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Transurethral Vaporization of the Prostate with PLASMA

Procedure Guide

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Transurethral PLASMA Vaporization of the Prostate

Disclaimer

This surgical technique is presented to demonstrate the Barnes method adapted by Prof. Raßler, MD, of the Urology Department at St. Elisabeth Hospital in Leipzig (Germany).

This procedure guide is a voluntary service of Olympus, compiled with the greatest possible care. The guide is not meant to replace the instructions for use. Any user of this product must at all times observe all mandatory information for the product, found, in particular, on the labels and the instructions for use. This guide merely contains guideline values which must be verified by the HCP for their applicability in the single case and do not represent medical advice or recommendations. Depending on the individual circumstances, it may be necessary to deviate from the generic information provided in this guide.

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Urology Department

The Procedure

What Is PLASMA Vaporization?

PLASMA vaporization is a safe, easy-to-use solution for TUR procedural needs in which energized gas smoothly vaporizes the tissue.

The optimized shape of the OvalButton in combination with the easy-to-learn “hovering technique” results in an effective, fast-ablating, and virtually bloodless vaporization of the prostatic tissue.

Benefits

- **Continuous and safe hemostasis.**
- Fewer severe **complications** compared to TURP.[1]
- Fewer **readmissions** compared to TURP.[2]
- **Shorter hospital stay** compared to TURP.[3]
- Potential for day surgery due to a **shorter catheterization period and hospital stay.**
- Use has been **demonstrated in patients** on anticoagulants.[4]
- **Clear and unobstructed view** throughout the operation as neither tissue nor laser impulses impair vision.

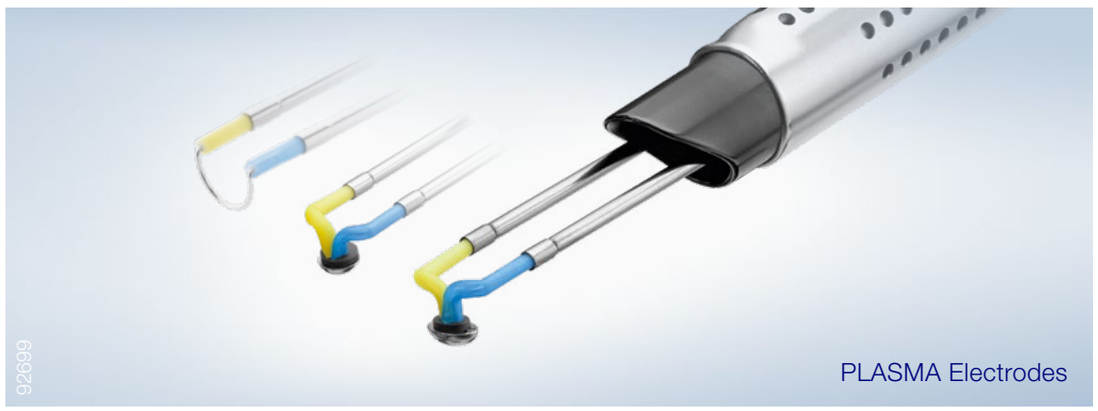
Recommended Equipment

PLASMA Vaporization

The following inventory lists the equipment that can be used to perform a PLASMA vaporization procedure.

Open **Ordering Information** >

What Is PLASMA? >



Technique for Using the Instruments

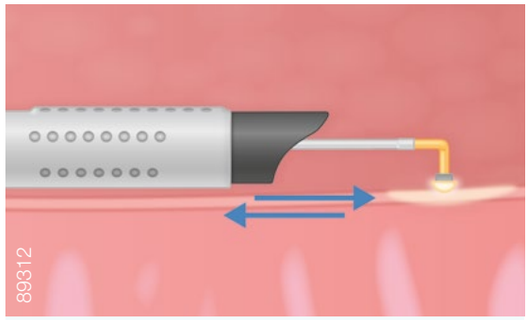
Versatile Usability — Vaporization Techniques

The Barnes Method

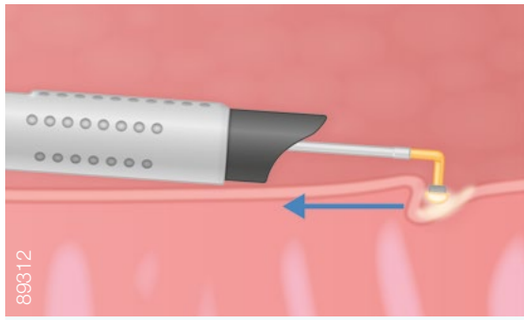
The Barnes method aims to completely clear one side of the prostate after the other. It is divided into three easily recognizable phases: proximal, middle and apical resection/ vaporization.

The Nesbit Method

The method of Nesbit aims to cause a primary interruption of the arterial blood supply to the prostate adenoma. By encircling the adenoma tissue with a trench cut close to the capsule, all arteries supplying hyperplastic tissue are interrupted. The avascular prostatic tissue can then be excised rapidly with minimal blood loss.



Hovering technique



Deep-dive technique

Key Insights

The hovering technique can be applied in both directions so that the procedure time can be minimized.

Transurethral Vaporization of the Prostate with PLASMA

Overview of Procedural Steps

1. Cystoscopy

Inspection of the Urethra and Bladder

2. Marking of Resection Borders

Go to **Step 2** ›

3. Vaporization

3.1 Medial Lobe

3.2 Basal Portions of Lateral Lobes

3.3 Floor of the Prostatic Cavity

Go to **Step 3** ›

4. Vaporization

4.1 Endovesical Part of the Medial and Left Lateral Lobe

4.2 Endourethral Part of the Left Lobe

Go to **Step 4** ›

5. Vaporization

5.1 Endovesical Part of the Right Lateral Lobe

5.2 Endourethral Part of the Right Lobe

Go to **Step 5** ›

6. Final Vaporization of the Apical Part

Go to **Step 6** ›

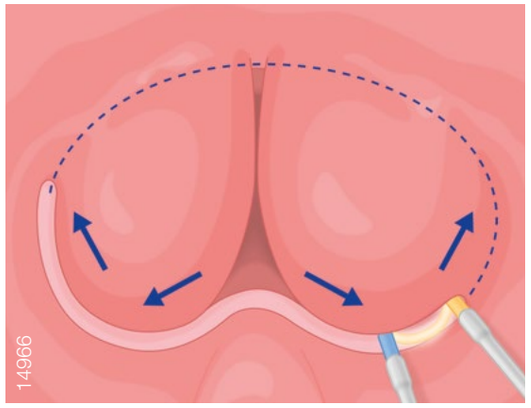
Watch the **Procedure Video** ›

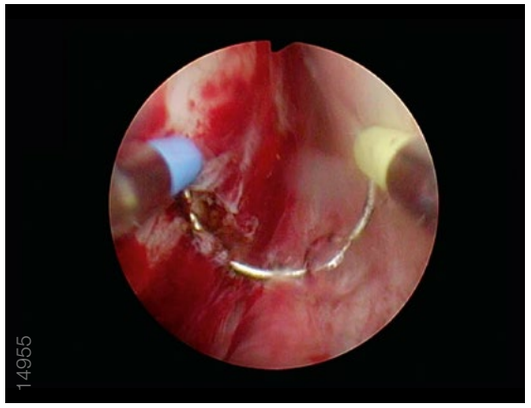
02 | Marking of Resection Borders

Transurethral Vaporization of the Prostate with PLASMA

Description

After inspecting the left and right ostium, bladder, verumontanum and internal and external sphincter, start with the proximal marking of the verumontanum.





Key Insights

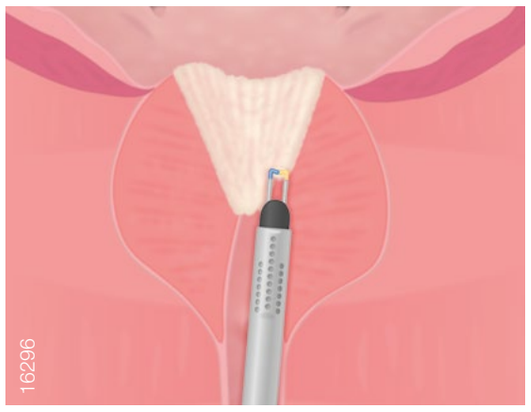
- Use the coagulation mode (coag) of the loop/button electrode to superficially mark the resection borders at a distance of approximately two loops proximally to the verumontanum.

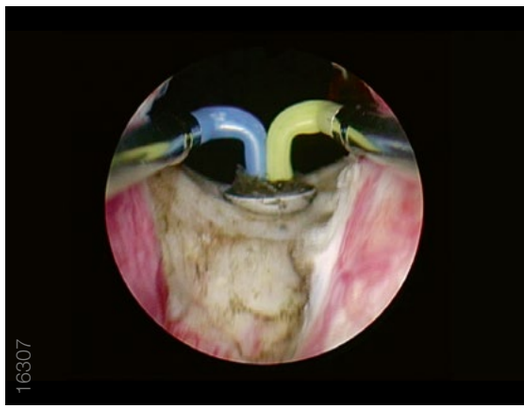
03 | Vaporization of the Medial Lobe, of Basal Portions of Lateral Lobes, and of the Floor of the Prostatic Cavity

Transurethral Vaporization of the Prostate with PLASMA

Description

Vaporization of the medial lobe and proximal part of the side lobes until the 5 o'clock and 7 o'clock positions.





Key Insights

· Vaporization is done in layers instead of deep grooves.

· If bleeding occurs, perform a spot coagulation without moving the button forwards or backwards (as known in monopolar surgery). To improve coagulation, use the edge of the button.

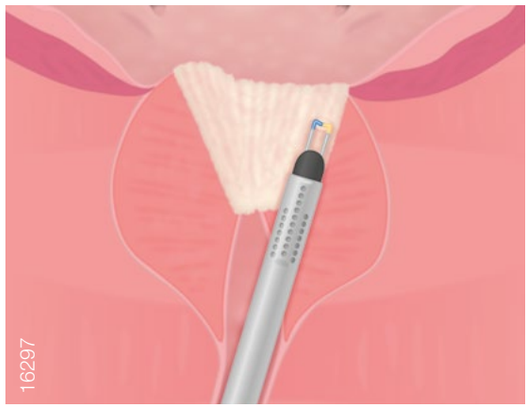
· If it is necessary to cut, use the edge of the button in vaporization mode.

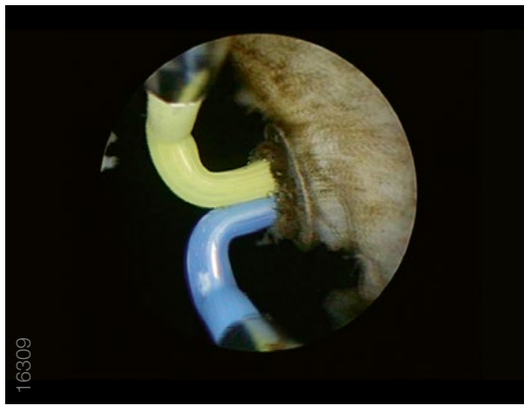
04 | Complete Vaporization of the Endovesical Part and the Endourethral Part of the Left Lobe Except for an Apical Remnant

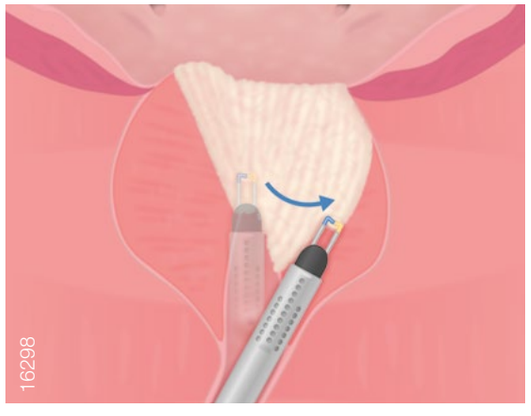
Transurethral Vaporization of the Prostate with PLASMA

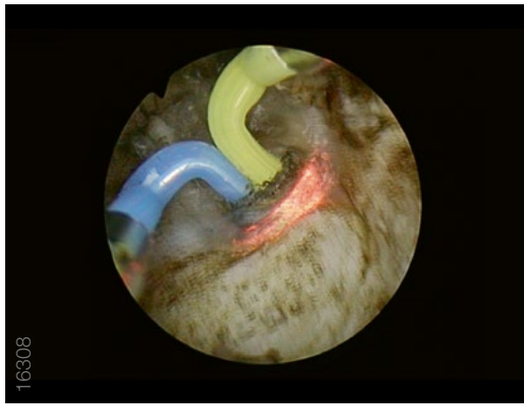
Description

Further ablate the endovesical part of the medial lobe and proceed with ablation of the endovesical and the endourethral part (except for an apical remnant) until the left lobe is completely vaporized.









Key Insights

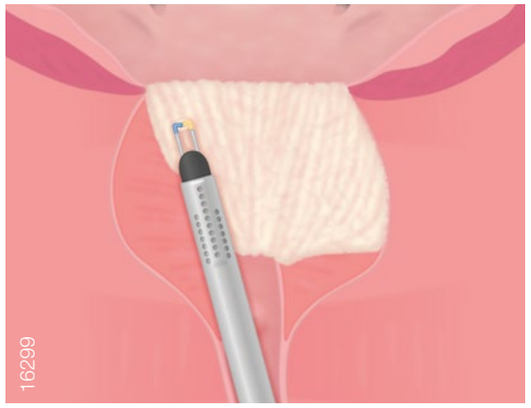
- The vaporization direction goes from dorsal to ventral and the other way round until the left lobe is completely vaporized.
- Remove the tissue in layers in a vertical direction, starting on the floor of the cavity.
- Be aware of bleeding and perform spot coagulation where needed. In most cases vessels are in the 11 and 1 o’clock positions.

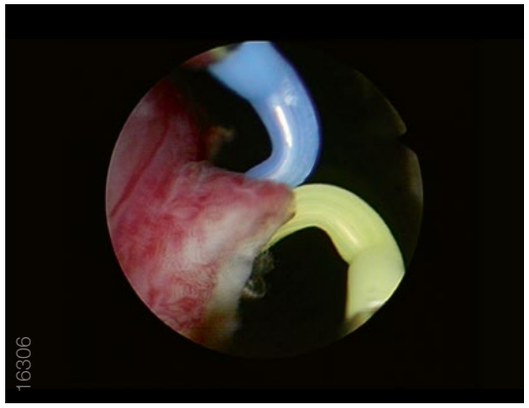
05 | Complete Vaporization of the Endovesical and Endourethral Part of the Right Lobe Except for an Apical Remnant

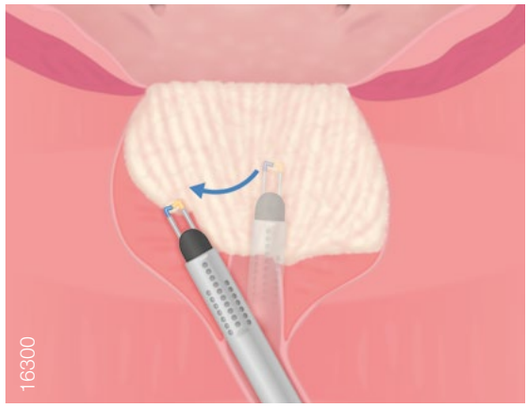
Transurethral Vaporization of the Prostate with PLASMA

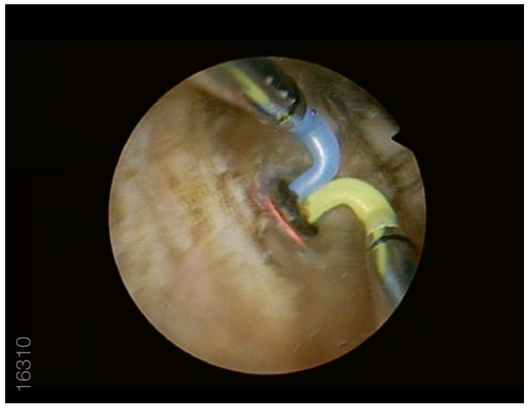
Description

Ablate the endovesical part and the endourethral part (except for an apical remnant) until the right lobe is completely vaporized.









Key Insights

- The vaporization direction goes from dorsal to ventral and the other way round until the right lobe is completely vaporized.
- Remove the tissue in layers in a vertical direction, starting on the floor of the cavity.
- Be aware of bleeding and perform spot coagulation where needed. In most cases vessels are in the 11 and 1 o’clock positions.

06 | Final Vaporization of the Apical Part

Transurethral Vaporization of the Prostate with PLASMA

Description

To avoid postoperative voiding disturbances, the BPH should be removed completely. At the apex, remaining material can be vaporized or resected conventionally.

Key Insights

- In contrast to the classical Barnes resection, all tissue material should be removed, including distal of the verumontanum.

- Ensure hemostasis is obtained. Be aware of bleeding and perform spot coagulation where needed.

- Place the electrode with slight pressure on the bleeding; activate coagulation mode and hold until the bleeding has stopped.

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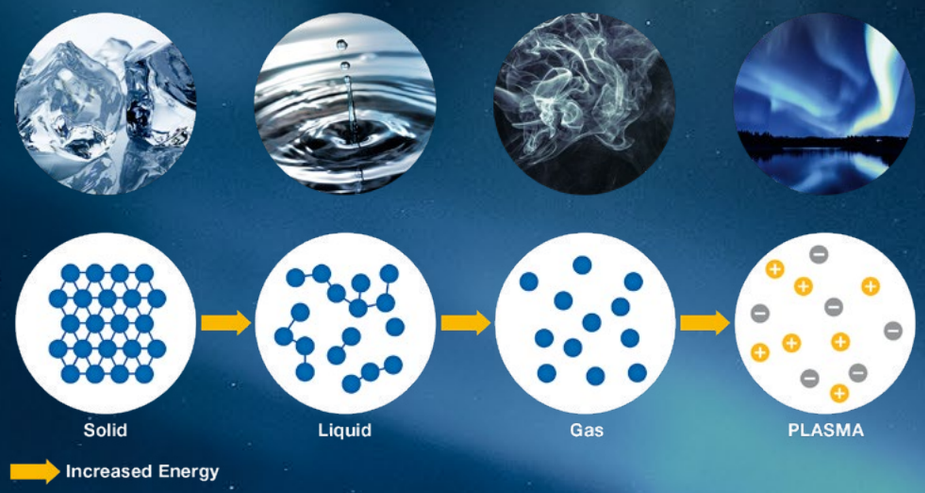
What Is PLASMA?

- PLASMA is one of the **four fundamental states of matter.**
- It is created when **energy is applied to a gas** that then turns into PLASMA.



- Due to its conductivity, PLASMA enables energy to cross at lower levels. This allows for **lower operating temperatures** and, therefore, **less thermal spread**. The targeted tissue is vaporized by a locally confined denaturation process, while **heating effects in the surrounding tissue are minor**.

Discover Other Forms of PLASMA

PLASMA is common in our world and appears in different variations in nature. It is especially prevalent in atmospheric and outer space phenomena such as the sun and initiates polar lights as well.

Transurethral Vaporization of the Prostate with PLASMA

References

[1] Wroclawski, M. L., et al. *“Button Type” Bipolar Plasma Vaporisation of the Prostate Compared with Standard Transurethral Resection: A Systematic Review and Meta-Analysis of Short-Term Outcome Studies.* BJU Int. 177 (2016): 662-668.

[2] Geavlete, B., et al. *Bipolar Plasma Vaporization vs Monopolar and Bipolar TURP-A Prospective, Randomized, Long-Term Comparison.* Urology. 78 (2011) 4: 930-935.

[3] Geavlete, B., et al. *Transurethral Resection (TUR) in Saline Plasma Vaporization of the Prostate vs Standard TUR of the Prostate: “The Better Choice” in Benign Prostatic Hyperplasia?* BJU Int. 106 (2010): 1695-1699.

[4] Delongchamps, N. B., et al. *Surgical Management of BPH in Patients on Oral Anticoagulation: Transurethral Bipolar Plasma Vaporization in Saline versus Transurethral Monopolar Resection of the Prostate.* Can. J. Urol. 18 (2011): 6007-6012.

[5] Olympus internal lab testing; data from Olympus Corporation.

[6] Compared to existing Olympus vaporization electrode.

[7] Compared to PlasmaButton.

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