OLYMPUS

Your Vision, Our Future

ADVANCED LAPAROSCOPY

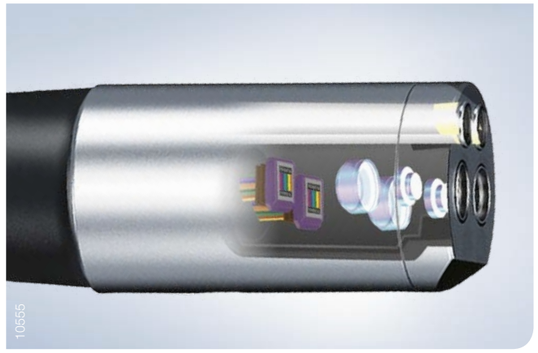
Procedural Benefits of 3D HD and THUNDERBEAT in Laparoscopic Urology.

INTRODUCING THE WORLD'S ONLY DEFLECTABLE-TIP LAPAROSCOPE DELIVERING HD VIDEO IN 3D

ENDOEYE FLEX 3D Is the Only Solution That Can Provide the Critical Clinical View While Maintaining Image Orientation. Greater Depth of Field and the Optimal Amount of Depth Perception Are Also Realized with the 3D HD Image. We Are Proud to Introduce This Innovative Solution for 3D Imaging.

100 Degree Angulation

The ENDOEYE FLEX 3D can bend up to 100 degrees in four directions. This function provides the critical clinical view during surgery while maintaining optimal and correct visual orientation, which cannot be achieved with conventional rigid telescope and camera head 3D systems.



Chip-on-the-tip technology for 3D visualization

Focus-Free

ENDOEYE technology using distally located image sensors maximizes the 3D benefit by means of a brighter, more light-sensitive image with a greater depth of field while eliminating manual focusing.

Lightweight plug-and-play design

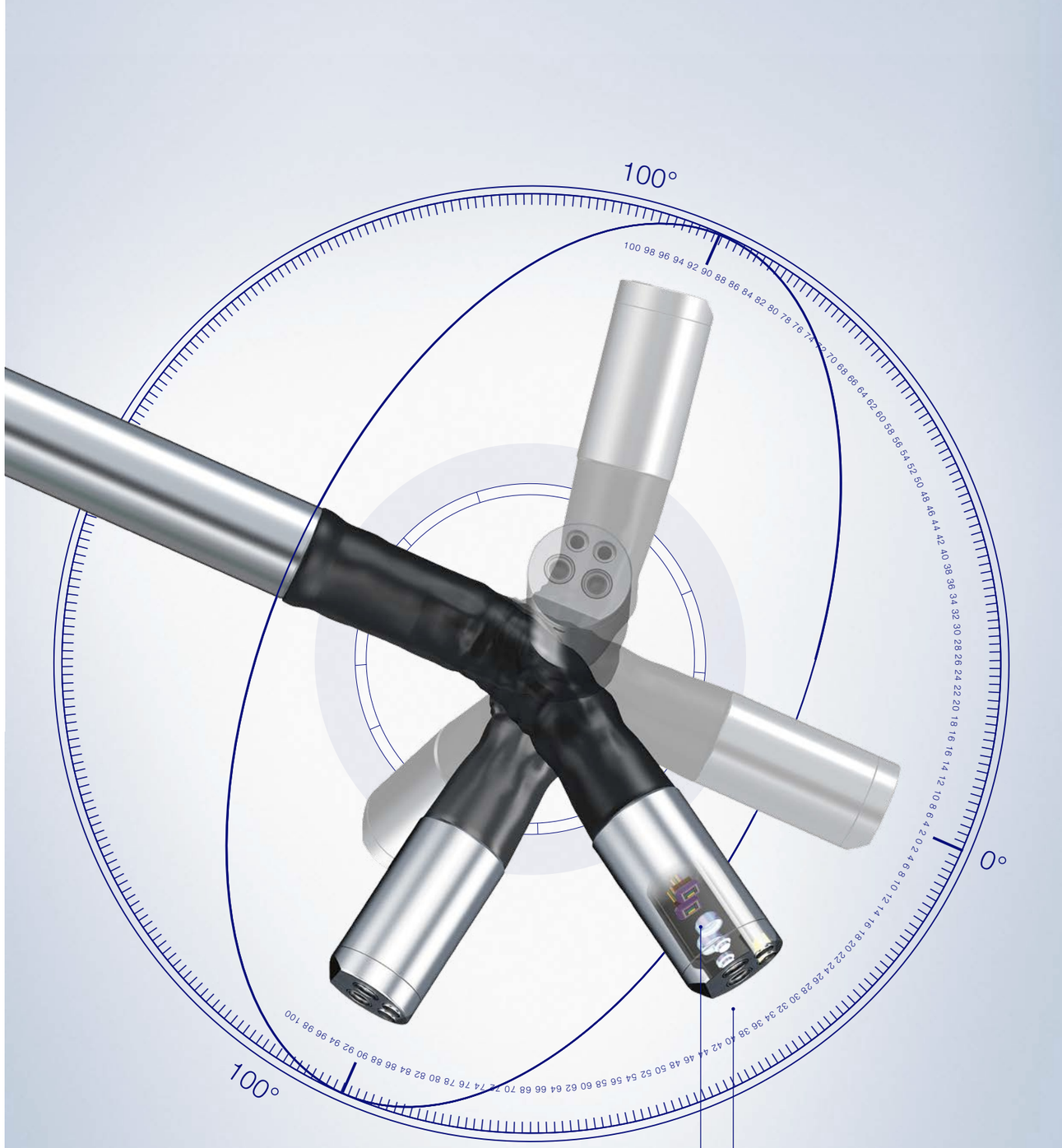
All-in-One Lightweight Ergonomic Design

An all-in-one integrated structure is adopted that provides a true plug-and-play solution. The device can thus be easily set up before surgery, and it also offers improved handling during surgery, even in 3D.

One versatile platform

Compatibility with Current 2D Scopes

Olympus 3D Imaging Solution ensures compatibility with our current 2D scopes to provide an economical means of upgrading your video system with minimal incremental cost. Our video platform supports over 100 different flexible and rigid camera heads, videoscopes, and endoscopes.



3D in HDTV

The ENDOEYE FLEX 3D utilizes high-density image sensors at the distal end of the videoscope providing 3D images in high definition.

Dual-Lens 3D Optical Structure

The dual-lens design is the key to creating the correct amount of depth in the image.

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INTEGRATED BIPOLAR AND ULTRASONIC ENERGY FROM A MULTIFUNCTIONAL INSTRUMENT

Groundbreaking Integrated Technology

THUNDERBEAT is the world's ONLY integration of both advanced bipolar energy and ultrasonic energy delivered simultaneously from a single, multifunctional instrument. This integration delivers the widely recognized benefits of each type of energy: the ability to rapidly cut tissue with ultrasonic energy and the ability to create reliable vessel seals with bipolar energy.

The THUNDERBEAT Difference

Ultrasonic Energy Only

Rapid tissue cutting

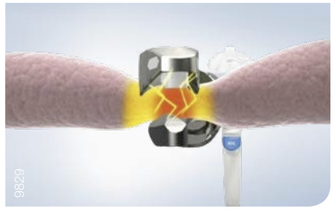
+

Bipolar Energy Only

Reliable vessel sealing

=

THUNDERBEAT



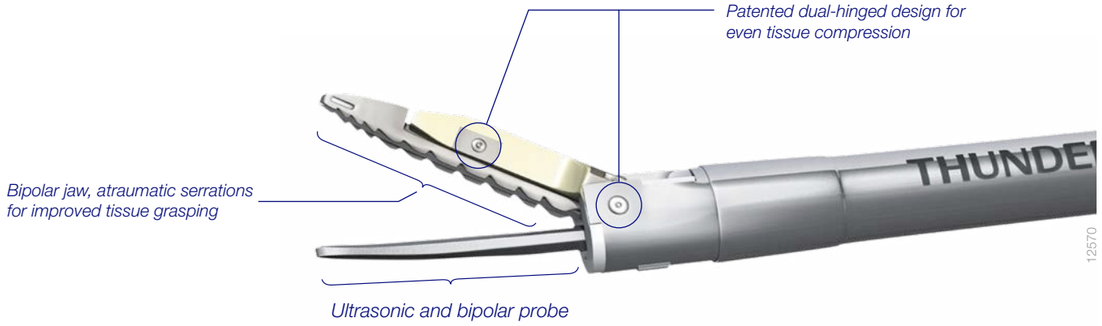
*Rapid tissue cutting **AND** reliable vessel sealing*

The Benefits of Unprecedented Versatility

- Fastest-in-class cutting speed
- Reliable 7 mm vessel sealing
- Precise dissection with fine jaw design
- Bipolar energy always available for hemostasis without cutting
- Highest-in-class tip grasping force
- Minimal thermal spread
- Fewer instrument exchanges
- Reduced mist generation for improved visibility

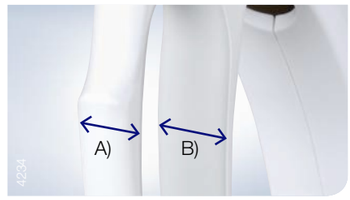
Revolutionary Jaw Design

All THUNDERBEAT devices feature a patented center-pivot jaw design. This unique feature allows for even distribution of closing pressures onto the tissue while at the same time improving grasping forces. The result is improved fine and blunt dissection and a more reliable vessel seal.



Intuitive, Easily Accessible Hand Switches

- Intuitive hand switches that are easily accessible from various directions allow for stable activation, regardless of hand size or position
- Additional protrusions on the SEAL button provide tactile recognition for a seamless operational flow
- **Seal & Cut Mode**
  Bipolar energy and ultrasonic energy for reliable vessel sealing and coagulation with simultaneous cutting
- **Seal**
  Advanced bipolar energy for reliable vessel sealing and tissue coagulation without simultaneous cutting



Optimized Actuating Handle Design

A) Thinner front grip of the actuating handle provides surgeon with direct tactile feedback for blunt dissection

B) Wider rear grip of the actuating handle provides stability when grasping and cutting tissue

PROSTATECTOMY – PROCEDURAL 3D HD AND THUNDERBEAT BENEFITS

ENDOEYE FLEX 3D Benefits in Prostatectomy:

- Facilitated orientation for safe peeling of the fascia from the prostate
- Faster suturing, thanks to three-dimensional visualization of the needle at the point of entry
- Reduced risk of too large prostate incisions due to 100° angulation for clear identification of the dissection line
- Bird's-eye view beneficial in neurovascular bundle sparing

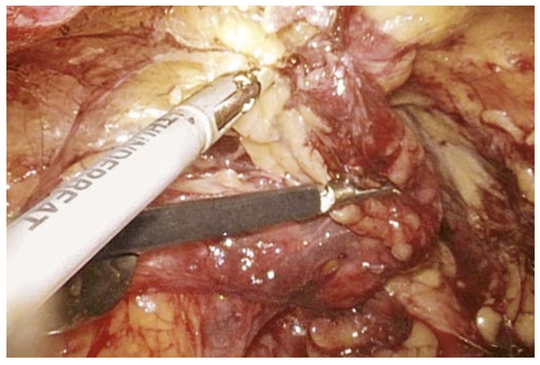
THUNDERBEAT Benefits in Prostatectomy:

- Simultaneous Seal & Cut provides a quick and secure freeing of the prostate
- Facilitated prevention of posterior bladder due to less bleeding & better vision
- Controlled preparation of all vessels around the prostate
- The very good hemostatic ability is highly beneficial during separation of seminal vesicles from the rectum (lots of small vessels here)

Incision of Overlying Fascia Surrounding the Prostate Gland

The **3D** depth perception facilitates orientation and allows for a finer angle of engagement, leading to more precise and safer peeling of the fascia from the prostate.

THUNDERBEAT creates less mist and supports better vision. It allows a quick and safe freeing of the prostate due simultaneous sealing and cutting. It enables controlled preparation of all vessels in this region.



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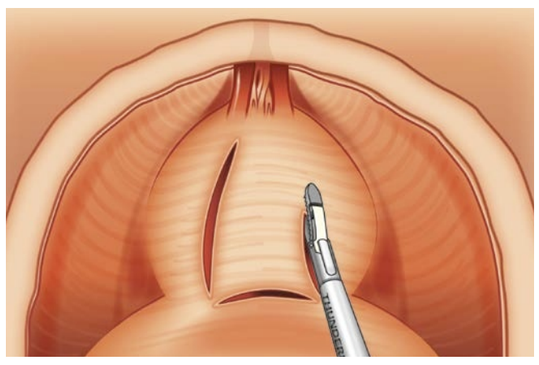

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Incision of overlying fascia surrounding the prostate gland

Ligation of Dorsal Vein Complex

Urologists need to identify the plane between the urethra and dorsal vein complex. The flexible tip of the endoscope provides the front or side view without instrument confliction. It helps to prevent injury to the DVC and urethra during ligation. In addition, **3D** visualization helps in predicting the needle's point of entry and delivery, which allows for safer and faster suturing.


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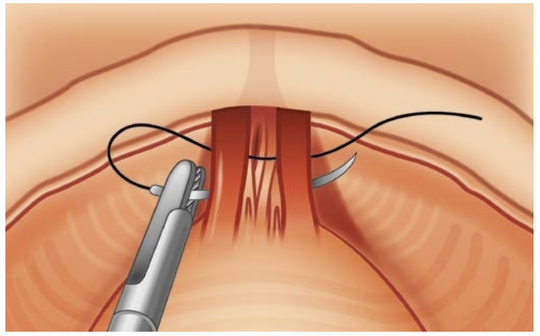
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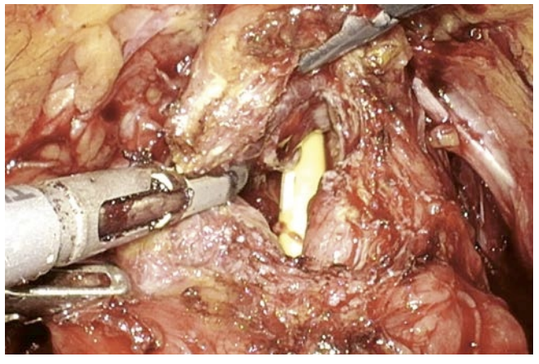
Ligation of dorsal vein complex

Bladder Neck Transection

When transecting the bladder neck, the fully flexible endoscope supports urologists in determining the dissection line easily. Thanks to better orientation and **3D** depth perception, the risk of too large bladder holes or prostate incisions is reduced.

THUNDERBEAT facilitates bladder neck prevention. Seal & Cut at once leads to less bleeding and ensures better vision at the posterior bladder neck; therefore, the risk of going into the bladder is reduced.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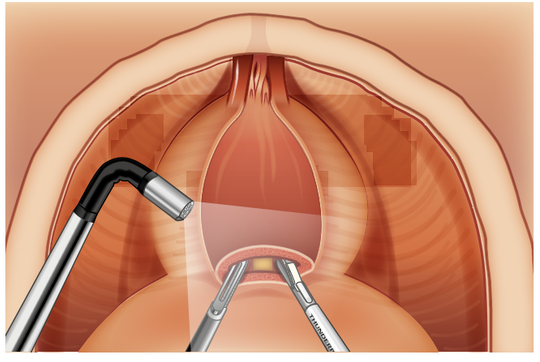

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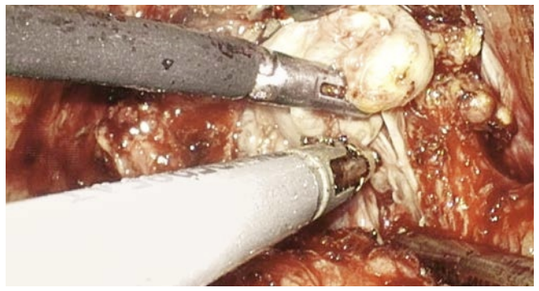
Bladder Neck Transection

PROSTATECTOMY – PROCEDURAL 3D HD AND THUNDERBEAT BENEFITS

Incision of Denonviellers Fascia and Separation of Seminal Vesicles

The **3D** visualization enables a controlled incision of the Denonvilliers fascia. The flexible scope helps to observe better the tip of the instruments and avoid damages to the rectum. With **THUNDERBEAT's** fine tip Denovilliers fascia can be opend precisely. **THUNDERBEAT's** Seal & Cut provides a controlled and secure seperation of the seminal vesicles and vas deference.



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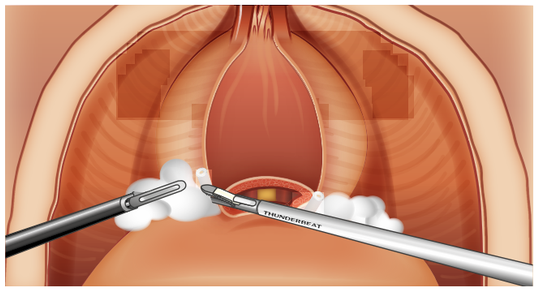

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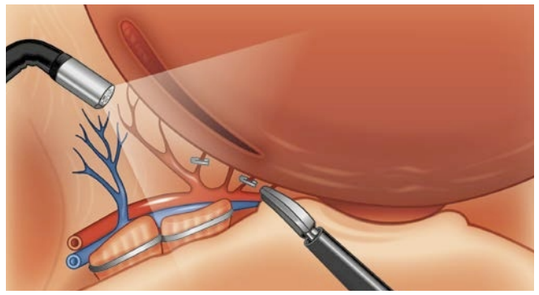
3D visualization provides controlled incision of Denonvilliers fascia and separation of seminal vesicles

Neurovascular Bundle Sparing

The tip of the scissors for the apical dissection, which tends to be behind the prostate, can be observed from the front by creating the bird's-eye view with the deflectable endoscope. Depth perception by means of **3D** supports reduces the risk of injury of the NVB.



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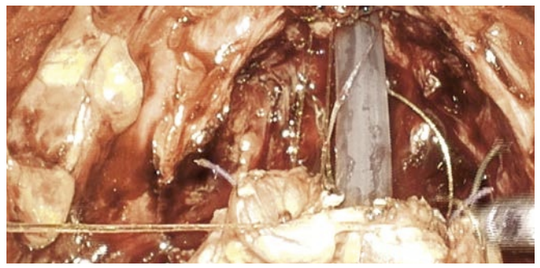
Neurovascular Bundle Sparing

Anastomosis of Urethra and Bladder

Pelvic space is very limited, so it is beneficial that the flexible tip of the endoscope provides the side view, allowing for anastomosis to be performed without instrument confliction. In addition, **3D** visualization facilitates suturing significantly and leads to time savings.



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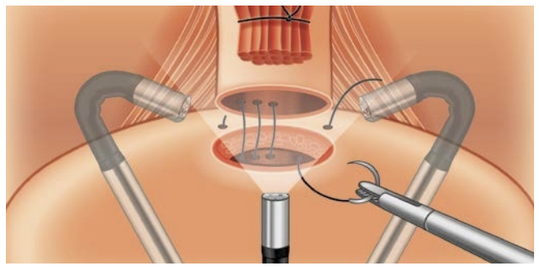

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Anastomosis of urethra and bladder

(PARTIAL) NEPHRECTOMY – PROCEDURAL 3D HD AND THUNDERBEAT BENEFITS

ENDOEYE FLEX 3D Benefits in (Partial) Nephrectomy:

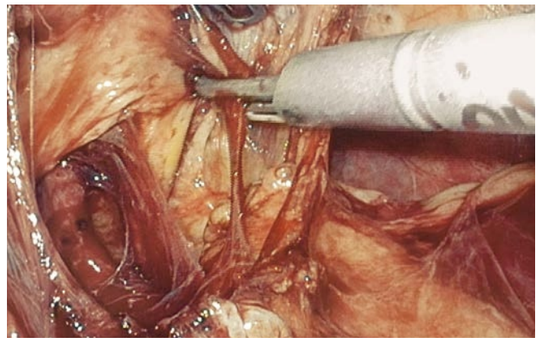
- Clear 3D visualization of the artery posterior to the vein for reduced risk of overlooking bleeders
- 3D depth perception reduces the risk of leaving tumor a behind
- Suturing becomes more intuitive, thanks to the depth perception and leads to reduced ischemia time

THUNDERBEAT Benefits in (Partial) Nephrectomy:

- Precise dissection capability and grasping force helps to identify and mobilize the kidney
- Prompt sealing and cutting of new vessels linked to renal cancer with only THUNDERBEAT
- For partial nephrectomy, THUNDERBEAT's effective Seal & Cut leads to having one hand free and enables usage in conduction with clips or a sucker

Mobilization and Freeing of the Kidney

The **3D** vision facilitates better identification of the ureter, gonadel vein, etc. It helps to find the right plane for incision more easily and frees the kidney without injuring surrounding organs, such as the liver, the bowel, and the spleen. For mobilization, **THUNDERBEAT** grasps and fine dissects well. It enables freeing of the kidney from surrounding tissue significantly more quickly.



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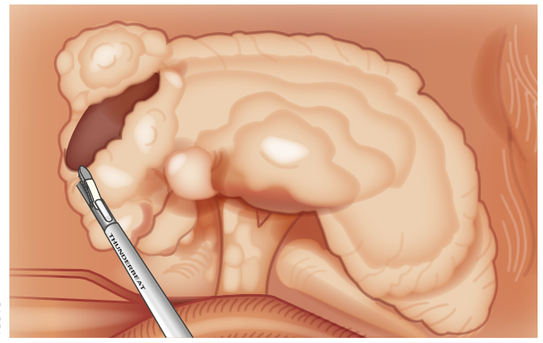

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THUNDERBEAT enables effective and secure freeing of the kidney

(PARTIAL) NEPHRECTOMY – PROCEDURAL 3D HD AND THUNDERBEAT BENEFITS

Hilum

The combination of **3D** HD and the flexible tip allows for a better visualization of the artery posterior to the vein. The risk of overlooking bleeders is reduced, thanks to being able to look at the hilum from the posterior aspect.

THUNDERBEAT effectively cuts and seals at once while one hand of the surgeon is free which provides confidence for a worst case scenario.

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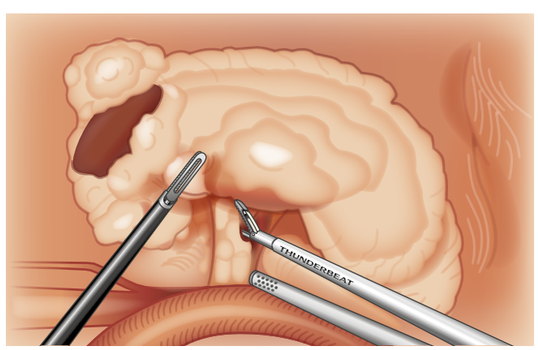

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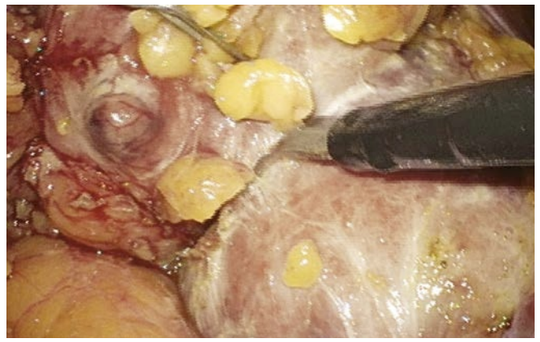
Flexible tip allows postierior visualization of the hilum and thus minimize overlooking bleeders

Partial Nephrectomy

An important aim in partial nephrectomy is sparing as much healthy tissue as possible. In this respect, the surgeon needs to precisely locate the tumor. Intraoperative **3D** imaging provides the surgeons with the most possible realistic view and compensates the challenge of possible differences between the preoperative anatomical situations and the intraoperative situation.



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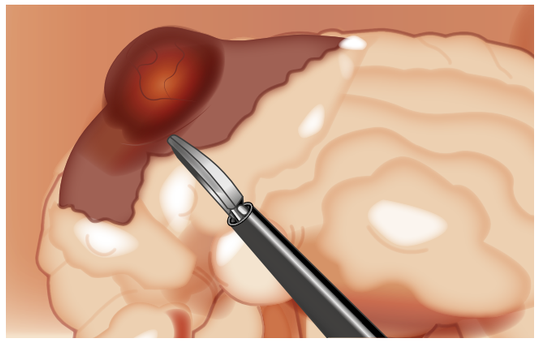

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Incision of the kidney

Tumor Growth

3D HD visualization also supports in the excision phase of the procedure. As the depth perception of **3D** helps to identify the point of entry and the cutting angle more precisely, the risk of leaving tumor behind is reduced.

THUNDERBEAT can be used as an effective grasping instrument. At the same time, a large bleeder due to new vascularization linked to renal cancer biology can be sealed by **THUNDERBEAT** promptly. There is no need of an extra sealing device.

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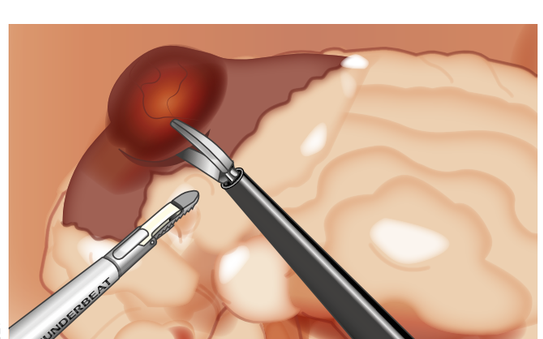

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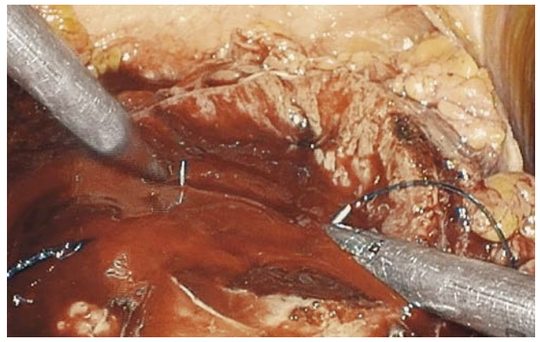
3D depth perception helpful for precise tumor cutting

Suturing

Similar to the advantages in prostatectomy, **3D** also facilitates suturing in partial nephrectomy, which is crucial in order to reduce ischemia time. By having better perception of where to stitch and grasp the needle, the result is time saved and less bleeding, which leads to a shorter ischemia time.



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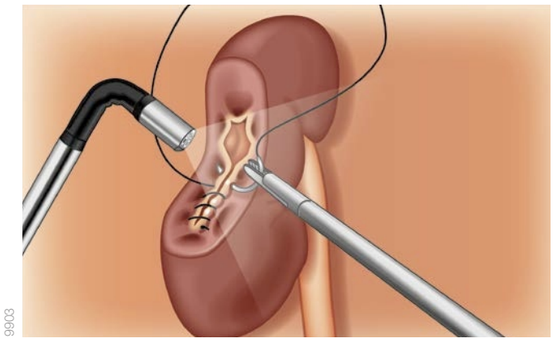

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Use of 3D facilitates suturing for reduced ischemia time

3D HD IN UROLOGY

Simply Add 3D to Your Current System to Maintain Familiarity

Option of 3D Recording/Editing:

This option allows for advanced recording, editing, and image management.

Option of a 3D Display:

The display option comes with a large 42" monitor behind a hygienic glass cover to provide the whole OR team with a convenient 3D view to enhance teamwork.

Option of a 3D OR Integration:

This option integrates the whole range of medical and peripheral equipment in your OR – including advanced 3D features allowing for live video streaming for teaching purposes and seamless overall work flow.

3D Components and Accessories	
N4491360	EVIS EXERA III Mixer 3DV-190
N3643260	EVIS EXERA III CV-190 processor (two required)
N3643350	EVIS EXERA III CLV-190 light source
N4501750	ENDOEYE FLEX 3D endoscope
E0497429	SONY 24" 3D monitor LMD-2451-MT/TG
E0497620	SONY 32" 3D monitor LMD-3251ST
N3808460	IMH-10 – Blu-ray and HDD recording platform
N3808560	IMH-20 – Blu-ray and HDD recording platform
N3829670	UHI-4 – insufflator
K10021613	WM-NP2 mobile workstation

THUNDERBEAT Handpieces	
N4488930	THUNDERBEAT 5 mm, 45 cm, front-actuated grip
N4489130	THUNDERBEAT 5 mm, 35 cm, front-actuated grip
N3810330	THUNDERBEAT 5 mm, 45 cm, pistol grip
N3810430	THUNDERBEAT 5 mm, 35 cm, pistol grip
N3810530	THUNDERBEAT 5 mm, 45 cm, in-line grip
N3810630	THUNDERBEAT 5 mm, 35 cm, in-line grip
N3810730	THUNDERBEAT 5 mm, 20 cm, in-line grip
N3810830	THUNDERBEAT 5 mm, 10 cm, in-line grip

THUNDERBEAT Generators and Accessories	
WB91051W	ESG-400* electrosurgical generator
N3808660	USG-400 ultrasonic generator
N3808760	Transducer for THUNDERBEAT
N3809330	Communication cable – short: 0.25 m
N3809630	Docking fixture
WA956215	Power cable Europlug (2×)

Optional THUNDERBEAT Accessories	
N3635730	Energy cart
N3809230	Foot switch for THUNDERBEAT
WB50403W	Foot switch, single (bipolar) pedal
N3809430	Communication cable – long: 10 m**
N3809530	Adapter for the connection to UHI-2 or UHI-3 insufflator**
E0427213	Neutral electrode cable (reusable)

* Including one double foot switch
** Required for the automatic mist and smoke evacuation function

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