



EXPERT REPORT

AESCULAP[®] Caiman[®]

CESA/VASA – OPERATION METHODS USED IN
TREATING GENITAL DESCENT AND URGE INCONTINENCE

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1. FOREWORD

The Altmühl Valley Nature Preserve Hospitals in Eichstätt and Kösching are general hospitals. Between the two facilities, they provided inpatient and outpatient treatment to around 36,000 patients last year, and performed around 11,000 operations. The Department of Gynecology and Obstetrics focal points include, among other things, minimally invasive operations and its Pelvic Floor Center.

The number of minimally invasive surgeons and surgery centers is growing steadily throughout Germany and Western Europe. Eichstätt Hospital, as a specialist center for minimally invasive surgery in the field of operative gynecology, treats patients in accordance with guidelines by the Endoscopy Consortium (AGE) and the Consortium on Gynecological Oncology (AGO).

Being a certified minimally invasive surgery center, its standard operative procedures for treating both benign and malignant conditions of the cervix and corpus are minimally invasive. Besides offering conventional vaginal surgical procedures, trans-obturator technique (TOT) and tension-free vaginal tape (TVT), the Pelvic Floor Center began performing laparoscopic bilateral cervical / vaginal sacropexies (CESA/VASA) around two years ago.

2. VESSEL SEALING

Over the past decade, the use of endoscopic sealing and cutting tools on blood vessels (hemostasis) in operative gynecology and other operative disciplines has significantly increased in comparison to conventional surgical methods (surgical ligatures).

In an age of ever-increasing time pressure, where more and more complex surgical procedures are being per-

formed all the time, combining sealing and cutting into a single step saves time for the patient and surgeon.

3. USE OF THE CAIMAN® WITH THE CESA/VASA SURGICAL METHOD IN CONTEXT OF GENITAL DESCENT AND URGE INCONTINENCE THERAPY

Urinary incontinence is a widespread condition. In Germany, it affects around 9 to 15 million women—one out of every three to four. Whereas stress urinary incontinence can be treated successfully using TOT and TVT, urge incontinence was previously seen as incurable. Thanks to the CESA/VASA surgical method developed by Prof. Dr. Wolfram Jäger, women suffering from urge incontinence can now be treated successfully. Scientific studies and medical experiences with the laparotomy method have shown a success rate of 75%.

After extensive planning and preparation, we performed the operation laparoscopically for the first time at our Eichstätt location. With great success.

After just ten such procedures, the level of interest in video material and live demonstrations was so great among gynecological and urological surgeons that, after briefly optimizing and establishing our CESA/VASA method, we began conducting surgical workshops in our clinic. Inquiries came from senior and head physicians working at hospitals both in Germany and abroad (Czech Republic, Austria).

4. THE PELVIC ANATOMY

The goal of CESA/VASA operations is to return the pelvic organs to their original positions.

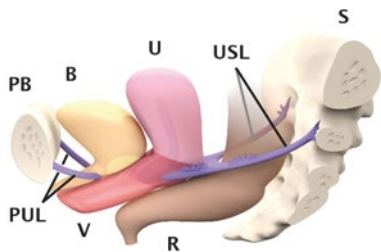


Fig. 1 Intact pelvic floor anatomy

- S = sacrum
- U = uterus
- B = bladder
- R = rectum
- V = vagina
- PB = pubic bone
- USL = uterosacral ligaments
- PUL = pubourethral ligaments

The image above shows an intact pelvic anatomy. In particular, intact uterosacral ligaments (USL) are evident.

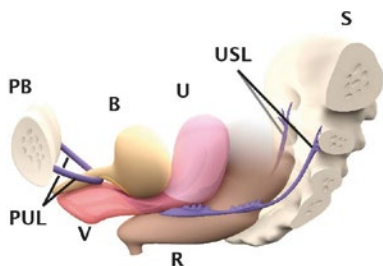


Fig. 2 Anatomy with stretched uterosacral ligaments

The uterosacral ligaments (USL) are stretched; the pubourethral ligaments (PUL) are still intact. This situation is typical in patients beginning to experience problems holding urine.

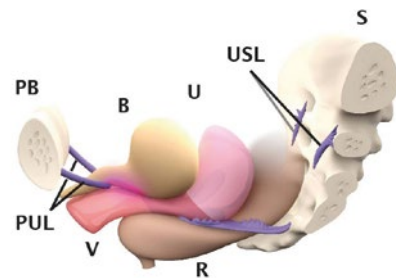


Fig. 3 Anatomy with torn uterosacral ligaments

The uterosacral ligaments (USL) have torn. Patients in this situation need to use the toilet very frequently, or can no longer hold their urine at all.

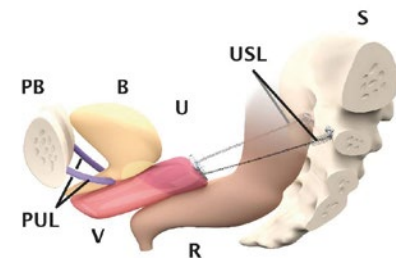
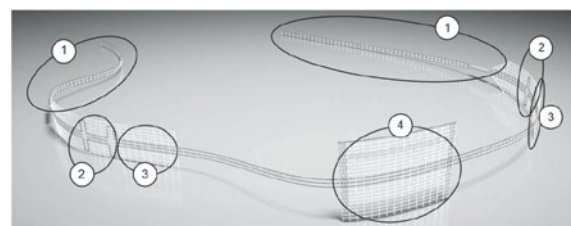


Fig. 4 Anatomy after mesh implantation

Animation situs after implantation. To repair the defect, the vagina is drawn up and affixed to either the vaginal stump or—as shown here—the cervix using the replacement band (implant).

5. THE SURGICAL METHOD



①	②	③	④
Insertion aids	Stitch marks	Fixation areas for rectopexy	Fixation area for vaginal / cervical stump

Fig. 5 Image of CESA / VASA mesh

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Fig. 6 Trocar positioning

CESA (cervical sacro-spinal bilateral fixation) operations are performed in two stages.

After previously preparing the patient (obese patients (BMI > 35), in particular, undergo two days of bowel preparation), we establish the pneumoperitoneum. After that, we insert a 10 mm video optical trocar in the navel area. Two 12 mm working trocars are also inserted on either side of the middle abdomen, along with two 5 mm working trocars inserted around 3 cm in the cranial and suprapubic directions from the navel.

In pre-menopausal patients, the first stage of the procedure is to perform a laparoscopically assisted supracervical hysterectomy (LASH) plus bilateral salpingectomy. In post-menopausal patients, a bilateral adnexectomy is performed as part of the LASH. The salpingectomy / adnexectomy is performed in the usual manner, using the Aesculap® Caiman® blood vessel sealing system. The 5 mm Caiman® is a multifunctional vessel sealing system that combines the steps of dissecting, sealing and cutting within a single instrument. Using this instrument ensures that the supracervical hysterectomy and subsequent sealing and cutting of the uterine vessels on both sides can be

performed reliably and with practically no bleeding. A monopolar sling is used to resect the corpus from the cervix.

The second stage of the operation is implanting the mesh. This involves the following steps: Finding the promotorium. Tunneling into the peritoneum outward from the promotorium in the direction of the cervix with a 5 mm overlong Overholt clamp, which is inserted cranially over the camera through the 5 mm working trocar. After that, the mesh is inserted via the left-hand 12 mm working trocar, using the tunneled peritoneum as the access point for the right arm.

Before the remaining steps are performed, the patient is placed in the maximum Trendelenburg position (assistance of anesthesia).

Four single interrupted sutures are used for laparoscopic fixation in the area around the cervical stump. Three platinum spirals are then used to secure the right arm at a height between the S1 and S2 vertebrae. The anatomical structures (rectum and ureter) make fixation more difficult on the left-hand side. After adhesiolysis using the Caiman® and exposure of the left ureter, the left side is tunneled as well, and the left arm is secured at the same height as the right using three more platinum spirals (Protac).

At the end, peritonealization is performed in the vaginal stump / cervical area using a continuous stitch. Then the uterus is morcellated and a Robinson-type surgical drain is placed. Finally, the incision sites are closed using single interrupted sutures.

6. OTHER FIELDS OF APPLICATION FOR THE CAIMAN® WITHIN THE EICHSTÄTT HOSPITAL DEPARTMENT OF GYNECOLOGY

We do not only use the Caiman® system in CESA/VASA procedures. Positive experiences with the instrument have led us to begin using it in other procedures as well, either alone or in combination with other endoscopic sealing and cutting instruments:

- Laparoscopic supracervical hysterectomies (LASH)
- Total laparoscopic hysterectomies (TLH) with or without adnexectomies
- Operations on large (benign) ovarian cysts involving partial omentectomies
- Total or partial omentectomies performed due to borderline tumors of the ovary
- Modified bilateral sacropexies for urinary incontinence and descent - CESA/VASA (see: <http://www.cesa-vasa.de/video-tutorial/>)
- Unilateral/bilateral adnexectomies
- Appendectomies performed in context of gynecological operations
- Radical hysterectomies with pelvic and possibly para-aortic lymph node extirpation

REFERENCES / SOURCE INFORMATION

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- Hucke J, Keckstein J. Die endoskopischen Operationen in der Gynäkologie, München, Jena: Urban & Fischer 2000: 332-8.
- Aesculap AG. Informational brochure - Caiman®.



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