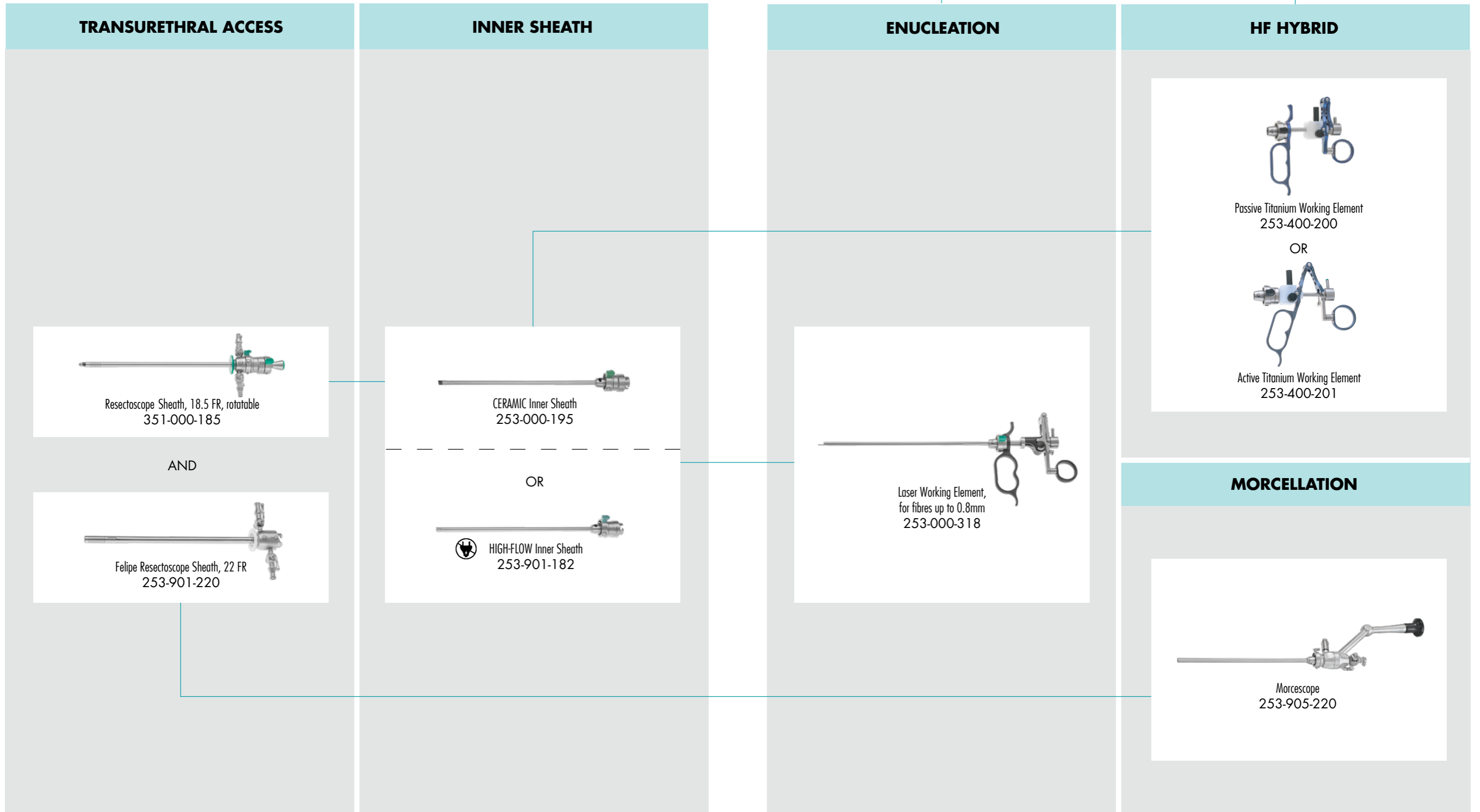


600-605-411 Wire basket for 22 Charr. Resectoscope & Electrodes
480 x 125 x 60mm





18.5
CHARR.



LATEST RELEVANT PUBLICATIONS

- Minimally Invasive Holmium Laser Enucleation of the Prostate (MiLEP) Vs. HoLEP: Retrospective Analysis of Perioperative Outcomes in a Propensity Score-Matched Cohort
Jacob Schmidt, Bernhard Ralla, Andreas Maxeiner, Jorien Krediet, Holger Beutel, Ayoub Hidayat Allah, Nella Gagel, Henning Plage, Maha Ullmann, Robert Peters, Frank Friedersdorff, Martin Kanne
▪ The Prostate - October 2025

Conclusions:
Implementation of MiLEP is safe and feasible in a center with HoLEP experience, demonstrating comparable perioperative outcomes. The miniaturized approach maintains surgical efficiency across different prostate sizes while reducing instrument size. Further studies are necessary to evaluate long-term functional outcomes and confirm the potential benefits of MiLEP regarding urethral trauma.

- Lessons learned from our preliminary experience with MiLEP: a retrospective analysis of efficacy and safety using slim and ultra-slim instruments
Patrick Rein, Christina Meisl, Orlando Burkardt, Dominik Abt
▪ World Journal of Urology - 09 July 2025

Conclusions:
MiLEP using Slim and Ultra-Slim instruments provides a safe and effective alternative to standard HoLEP (≥ 26 Fr), demonstrating favorable postoperative continence and a low complication profile. The findings suggest potential benefits of miniaturized instruments in reducing urethral trauma while maintaining enucleation efficiency. Further prospective studies are warranted to validate these results and explore long-term outcomes.

- Mini-HoLEP (MiLEP) vs HoLEP: a propensity score-matched analysis
Tarek Taha, Ziv Savin, Karin Lifshitz, Yotam Veredgorn, Tomer Mendelson, Yuval Bar-Yosef, Ofer Yossepowitch, Mario Sofer
▪ World Journal of Urology - 25 August 2023

Conclusions:
MiLEP is feasible and provides better maintenance of body core temperature, reduction in amount of fluid irrigation, and decrease in need for meatal dilation without affecting effectiveness in comparison with HoLEP. MiLEP may reduce early postoperative stress incontinence, thereby shortening the recovery period.

- Minimally Invasive Laser Enucleation of the Prostate (MiLEP): Slim (22Ch) and Ultra Slim (18.5Ch) HoLEP
Felipe Carvalho Antunes de Figueiredo, Patrick Ely Teloken
▪ Urology Video Journal - Volume 14, June 2022,

Conclusions:
Minimally Invasive Laser Enucleation of the Prostate (MiLEP) using smaller endoscopes is technically feasible and deserves further exploration.

MiLEP PROCEDURE VIDEO





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