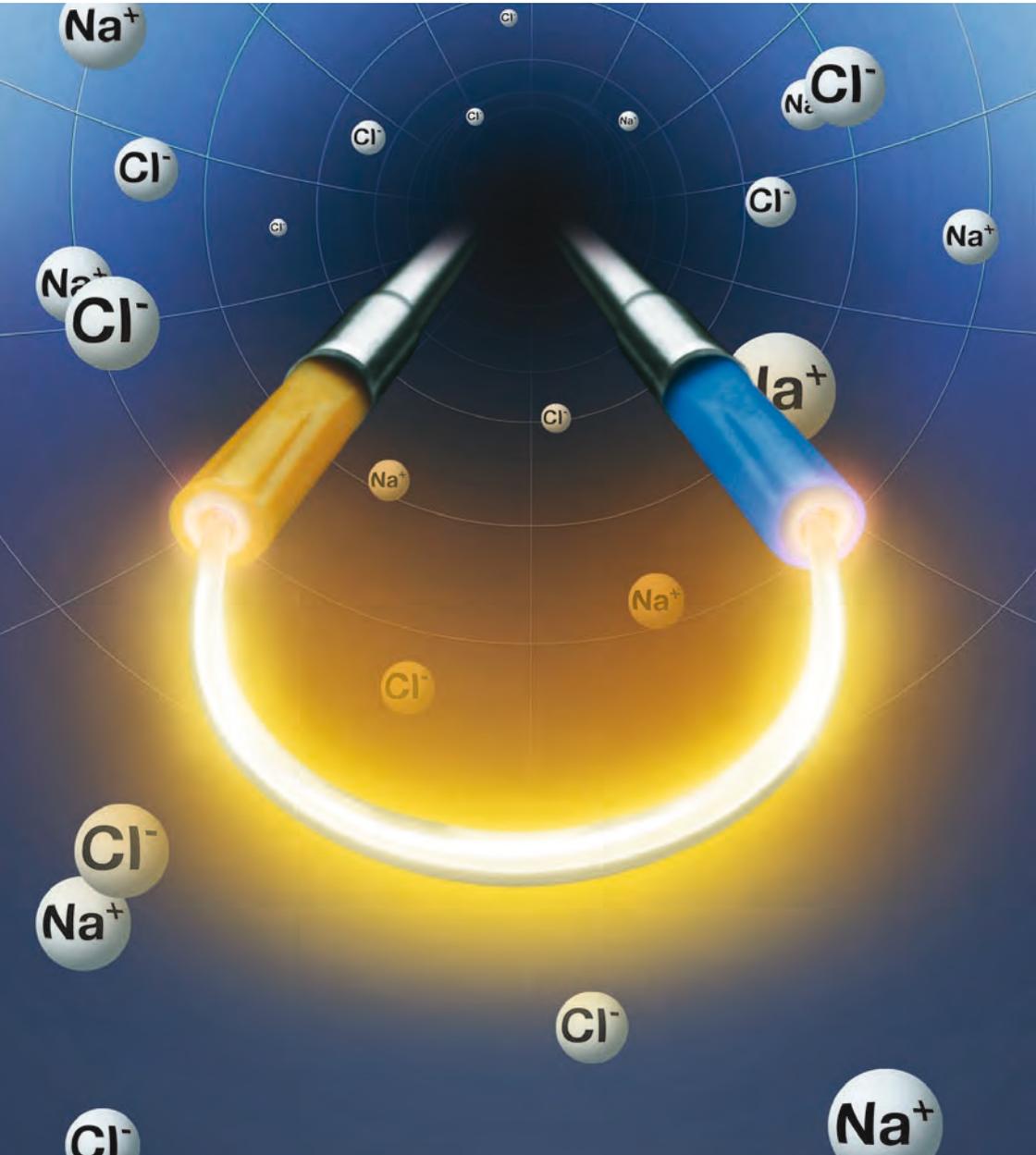


Recommended Instrument Set





Dr. med. Jörg Raßler
Leipzig, Germany

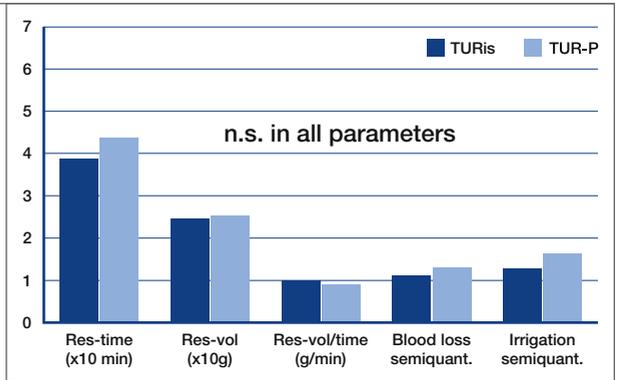
INTRO

Monopolar TUR has been the gold standard for treatment of benign hyperplasia of the prostate (BPH) as well as the diagnostic and therapeutic resection of localized bladder tumors. It relies heavily on the cutting and hemostatic effect of high frequency currents. Nevertheless, there have also been some drawbacks associated with the use of monopolar HF currents; patient safety being the most discussed. The distance between the active electrode and patient plate results in long current paths through the human body causing reactions of neural and muscular structures, undesirable scarifications such as bladder neck contractions and urethral strictures, and thermal damage of the resected specimens and the intracorporeal tissue.

TURis Technology

TURis – Transurethral Resection in Saline, is a new resection system, where the current flows from the loop (the active electrode) to the loop tube and the resectoscope itself. A conductive medium (e.g. saline) must be used in order to shorten the current paths, which dramatically reduces the volume of tissue penetrated by monopolar HF currents. It is noteworthy that in this respect saline is synergistic with the bipolar technique. Isotonic saline is the perfect choice of an irrigation fluid because it reduces the chances of TUR syndrome. Resection of the tissue is actually performed through the creation of a plasma corona utilizing a controlled energy peak of about 300 Watts around the electrode.

Randomized prospective trial comparing TURis and conventional TUR-P (clinical follow up: 12 months)



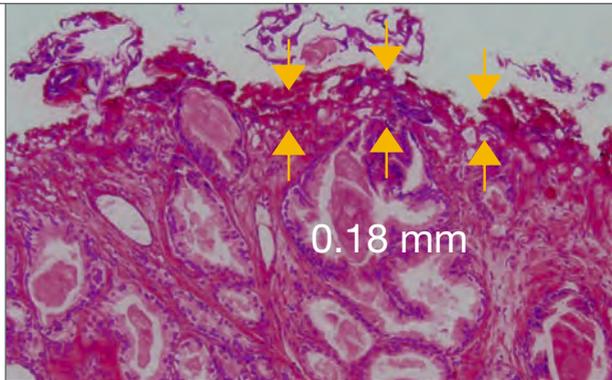
To ignite the plasma, saline surrounding the loop has to be heated. In the initial phase, the electrode is covered with small bubbles. These bubbles fuse, so that the entire loop is encapsulated by a vapor pocket, and no more gas is being produced. At this point, the generator increases its output voltage to keep the released power constant. When the vapor exceeds a critical threshold, a controlled discharge (similar to lightning) causes ignition of homogeneous plasma. The electrode is then totally covered by plasma. The output voltage automatically decreases to a level similar to monopolar TUR.

The resectoscope itself is fully modular. Its components are compatible with the monopolar Olympus OES Pro line-up. For resections in saline, only a specific working element, special electrodes and HF cables are required.

TURis study

In the Dept. of Urology at the St. Elisabeth-Hospital Leipzig we have routinely used the bipolar, Resection in Saline technique for more than three years, combining the Olympus OES Pro resectoscope and the SurgMaster UES-40. We also tested this special resection system at various development stages as well as other bipolar systems. To quantitatively assess the advantages of the Resection in Saline technique, we performed from 2004 to 2005 a prospective randomized trial which included 200 BPH patients. Bipolar

Histologic specimen of TURis procedure, showing minimal thermal destruction of prostate tissue.



resection using the commercial Olympus resectoscope system and SurgMaster electro-surgical generator was applied to 96 patients. Conventional monopolar TUR was carried out in 104 patients. The results of this study confirmed our previous experience.

TURis study results

Recent studies have demonstrated that novel resection techniques, video TUR and micro-processor-controlled electro-surgical units dramatically reduced the complication rate of conventional TUR. This is reflected by a low postoperative morbidity rate, transfusion rate and incidence of TUR syndrome with less than 1 % for each. Our study revealed that TURis resection yields similar results. With respect to these parameters, the outcome of TUR and Resection in Saline groups was not significantly different. The resection rate was in the same range as with conventional TUR despite a smaller resection loop in the TURis procedure.

Additionally, we observed a number of remarkable advantages of the bipolar system. As the current flow through the surrounding tissue was only minimal, nerve stimulation or muscular contraction was almost completely absent. This was particularly important in preserving the internal sphincter function as well as in the resection of bladder tumors, where obturator nerve stimulation



was extremely rare. In TURis, a patient plate is not required. The application of this bipolar-like current is particularly appropriate for patients with cardiac pacemakers.

The resected specimens showed only minimal coagulated zones (0.18 mm on average; TURis Plasma Vaporization 0.20 mm on average). This value compares favorably with monopolar techniques using extremely thin resection loops. With monopolar vaporization electrodes, the width of the coagulated zones was doubled (0.38 mm on average). The TURis cutting effect is very smooth without carbonization and tissue clotting of the loop. The postoperative urge syndrome occurred less frequently and was less pronounced with the bipolar technique. This is to be confirmed in future studies. Meanwhile, both the working element of the resectoscope and the software for the SurgMaster generator have been improved in enhancing more rapid plasma ignition, even in dry or precoagulated tissue. The use of preheated saline is not mandatory anymore.

Version 2.0
Rapid Plasma
Ignition

Conclusion

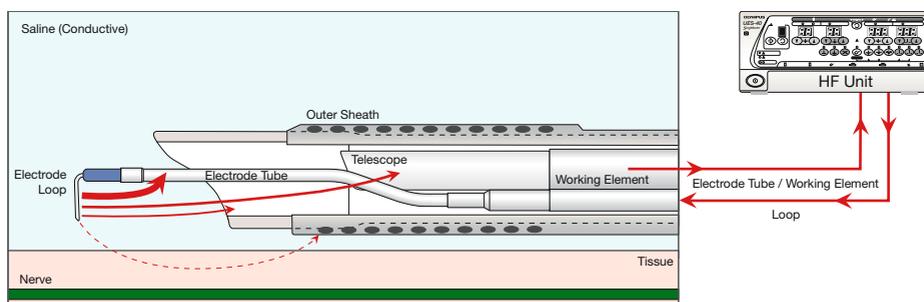
In my opinion, the development of the Olympus Resection in Saline/TURis resectoscope system is a logical step forward in technology. As previously witnessed, many of the open and laparoscopic electrosurgical procedures have been converted from a monopolar to a bipolar technology. Due to minimal effect to the surrounding tissue and avoidance of nerve and muscle irritation, TURis will become widely accepted. It can also be applied to sensitive tissues and organs that are not appropriate for monopolar electrosurgical procedures to date.

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mailto: urologie@ek-leipzig.de

WORKING PRINCIPLE OF TURis RESECTOSCOPE

The electrical current mainly flows directly from the electrode loop to the electrode tube as the electrical impedance of the surrounding saline solution is significantly lower compared to the human tissue (1:10).

TURis Safety Concept



Current flow chart of the TURis system, offering advantages over conventional monopolar devices. The current flow is locally limited and in comparison to the monopolar technique the leakage current is reduced by 70 %. A patient plate is not required and there is a reduced risk of obturator nerve stimulation, due to the bipolar design.

Recommended TURis Settings:

ELECTRODE	CUTTING [CUT-PURE]	COAGULATION [COAG 1]
Loop (small/medium)	280–320 W	120–140 W
Loop (large)	290–320 W	120–140 W
Band	290–320 W	150–180 W
Roller ball	0 W	150–180 W
Needle	200 W	60 W
Plasma Vaporisation	290–320 W	150–180 W

Note: The cutting power settings only apply during plasma ignition and then immediately reduce to standard TUR level.

BENEFITS OF TURis



Safety:

Reduced risk of TUR syndrome, due to the use of saline



Precision:

Clean and precise cutting and coagulation, especially beneficial during TUR-BT



Simplicity:

No need for patient plate



Patient safety:

Minimized stimulation of obturator nerve (nerve block or relaxation is not necessary) due to “bipolar” technology



Time saving:

Self-cleaning effect of loop-wire when plasma is activated, saves cleaning time



One for all:

One HF generator (UES-40) for virtually all HF applications: Monopolar, Bipolar, Urology, Gynecology and General Surgery



Proven technology:

Three years of proven effectiveness and experience in the market, with more than 100,000 clinical cases



Bloodless TUR:

Virtual bloodless treatment possible through latest plasma technology

Version 2.0
Rapid Plasma
Ignition

THE ENDOSCOPY TOWER

Components/ Devices

Olympus peripheral equipment for advanced endoscopic procedures:



Monitor – OEV191H

Full digital HDTV high-resolution images with stable, flicker-free image quality



EXERA II Video System Center CV-180

EXERA II is the first video platform introducing 1080i HDTV to all fields of endoscopic imaging



Light Source – CLV-180

The high-quality 300 W xenon lamp provides illumination ideal for endoscopy, allowing observation in deep sites or advanced techniques with standard and high intensity mode



HF Unit – UES-40 Surgmaster

The Olympus UES-40 SurgMaster – one generator for virtually any electro-surgical need



NBI (Narrow Band Imaging) to enhance the visibility of capillaries and other structures on the mucosal surface.



Compatible with PDD
(Photo Dynamic Diagnosis)

RECOMMENDED SET FOR TURis

TURis Resectoscope



	Instrument name	std.	opt.
A22001A	Telescope, 4 mm, autoclavable, 12° direction of view	X	
A22002A	Telescope, 4 mm, autoclavable, 30° direction of view		X
WA22366A	Working element, active	X	
WA22367A	Working element, passive		X
A22040A	Inner sheath, incl. standard obturator (A22081A)	X	
A22026A	Outer sheath, 26 Fr. 2 stopcocks, rotatable	X	
A22041A	Resection sheath, 24 Fr. incl. standard obturator (A22081A)		X
A22051A	Irrigation port, for resection sheaths, 1 stopcock, rotatable		X
A22071A	Obturator, optical		X

- The OES Pro Resectoscope for TURis – Resection in Saline: The TURis Resectoscope is designed with convenience and comfort in mind. The placement of key connections makes it extremely well balanced, and the finger spread on the working element is reduced for less fatigue. In addition, the new high precision working element reduces friction force to a minimum and allows for an extremely smooth cutting experience. The logical locking system assures quick and secure assembly with one touch buttons for quick release.

TURis Resection Electrodes



	Instrument name	std.	opt.
WA22301D WA22302D WA22503D	HF-resection electrode, 12 pcs., sterile, single use, loop, 12°, small loop, 12°, medium loop, 12°, large	X	X X
WA22305D WA22306D WA22507D	loop, 30°, small loop, 30°, medium loop, 30°, large		X X X
WA22521C WA22523C	band, medium, 12° band, medium, 30°		X X
WA22331D WA22332D	HF-resection electrode, 12 pcs., sterile, single use, angled loop, small angled loop, medium		X X
WA22351C WA22355C	HF-resection electrode, 12 pcs., roller 45° needle	X X	
WA22557C	button, for plasma vaporisation		X



SurgMaster HF Unit



	Instrument name	std.	opt.
N1063440	HF unit "UES-40 SurgMaster", 220–240 V Delivery includes: HF unit, foot switch MAJ-1258, and power cable	X	

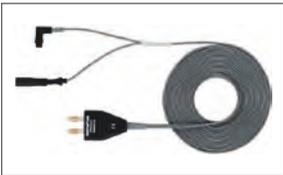
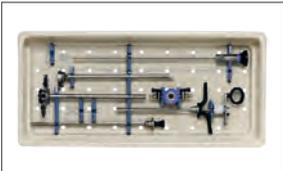
Version 2.0
Rapid Plasma
Ignition

The Olympus UES-40 SurgMaster – one unit for virtually any electro-surgical need. The Olympus SurgMaster covers almost every application where electro-surgery is performed. One unit enables the surgeon to perform Resection in Saline (TURis/TCRIs), conventional monopolar resection and to connect bipolar and monopolar hand instruments as well. SurgMaster – powered by Olympus.

- One unit for all needs
- Transurethral Resection in Saline (TURis) and Transervical Resection in Saline (TCRIs)
- Monopolar and bipolar cutting and coagulation
- TURis Plasma Vaporization
- Excellent cutting and coagulation modes
- Automatic smoke evacuation



Accessories

		Instrument name	std.	opt.
	WA00013A	HF cable, bipolar, 4 m, for UES-40	X	
	WA03200A	Light-guide cable, size S, plug type, 3 m	X	
	A0556	Syringe, 150 ml, fixed cone		X
	WA05970A	Instrument tray, with lid	X	
	A5976	Insert tray, for resectoscope	X	
		Saline solution	X	
		Lubricant (conductive)	X	
	O3657	Silicone catheter	X	
Evacuator, acc. to Ellik			X	

REFERENCES

- H. Ibrahim et al.
Preliminary assessment of the Olympus Surgmaster™ bipolar system: physiological changes, early complications, and short-term outcome. MP-09.06, Urology, Volume 68, Supplement 5A, Nov 2006
- Henry Ho et al.
Bipolar Transurethral Resection of Prostate in Saline: “Preliminary Report on Clinical Efficacy and Safety at 1 Year”, Journal Of Endourology Volume 20, Number 4, April 2006
- Rikio Yoshimura et al.
Treatment of Bladder Tumors and Benign Prostatic Hyperplasia with a New TUR System Using Physiological Saline as Perfusate, World Journal of Surgery, 2006. 30: 1-6
- Debora K. Moore et al.
Bipolar Transurethral Resection – An Improved System for the Treatment of BPH?, Business Briefing: US Kidney & Urological Disease 2005
- Henry Ho et al.
TURis: Transurethral Resection in Saline preliminary results of a promising approach using bipolar energy, Asian Congress of Urology 2004 (Abstract)
- C. Brunken et al.
Transurethral Resection of Bladder Tumours in Sodium Chloride Solution, Urologe A. 2004 Sep; 43(9): 1101-5.
- European Urology Today
Plasma vaporization: effective, safe and cost-efficient - An innovative method offers both patients and doctors substantial advantages in BPH therapy, October/November 2008
- A. Mueller et al.
Effiziente operative Behandlung der prostatogenen Blasenentleerungsstörung unter Beibehaltung der oralen Antikoagulation: Transurethrale Elektrovaporisation der Prostata in Kochsalzlösung, SGU 2008
- M. Naudin et al.
Transurethral bipolar vaporization of prostate in saline (TUVPIs). A new resection system for benign prostatic hyperplasia, AUA 2008.

SYSTEM CHART

Rotatable Continuous Flow Resectoscope

Inner sheath,
A22040* for 26 Fr. outer sheath
A22041 for 27 Fr. outer sheath



Outer sheath,
A22026A 26 Fr., 2 stopcocks, rotatable
A22021A 27 Fr., 2 stopcocks, rotatable

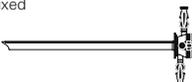


Continuous Flow Resectoscope

Inner sheath,
A22040* for 26 Fr. outer sheath
A22041* for 27 Fr. outer sheath



Outer sheath,
A22027A 26 Fr., 2 vertical stopcocks, fixed
A22023A 27 Fr., 2 vertical stopcocks, fixed
A22025A 27 Fr., 2 horizontal stopcocks, fixed



Standard Resectoscope

A22041* Resection sheath,
without irrigation port,
24 Fr.



Irrigation port,
A22051A 1 stopcock, rotatable
A22052A 1 luer-lock connector, rotatable
A22053A 2 horizontal stopcocks, rotatable
A22054A 1 vertical stopcock, fixed
A22055A 1 vertical luer-lock connector, fixed



Resectoscope with Intermittent Irrigation

A22014* Resection sheath,
intermittent irrigation,
24 Fr.



Telescopes



Telescope,
4 mm, autoclavable,
12° direction of view
A22001A
A22002A 30° direction of view

WA03200A Light-guide cable,
3 mm, plug type



Working Elements

WA22366A Working element,
active

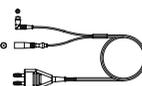


WA22367A Working element,
passive

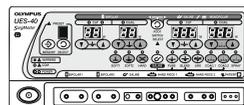


SurgMaster Electro-Surgical Unit

WA00013A HF cable,
bipolar,
for UES-40,
4 m length

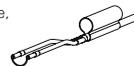


UES-40 HF unit



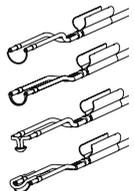
HF-Resection Electrodes

HF-resection electrode,
WA22301D loop, 12°, small
WA22302D loop, 12°, medium
WA22305D loop, 30°, small
WA22306D loop, 30°, medium
WA22331D angled loop, 12° and 30°, small
WA22332D angled loop, 12° and 30°, medium
WA22351C roller, 12° and 30°
WA22355C needle, 12° and 30°, 45° angled loop



new

WA22503D loop, 12°, large
WA22507D loop, 30°, large
WA22521C band, medium, 12°
WA22523C band, medium, 30°
WA22557C button,
for plasma
vaporization
WA22558C angled loop,
12° and 30°,
for TUEB "Transurethral Enucleation"



*Add A or T to the article number for the desired obturator:

A220xxA standard obturator
A220xxT obturator with deflecting tip

For a detailed list of electrodes, see our Urology catalog.



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