

Start	End	Topic	Speakers
08:00	08:10	<b>Brief surgical anatomy</b> for the Reconstructive Surgeon	Elise De
08:10	08:25	<b>SUI</b> a. Burch Colposuspension b. Autologous Fascial Sling for Female Stress Urinary Incontinence c. Anterior Vaginal Wall Suspension Procedure for Stress Urinary Incontinence Associated with Variable Degrees of Anterior Compartment Prolapse	Philippe Zimmern
08:25	08:40	<b>Anterior compartment</b> a. Anterior Colporrhaphy b. Vaginal paravaginal repair c. Laparoscopic paravaginal repair	Elise De
08:40	09:00	<b>Vault/Apex</b> a. Sacrospinous Ligament Vault Suspension b. Iliococcygeus Fixation for Vaginal Vault Prolapse c. High Midline Levator Myorrhaphy for Vault Prolapse Repair d. Alternative non-mesh laparoscopic POP repair Lap USL suspension e. Colpocleisis	Elise De Philippe Zimmern Nikolaus Veit-Rubin
09:00	09:10	<b>Posterior compartment</b> Posterior Colporrhaphy (With or Without Perineorrhaphy)	Nikolaus Veit-Rubin
09:10	09:30	<b>Audience</b> Comment and Videos	Elise De Philippe Zimmern Nikolaus Veit-Rubin

**Aims of Workshop:** This workshop aims to expand the repertoire of surgeons managing prolapse and stress incontinence in the post-mesh era. This video workshop will be organized according to diagnosis and anatomic compartment. A brief overview of anatomy and instrumentation will be given. Videos will then be aired with time for commentary in between. Emphasis will be placed on “how I do it”.

**Background:** After a wave of mesh complications, many surgeons, especially those trained at the height of mesh-based procedures, need to fill gaps in surgical offerings. This workshop aims to expand/reaffirm the repertoire of surgeons managing prolapse and stress incontinence in the post-mesh era.

**Audience Participation:** We have solicited audience submission of audience videos to enrich the discussion. Acceptable videos not aired during the workshop will be presented by Dr. Veit-Rubin for independent review for publication on ICS TV. <https://www.ics.org/education/icsstandardoperatingprocedures/videosops/icsexpresslearningeducationvideo>

**Learning Objectives:** Pelvic surgical anatomy, instrumentation, and options for native tissue repair.

**Target Audience:** Urologists, Gynecologists, Students and Fellows, (Surgical Technique)

**Level:** Intermediate/Advanced/Basic (All)

**Suggested Learning before Workshop Attendance:** Zimmern P, De E, eds. Native Tissue Repair for Incontinence and Prolapse. Case-based technique with video demonstrations. Switzerland: Springer

International Publishing; 2017. DOI: 10.1007/978-3-319-45268-5. (some quoting and paraphrasing in handout)

## **Workshop Schedule**

08:00 **BRIEF SURGICAL ANATOMY FOR THE RECONSTRUCTIVE SURGEON** ELISE JAQUES BILLINGS DE

08:10 **SUI** – PHILIPPE E ZIMMERN

**A. BURCH COLPOSUSPENSION**

**B. AUTOLOGOUS FASCIAL SLING FOR FEMALE SUI**

**C. ANTERIOR VAGINAL WALL SUSPENSION PROCEDURE FOR SUI ASSOCIATED WITH VARIABLE DEGREES OF ANTERIOR COMPARTMENT PROLAPSE**

08:25 **ANTERIOR COMPARTMENT** ELISE JAQUES BILLINGS DE

**A. ANTERIOR COLPORRHAPHY**

**B. VAGINAL PARAVAGINAL REPAIR**

**C. LAPAROSCOPIC PARAVAGINAL REPAIR**

08:40 **VAULT/APEX** ELISE JAQUES BILLINGS DE, PHILIPPE E ZIMMERN, NIKOLAUS VEIT-RUBIN

**A. SACROSPINOUS LIGAMENT VAULT SUSPENSION**

**B. ILIOCOCYGEUS FIXATION FOR VAGINAL VAULT PROLAPSE**

**C. HIGH MIDLINE LEVATOR MYORRHAPHY FOR VAULT PROLAPSE REPAIR**

**D. ALTERNATIVE NON-MESH LAPAROSCOPIC POP REPAIR TECHNIQUES**

**E. COLPOCLEISIS**

09:00 **POSTERIOR COMPARTMENT** NIKOLAUS VEIT-RUBIN

**POSTERIOR COLPORRHAPHY (WITH OR WITHOUT PERINEORRHAPHY)  
“VIENNESE SCHOOL”**

09:10 **AUDIENCE COMMENT AND VIDEOS**

ELISE JAQUES BILLINGS DE

PHILIPPE E ZIMMERN

NIKOLAUS VEIT-RUBIN

## SYLLABUS

### 08:00 BRIEF SURGICAL ANATOMY FOR THE RECONSTRUCTIVE SURGEON ELISE DE

Pelvic floor anatomy is based on a complex, dynamic interplay of organs and their support structures. The surgical approach will only address the anatomic factors. The surgeon's goal is to restore normal vaginal support while preserving its size, depth, axis and elastic properties, aiming to rehabilitate support for urinary, anorectal and sexual functions. The arcus tendineus fascia pelvis (ATFP) runs from the pubic symphysis to the ischial spine and represents the insertion of the pubocervical fascia on the obturator internus muscle fascia. It supports the bladder and vagina laterally, forming the anterolateral vaginal sulcus. Detachment of the bladder from this support is seen in a lateral cystocele, appreciable by palpation of the descending sulcus during Valsalva on exam. It is important to note the position of the ischial spine in relation to the ATFP. The ATFP is used by some as an anchoring stitch for the Kelly-Kennedy plication, it provides the lateral support in a vaginal paravaginal repair and is also the site of graft attachment in many non-native tissue repairs. The commonly called uterosacral and cardinal ligaments are ligament-like structures formed by a condensation of the hypogastric fascia that suspends the pericervical ring and/or upper part of the vagina (paracolpium). The uterosacral ligament (USL) fibers are oriented in a ventral to dorsal direction, arise from the anterior sacral aspect at the level of the greater sciatic foramen medial to the sacral foramina, and contain fibrous tissue and smooth muscle. The sacrospinous ligament connects the ischial spine and the sacrum. The internal pudendal artery and nerve run posterior to the sacrospinous ligament, close to the spine, and the nerve to the levator ani muscle runs anterior to its medial third. The support of the urethra is contiguous with the anterior vaginal wall and is bridged by the endopelvic fascia fusing into the ATFP.

### 08:10 STRESS URINARY INCONTINENCE – Philippe E. Zimmern (15 min)

#### a. Burch Colposuspension (2min)

Since its description by John Burch in 1961, this procedure has been adopted worldwide for its simplicity of execution and good anatomical results to support the bladder neck/proximal urethra, thus correcting stress urinary incontinence (SUI) secondary to urethral hypermobility. The procedure can be done via a short Pfannenstiel incision or robotically. The concept is to place a series of non-absorbable sutures in the vaginal wall adjacent to the bladder neck/proximal urethra identified by the balloon of a urethral Foley catheter, on each side. One or two sutures are typically placed and can be simple or figure-of-eight. The sutures are then secured to Cooper's ligament on each side and tied with no tension, the goal being to restore a flat support of the anterior vaginal wall and avoid its descending movement with stress efforts which result in a sudden opening of the urethra and subsequent stress leakage. A cystoscopy is recommended to exclude ureteral or bladder injury after the sutures are placed in the vaginal wall. The main risk of the surgery is bleeding from retropubic (Santorini's plexus) or coursing vaginal wall veins. A good exposure is needed, generally aided by a body wall retractor, a headlamp, and long instruments.

#### b. Autologous Fascial Sling for Female Stress Urinary Incontinence (4 min)

This time-honored procedure has remained the "go to" technique for a fixed urethra in a woman suffering from SUI secondary to ISD. The techniques for fascia harvest have varied over the years. From a long fascial graft obtained through a Pfannenstiel incision, many centers have now evolved to a lesser amount of fascial harvest, down to a 2 x 6 cm strip as recommended in the SISTEr trial run by the Urinary Incontinence Treatment Network over a decade ago. This short strip of tissue can also be obtained from the fascia lata with a single short incision two fingerbreadths above the knee joint. The

strip is marked in the midline and sutures are placed at each extremity. The suburethra is exposed via a short inverted U shaped incision. After perforating the periurethral tissues by blunt and/or scissor dissection to get access to the retropubic space, the suspension sutures are transferred suprapubically to a short suprapubic incision aided by a ligature carrier passed under fingertip controlled. After securing the fascia to the undersurface of the urethra to avoid bunching or twisting of the graft, cystoscopy confirms adequate positioning and no suture entry in the bladder anteriorly. Then before or after closure of the vaginal incision, the sutures are tied with a variety of “tricks” from loose to tight depending on the clinical condition, patient age, bladder contractility parameters, patient expectation for continence outcomes, and potential skill set to conduct intermittent catheterization for a lifetime should retention occur postoperatively.

c. **Anterior Vaginal Wall Suspension Procedure** for Stress Urinary Incontinence associated with Variable Degrees of Anterior Compartment Prolapse (4min)

For those interested in a vaginal equivalent of the Burch suspension, with the additional support of the bladder base to completely support not just the bladder neck area but also the whole anterior vaginal wall from bladder neck to vaginal apex, this is the ideal procedure. It started with a “four corner” technique as described by Dr Shlomo Raz. In the current procedure, it evolved towards a different suture placement to avoid suture pull-through. Specifically, instead of placing one suture passed 3 times over and over on the same site at each “corner of the vagina” (distally and proximally), each of the 4 sutures of this modified technique follows the best securement findings as discovered in an animal fascia model back in 1989. Accordingly, each suture is passed in a helical fashion over 2-3 cm length of anterior vaginal wall to secure a solid anchor and prevent suture pull-through. The rest of the procedure is similar. The retropubic space is freed to allow anterior vaginal wall elevation with no tension. The sutures are passed simply under finger guidance using a double-prong ligature carrier introduced through a short midline suprapubic incision. After cystoscopy confirms no suture entry in the bladder during the transfer of the sutures from the vagina to the suprapubic region, the sutures are tied loosely over a rubber shod right-angle clamp to provide flattening of the anterior vaginal wall back to an Aa -3 while avoiding over-elevation. This native tissue repair is very flexible, can be used in several different scenarios, with or without uterine preservation, in obese women, and even with detrusor underactivity since there is no impact on voiding, therefore no risk of durable secondary retention. In addition, long-term data based on questionnaires and standing bladder imaging have shown excellent urethra and bladder base support durability, with a low incidence of secondary leakage mostly due to intrinsic sphincter deficiency (ISD).

**08:25 ANTERIOR COMPARTMENT - Elise Jaques Billings De (15 min)**

a. **Anterior colporrhaphy**

The objective of the anterior colporrhaphy is to fold and tighten the layers of the vaginal muscularis and adventitia overlying the bladder (also called the pubocervical, pubovesical, or endopelvic fascia). This surgical procedure should be tailored to the specific site(s) of anterior compartment defect and is most suited for the central (midline) defect. For example, if a patient has both a midline and paravaginal defect, correcting only the central compartment has high likelihood of recurrence because the lateral defect remains unaddressed. The incision should only be as deep as the vaginal epithelium sparing the underlying fibromuscularis, which has a shiny white surface. Using sharp dissection, undermine the epithelium in the midline, starting at the apex and proceeding distally. The proper plane is typically avascular, so bleeding may indicate incorrect depth under the vaginal wall. Starting at the bladder neck, using a 2-0 or 3-0 delayed absorbable suture (such as polydioxanone or polyglactin), take a bite of the lateral-most aspect of the exposed fibromuscular tissue overlying the

bladder. This will be just medial to the previously created vaginal flaps. Take a substantial bite, but avoid going excessively deep, as this could inadvertently enter the bladder lumen or obstruct the ureters. Bring the suture across the midline and take a bite directly across on the contralateral side.

**b. Vaginal paravaginal repair**

As the endopelvic fascia weakens and releases from the arcus tendinous fascia pelvis (ATFP), cystocele due to lateral paravaginal prolapse occurs. Reconstitution of the fascial attachments between the vagina and AFTP can be accomplished from the vaginal or abdominal approach depending on surgeon preference. Detachment of any remaining lateral attachments will be necessary to reach the ATFP. Zero PDS sutures are then placed at 1 cm intervals into the ATFP bilaterally starting at ischial spine. If no graft is planned, the sutures are passed into the adjacent pubocervical fascia. Biological grafts can be used to augment this traditional native tissue repair.

**c. Laparoscopic paravaginal repair** (Thanks to Guenther Noe)

The technique on the video is used for incontinence as first choice. Especially for younger women as they often show a lateral defect. The length of the suture line is generally reduced depending on the stage of defect. For apical support we generally perform pectopexy. In young women we use a laparoscopic posterior approach including the deep utero-sacral ligaments.

08:40 **VAULT/APEX** ELISE JAQUES BILLINGS DE, PHILIPPE E ZIMMERN, NIKOLAUS VEIT-RUBIN

**a. Sacrospinous ligament apical suspension**

Sacrospinous ligament vault suspension is a technique to correct post-hysterectomy vaginal vault prolapse or to perform a sacrospinous hysteropexy as a uterine-sparing technique. SSSL consists of an extraperitoneal approach. Vaginal length of approximately 8 cm or more is usually required to ensure that the new apex will reach the sacrospinous ligament without tension to offer adequate support and minimize the risk of failure. The SSL is a firm, somewhat fixed structure that can be identified on pelvic examination between the ischial spine and the lateral border of the sacrum and coccyx. It has a length of 7–8 cm. Decision can be made intraoperatively with the apex reduced manually in the new position as to whether an anterior repair and/or a posterior repair will be necessary.

**b. Iliococcygeus fixation for vaginal vault prolapse**

The iliococcygeus muscle is part of the levator ani complex which also includes the pubococcygeus and puborectalis muscles. It arises from the arcus tendineus of the levator ani and attaches posteriorly to the last two segments of the coccyx. The iliococcygeus can be approached from an anterior or posterior vaginal incision; therefore concomitant anterior or posterior repair is easily facilitated. Iliococcygeus fixation is an excellent method to suspend the vaginal vault, which maintains the vaginal vault axis and preserves vaginal length. A midline incision is made at the apex and extended either anteriorly or posteriorly depending on whether a concomitant anterior or posterior repair is to be conducted. Using a Breitsky-Navratil retractor, the rectum and pararectal fat are swept medially, exposing the iliococcygeus muscle. A single 0-PDS (polydioxanone) suture on a CT-2 needle is placed 1 cm medial and caudad to the ischial spine in the iliococcygeus muscle using a straight, long needle driver. Repair of any enterocele, cystocele or rectocele is now conducted. Repeat cystoscopy should be conducted after repair in any compartment to assess for bladder or ureteral injury. Both iliococcygeal fixation sutures are then tied down towards the ipsilateral fixation point, elevating the vaginal apex.

### **c. High midline levator myorrhaphy for vault prolapse repair**

High midline levator myorrhaphy (HMLM), first described in 1988, is a vaginal surgery for vault prolapse (VP) that does not rely on mesh interposition, avoids the inherent difficulties associated with sacrospinous ligament fixation (SSLF) involving nearby vascular and neural structures, and is well-suited for middle-aged to older women. HMLM keeps the vagina midline and can be done many years after hysterectomy when the uterosacral ligaments are no longer readily identifiable. A midline incision is made overlying the bulging prolapse, extending anteriorly and/or posteriorly as far distally as needed. After opening the enterocele sac, a pack is placed. For a right handed surgeon, a No. 1 absorbable suture is then placed into the levator musculature on the right side and passed over the rectum and secured to the medial edge of the levator muscle on the other side. The suture is left on a stay clamp. A second suture is then placed in a similar fashion 1 cm proximal to the last suture. After this is done, the closure of the enterocele sac is accomplished. A No. 1 polypropylene purse-string suture is pre-placed circumferentially to close the peritoneal cavity and eliminate the enterocele sac. After the peritoneal packs are removed and the purse-string suture cinched down, a dye (e.g. fluorescein) is administered intravenously and cystoscopy is carried out to confirm ureteral patency. The two preplaced levator sutures are tied sequentially across the midline. The end of each suture is threaded on a No. 6 curved Mayo needle and then transfixed at the new restored site of the vaginal apex from inside out, approximately 1 cm apart from each other. The proximal and distal ends of each levator sutures are then tied to each other bringing the vaginal vault down over the rebuilt levator plate just underneath the mucosa with direct tissue apposition. If an anterior repair or anti-incontinence procedure is required, it can now be carried out followed by a rectocele repair with perineorrhaphy when indicated.

### **d. Alternative non-mesh laparoscopic pop repair techniques: laparoscopic uterosacral suspension**

Uterosacral ligament vaginal suspension is an elegant reconstructive procedure for apical prolapse which restores the natural vaginal axis using solely native tissue supports. It is suited to women with moderate apical prolapse in which the uterosacral ligaments are likely to be preserved. It can be employed in combination with hysterectomy or in the case of moderate post-hysterectomy vault prolapse. Upon opening the peritoneum, it may then be mobilized and retracted circumferentially, thus allowing the bowel to be packed into the abdomen cephalad using counted laparotomy pads. The position of the left and right uterosacral ligaments is then identified. The ureter may be palpated running lateral to the uterosacral ligament, and along with underlying neurovascular structures are protected by gently tenting the uterosacral ligament away from the retroperitoneal fat using the Allis clamp. Neurologic structures within the uterosacral and cardinal ligaments include autonomic branches from the inferior hypogastric plexus innervating the bladder as well as the plexus itself. Deep to the uterosacral ligament, the sacral nerve roots may be inadvertently encircled during suture placement. In order to avoid ureter injury, needle passage should be directed toward the floor (clockwise needle passage on the patient's left side, and counter-clockwise on the patient's right side), rolling away from the ureter, about one-third to one-half the lateral depth of the tented ureterosacral ligament to prevent compromise of the underlying hypogastric plexus. Upon confirmation of ureteral integrity, the preplaced uterosacral suspension sutures will now be used to re-suspend the vaginal vault. The most proximal uterosacral suspension sutures (closest to the sacrum) will be used to close the most medial or proximal aspect of the vaginal cuff incision.

### **e. Colpocleisis**

Colpocleisis is an obliterative procedure for the correction of pelvic organ prolapse that is uniquely suited to elderly women and those with multiple medical comorbidities in need of an expeditious, durable prolapse repair. Important caveats are highlighted: (1) the patient should have no desire for

future vaginal coital activity; (2) if the uterus is to be retained, a preoperative assessment of the endometrial cavity is prudent; and (3) a concomitant continence procedure is frequently needed, and, thus, one should assess for overt or occult stress leakage preoperatively.

### ***Complete Colpocleisis***

The vaginal apex is delivered outside the introitus using surgical clamps. The vaginal wall is infiltrated with dilute hemostatic solution (e.g., 20 units vasopressin in 50 mL saline). Anteriorly, a transverse vaginal wall incision is made approximately 3 cm cephalad from the external urethral meatus, leaving space for a subsequent continence procedure. Posteriorly, the incision connects at a point approximately 1–3 cm cephalad from the hymenal ring. The entire vaginal epithelium and underlying lamina propria are lifted off using a combination of sharp and blunt dissection, revealing the underlying fibromuscular layer of the vaginal wall. To replace and elevate the vaginal tube, a series of purse-string sutures will be placed using permanent or delayed absorbable suture. Beginning at the apex with the initial suture placement at 12 o'clock, a circumferential stitch is placed. This series of steps repeats, commonly taking 6–8 rings of suture to completely elevate/invert the prolapsed vagina. The vaginal epithelium remaining nearest the introitus is closed with a running 2-0 delayed absorbable suture.

### ***Partial (LeFort) Colpocleisis:***

As above, the vaginal apex (or cervix) is grasped with clamps and delivered as far outside the introitus as possible (Fig. 14.4). Rectangular areas of approximately equal dimensions are delineated with either marker or cautery on both the anterior and posterior vaginal walls. The matching longitudinal edges of the anterior and posterior rectangles are stitched together with interrupted delayed absorbable sutures, which creates lateral vaginal drainage canals. To elevate the uterus and pelvic contents, the surgeon now incorporates successive transverse tiers of interrupted permanent or delayed absorbable suture into the fibromuscular layers, matching the corresponding regions of the anterior to posterior rectangles to each other, beginning nearest the prolapsed vaginal apex (cervix). These progressive rows of interrupted permanent suture continue to approximate the anterior and posterior walls, turning the prolapse from “inside-out” to “right-side-in”. Finally, the vaginal epithelium is closed in a running fashion using 2-0 delayed absorbable suture.

## **09:00 POSTERIOR REPAIR NIKOLAUS VEIT-RUBIN**

Indications for treatment vary, but evidence consistently recommends only treating patients with defecatory symptoms or symptoms of vaginal bulge, regardless of size of rectocele. Management is geared to improve the patient's symptoms; asymptomatic patients can typically be monitored. Patients with minimal anatomic defect but significant defecatory symptoms may benefit from biofeedback without surgical repair. For symptomatic rectocele, traditional posterior colporrhaphy (PC) is the preferred method of management. It has excellent, durable anatomic and subjective outcomes. Mark out the mucocutaneous junction at the posterior vaginal fourchette for the initial transverse incision, particularly if there are plans to correct a perineal defect at the time of surgery. Dissection of the posterior vaginal wall flap is best performed using primarily sharp dissection, with Allis clamps on the epithelial edge to retract the flap superiorly. Alternatively, a midline incision can be useful if the defect extends more proximally along the posterior wall. Digital manipulation of the rectum using the O'Connor shield can help facilitate this step by allowing the defect to be palpated, guiding further dissection. At this point, an avascular plane should be identifiable between the vaginal epithelium and rectocele sac. The proper plane allows the surgeon to free the rectocele completely using blunt dissection. As the sac is dissected, identify the rectovaginal fascia and follow it laterally until its attachment at the arcus tendineus levator ani. If an isolated defect is encountered, then a “site-specific” fascial repair is indicated. Otherwise, traditional plication of the rectovaginal fascia to

reduce the rectocele is most commonly performed; in this situation, we prefer to use an absorbable suture, such as 0 or 2-0 polyglactin (Vicryl®) suture, but a slow-absorbing suture (such as polydioxanone, PDS) is also an option.

#### 09:10 AUDIENCE COMMENTS AND VIDEOS

ELISE JAQUES BILLINGS DE  
PHILIPPE E ZIMMERN  
NIKOLAUS VEIT-RUBIN

#### SUMMARY

Native tissue repairs are the core of what we have to offer our patients with stress incontinence and prolapse and may play a more important role in the future due to the controversies about mesh. This video workshop will provide a full set of procedures and also invite videos from the audience to expand the conversation into native tissue options.

#### Chair:

##### **Elise De, Urologist, United States**

*Prior presentation on same topic at American Urological Course, co-Edited book on same topic Fellowship training in Female Pelvic Medicine and Reconstructive Surgery Director of Urology Education for fellowship in FPMRS, Massachusetts General Hospital, Harvard Medical School Chair, Education Committee, International Continence Society 14 year history training Urology residents in reconstructive surgery*

#### **Own Products:**

1. Zimmern P, De E, eds. *Native Tissue Repair for Incontinence and Prolapse. Case-based technique with video demonstrations.* Switzerland: Springer International Publishing; 2017. DOI: 10.1007/978-3-319-45268-5.

- Dobberfuhr AD, De EJ. Female stress urinary incontinence and the mid-urethral sling: is obstruction necessary to achieve dryness? *World J Urol.* 2015 Sep;33(9):1243-1250. PMID: 26025190.
- Chen A, McIntyre B, De EJB: Management of postoperative lower urinary tract symptoms (LUTS) after pelvic organ prolapse (POP) repair. *Curr Urol Rep* (2018) 19. PMID:30043287
- Aleksic I, De EJ. Surgical management of female voiding dysfunction. *Surg Clin North Am.* 2016 Jun;96(3):469-490. PMID: 27261789.

#### Speaker 1:

##### **Philippe Zimmern, Urologist, United States**

*Dr Zimmern, MD is Professor of Urology at the University Texas Southwestern Medical Center at Dallas and the Director of the Bladder and Incontinence Treatment Center. Dr Zimmern received his medical training and completed his doctoral thesis at the Necker-Enfants Malades Hospital in Paris, France. After completing a urology residency training program in France, Dr. Zimmern spent a fellowship year at UCLA with Dr. Shlomo Raz. Dr. Zimmern assumes journalistic responsibility for several journals of Urology in France and the United States. He has co-authored over 350 peer reviewed publications now, 67 book chapters, and 27 films on female urology reconstructive procedures related to the management of incontinence and vaginal prolapses, and has co-edited multiple books. Dr. Zimmern, in association with Dr. Lemack, directs a two-year ACGME approved program in Female pelvic medicine and reconstructive surgery.*

#### **Own Products:**

*Zimmern P, De E, eds. Native Tissue Repair for Incontinence and Prolapse. Case-based technique with*



video demonstrations. Switzerland: Springer International Publishing; 2017. DOI: 10.1007/978-3-319-45268-5.

- Neurourol Urodyn. 2018 Feb 21. doi: 10.1002/nau.23534. [Epub ahead of print] Synthetic mid-urethral sling complications: Evolution of presenting symptoms over time. Wang C1, Christie AL1, Zimmern PE1.
- Int Urogynecol J. 2018 Jun;29(6):859-864. doi: 10.1007/s00192-017-3413-5. Epub 2017 Jul 10. Is pain relief after vaginal mesh and/or sling removal durable long term? Jong K1, Popat S1, Christie A1, Zimmern PE
- Phys Med Rehabil Clin N Am. 2017 Aug;28(3):603-619. doi: 10.1016/j.pmr.2017.03.010. Epub 2017 May 27. Iatrogenic Pelvic Pain: Surgical and Mesh Complications. Lee D1, Chang J1, Zimmern PE2

### **Speaker 2:**

#### **Nikolaus Veit-Rubin, Gynaecologist, Austria**

*Dr. Veit-Rubin studied Medicine at the Medical University of Vienna. He completed residency in obstetrics and gynaecology at the Geneva University Hospitals in Switzerland with a subsequent specialisation in urogynaecology including a fellowship at the department of Urogynaecology at Imperial College in London, UK. He has been working as a senior urogynaecologist in Lausanne, Switzerland (Vaud University Hospital) and currently at the Medical University of Vienna. His research focus is on innovative techniques in pelvic organ prolapse repair and the role of the microbiome in lower urinary tract symptoms. I am conducting several surgical courses for laparoscopic and vaginal reconstructive and incontinence surgery. He has been actively involved with the ICS since 2015 as a member of the Education Committee and is currently serving as director of the school of female pelvic health within the ICS institute.*

#### **Own Products:**

*None, just own technique*

- Int Urogynecol J. 2018 Oct 8. doi: 10.1007/s00192-018-3765-5. [Epub ahead of print] Rouhier's colpocleisis with concomitant vaginal hysterectomy: an instructive video for female pelvic surgeons. Constantin F1, Veit-Rubin N2, Ramyeed L3, Dubuisson J
- Int Urogynecol J. 2016 Oct;27(10):1469-78. Association between joint hypermobility and pelvic organ prolapse in women: a systematic review and meta-analysis. Veit-Rubin N1, Cartwright R2, Singh AU2, Digesu GA2, Fernando R2, Khullar V
- Neurourol Urodyn. 2018 Jun;37(S4):S93-S98. doi: 10.1002/nau.23708. Is the microbiome influencing patient care in lower urinary tract dysfunction? Report from the ICI-RS 2017. Ford AA1, Veit-Rubin N2, Cardozo L3, Khullar V