



Reconstructive Pelvic Floor Surgery: Sacrocolpopexy

W43, 16 October 2012 14:00 - 18:00

Start	End	Topic	Speakers
14:00	14:30	Introduction, Evidence and Applied Anatomy	• Salma Kayani
14:30	14:50	Applied Anatomy	• Vincent Delmas
14:50	15:00	Questions	All
15:00	15:30	Laparoscopic Sacrocolpopexy for Pelvic Floor Repair	• Elisabetta Costantini
15:30	16:00	Break	None
16:00	16:30	Conventional Laparoscopic Sacrocolpopexy	• Bruno Deval (Co-Chair)
16:30	17:00	Robotic-Assisted Sacrocolpopexy, Sacrohysteropexy-Techniques, Outcomes and Learning Curve	• Stergios Doumouchtsis
17:00	17:15	Morbidity Associated with Laparoscopic Sacrocolpopexy	• Salma Kayani
17:15	17:40	Conclusion and Take Home Message	• Bruno Deval (Co-Chair)
17:40	18:00	Discussion	All

Aims of course/workshop

Key Learning points:

This seminar will bring together experts in laparoscopic and laparotomic surgery for POP with emphasis on Sacrocolpopexy. The seminar will discuss various aspects:

1. Patient selection
2. Various types of techniques for each laparoscopic and laparotomic procedure
3. Proactive rather than reactive surgical management to reduce complication rate
4. Troubleshooting
5. Discussion regarding complications

Educational Objectives

The seminar will give an overview of the laparoscopic and laparotomic techniques for POP with particular emphasis on Sacrocolpopexy. The discussions will be evidence based and will allow the participants to debate, ask questions and learn tips & techniques from the experts. The interactive sessions will be supported with videos and detailed explanations of various techniques- both laparoscopic and laparotomic. The use of mesh in laparoscopic, laparotomic and robotic surgery will be demonstrated. At the same time various suturing techniques will also be discussed. The three approaches (abdominal, laparoscopic and robotic) for Sacrocolpopexy will be presented by experienced surgeons in the field.

Reconstructive Surgery of Female Pelvic Floor Prolapse: Sacrocolpopexy *Introduction and Evidence*

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MSc, DFS&RH, MRCOG
Consultant Gynaecologist
Advanced Minimal Access Surgeon
in Excisional Benign Gynaecology
UK

Background

POP is seen in 50% of parous women

• Beck 1991

10-30 per 10,000 women

• Brubaker 2002

Up to 300 000 women undergo surgery for pelvic organ prolapse in the USA each year.

Incidence & Recurrence

By age 80, women have an 11% risk of either POP surgery or urinary incontinence surgery. Of these 11% almost a third of the women have a second surgery- Olsen 1997, Brubaker 2006

Treatment for vaginal prolapse is associated with a high recurrence rate, with the reoperation rate reported at 17% within 10 years, although even this was considered to underestimate the true rate (Denman et al, 2008)

RULE OF 11

Women have an **11%** lifetime risk of pelvic organ prolapse surgery.

Women who undergo surgery for pelvic organ prolapse are at **11%** risk of requiring a re-operation within the next **11** years, **usually at a different site.**

Historical -Ancient Egypt

Kahun Gynaecological Papyrus (2000 BC)

- Pelvic organ prolapse and its consequences have been reported since 2000 BC.



Ebers Papyrus (1500 BC)

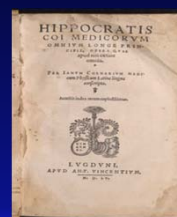
- An Egyptian Medical Papyrus. Among the oldest and most important medical papyri of ancient Egypt.



Historical Background

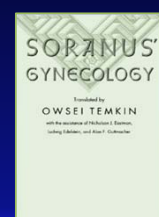
Ἱπποκράτης; Hippokratēs (470- 360 BC)

- Described numerous nonsurgical treatments for pelvic organ prolapse.

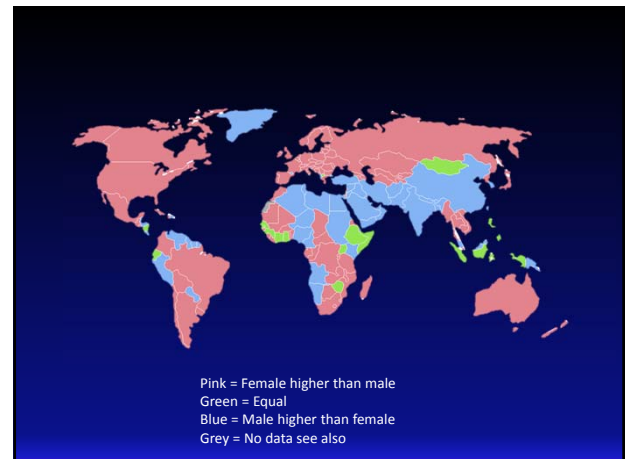


Soranus of Rome (98-138 AD)

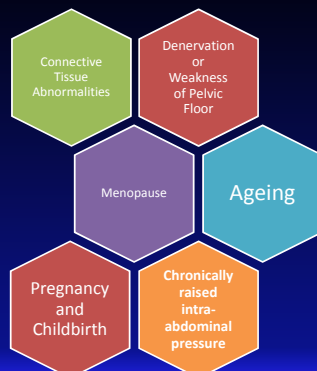
- first described the removal of the prolapsed uterus when it became black.



- From the early 1800s through the turn of the century, various surgical approaches have been described to correct pelvic organ prolapse.



Aetiology of Pelvic Organ Prolapse



Surgery (Herniation)

- Protrusion of a viscus in part or whole through a normal or abnormal opening in relation to the abdomen
- Demonstrations of Physical Signs in Clinical Surgery
Professor Hamilton Bailey
17th Edition
- Complications of Surgery
 - Laparoscopic
 - Robotic
 - Sexual Function



- Current treatment options for upper vaginal prolapse include
 - pelvic floor muscle training (PFMT)
 - use of pessaries (mechanical devices such as rings or shelves)
 - Surgery
- Surgical repair with **mesh** include:
 - Sacrocolpopexy
 - Infracoccygeal sacropexy (also known as Posterior IntraVaginal Slingplasty, IVS);
 - Uterine suspension sling (including sacrohysteropexy); and
 - Other mesh techniques such as sacrocolpoperineopexy.
- Surgical repair without **mesh** include:
 - Hysterectomy
 - Cervical amputation (often called Manchester repair); and
 - Uterine/vault suspension (without sling)(Sacrospinous colpopexy)



Doctors Doing Harm Since Hippocrates

DAVID WOOTTON

Just how much good has medicine done over the years, and how much harm does it continue to do?

The Straight and Narrow Evidence Based Medicine



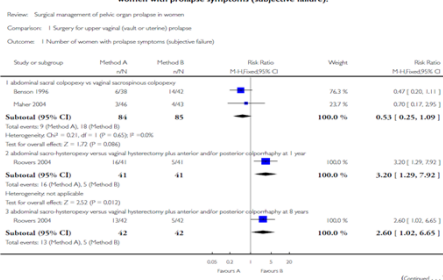
Two Reviews



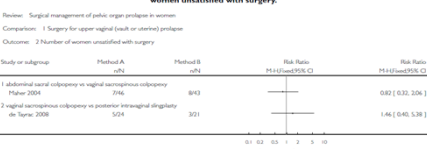
Cochrane Review- 40 RCT

- **Comparison 1:** One type of upper vaginal prolapse repair versus another (15 RCTs)
 - Abdominal SCP vs Vaginal Sacrospinous Colpopexy
 - Abdominal SCP+ Abdominal hysterectomy vs Mayo McCall+ Vaginal hysterectomy + ant + post repair
 - Uterine suspension vs vaginal hysterectomy
 - Abdominal uterine suspension vs vaginal hysterectomy and repair
 - Vaginal Sacrospinous uterine suspension vs vaginal hysterectomy
 - Hysterectomy with High Levator Myorrhaphy vs hysterectomy with uterosacral vault suspension
 - Open Abdominal sacral colpopexy vs Laparoscopic Sacral Colpopexy
 - Vaginal sacrospinous colpopexy vs Posterior IntraVaginal Slingplasty (infracoccygeal sacropepy)
 - Prolapse repair without continence surgery vs prolapse repair with any continence surgery
 - One type of graft vs another type of graft in Sacrocolpopexy

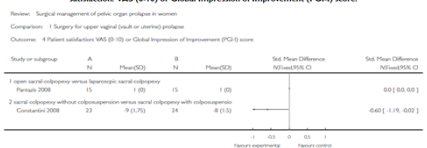
Analysis 1.1. Comparison 1 Surgery for upper vaginal (vault or uterine) prolapse, Outcome 1 Number of women with prolapse symptoms (subjective failure).



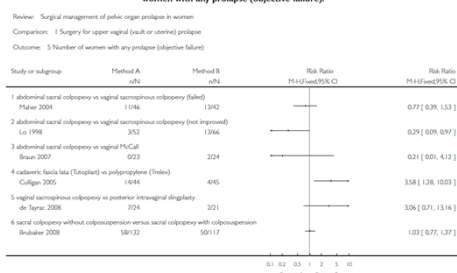
Analysis 1.2. Comparison 1 Surgery for upper vaginal (vault or uterine) prolapse, Outcome 2 Number of women unsatisfied with surgery.

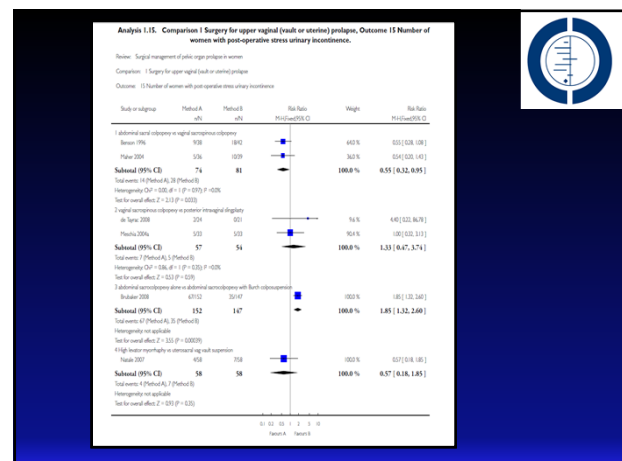
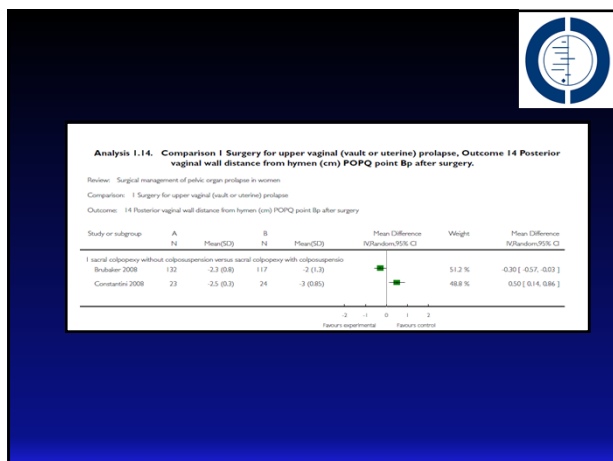
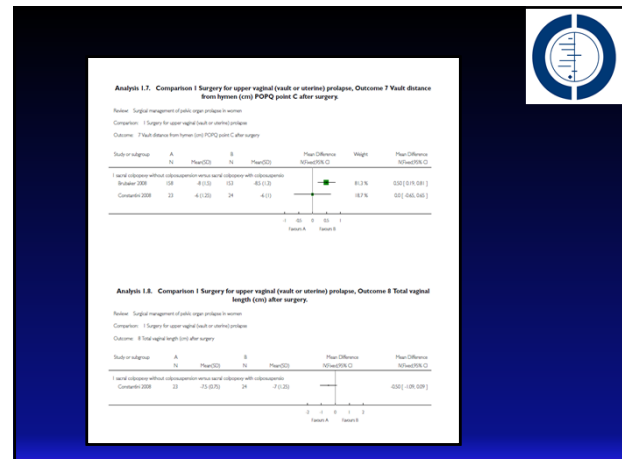
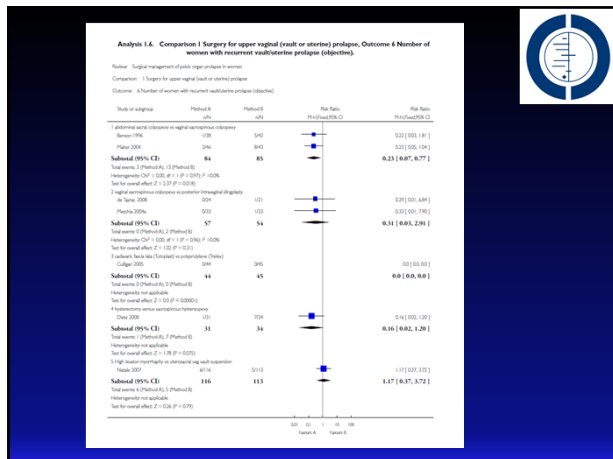


Analysis 1.4. Comparison 1 Surgery for upper vaginal (vault or uterine) prolapse, Outcome 4 Patient satisfaction: VAS (0-10) or Global Impression of Improvement (PGI-I) score.



Analysis 1.5. Comparison 1 Surgery for upper vaginal (vault or uterine) prolapse, Outcome 5 Number of women with any prolapse (objective failure).





Abdominal Sacro Colpopexy

Pros

- Lower recurrent vault prolapse
- Reduced grade of residual prolapse
- Greater length of time to recurrence
- Lower incidence of dyspareunia than vaginal sacrospinous colpopexy

Cons

- Longer operating time
- Longer time to return to daily activities
- Increased cost

Abdominal SCP

- Less post op stress incontinence
- Lower re operation rate in the abdominal group (did not reach statistical significance)
- Less recurrence with mesh

Remains to be assessed



- Value of the addition of a continence procedure to a prolapse repair operation in women who are dry before operation

Sacro Colpopexy



Study Design	RCT (full text)	RCT (conference abstracts)	Non randomised comparative studies	Case series with sample size ≥ 100	Case series with sample size <100	Sub total
Uterine Repair	0	1	2	1	0	4
Vault Repair	2	0	3	2	0	7
Uterine or vault repair	2	0	10	9	0	21
TOTAL						32

Sacro Colpopexy



- 4456 women
- Average follow up 2 years (8-66 months)

Mesh Sacro Colpopexy



- **Objective failure:** range 0% to 6% at an average follow up of two years,
- **Subjective failure:** range 3% to 31%
- **No evidence** of a statistically significant difference between SCP (mesh) and sacrospinous colpopexy (no mesh) in subjective and objective failure **but the numbers were small.**
- Need for further prolapse surgery: range 2% to 14%
- **Risks** from adverse effects such as
 - blood transfusion (range 0% to 17%)
 - infection (range 1% to 69%)
 - mesh erosion (range 4% to 12%) and
 - the need for a further operation for mesh erosion (range 1% to 11%).

SCP Safety



- The proportion of women who required a **blood transfusion** for sacrocolpopexy ranged from **0% to 17%** (19 studies, n=2080).
- The range for women with **organ damage** varied from **0% to 7.9%** (15 studies, n=1723).
- **Mesh erosion** occurred in **0% to 12%** of women (27 studies, n=2922), of whom 0% to 11% required an operation for mesh erosion (17 studies, n=2074).
- **New urinary symptoms** in women who did not have these symptoms at baseline occurred in **3.8% to 9.2%** (4 studies, n=294).
- The estimate for **new bowel symptoms** (**1.1%**, 2/178) was based on a single study, and the estimate for new sexual symptoms (range 9.1% to 15%, n=87) was based on 2 small studies
- The range of **infection** was wide (0.8% to 68%, 17 studies, n=1391).

SCP: Operation time & hospital stay



- **Average operation time:**
 - varied from 89 minutes to 267 minutes (based on 15 studies)
- **Average hospital stay after sacrocolpopexy**
 - ranged from 1 to 7 days.
 - majority of the studies reported 3 to 5 days (11/14 studies).



SCP Safety & Efficacy

NHS
National Institute for
Health and Clinical Excellence

- Current guidance for using mesh for SCP for vault repair is adequate, provided the arrangements are in place for clinical governance and audit
- Clinicians should ensure patients understand that there is risk of recurrence and complication such as mesh erosion
- Carried out by surgeons specialising in the management of POP and female urinary incontinence
- This evidence on efficacy and safety is limited to 5 years.

SCP with hysterectomy

NHS
National Institute for
Health and Clinical Excellence

- Current evidence on the safety and efficacy of SCP with hysterectomy using mesh for uterine prolapse repair is inadequate in quantity and quality. This procedure should only be used with special arrangements for clinical governance, consent and audit or research.
- Clinicians wishing to undertake this procedure should inform their clinical governance leads and ensure patients understand the uncertainty re the procedure
- BSUG database
- Procedure should be carried out by surgeons specialising in the management of POP and female urinary incontinence.
- NICE encourages future research in SCP with hysterectomy using mesh.



- Abdominal SCP and SSF should be considered in terms of their relative benefits and risks. **(RBP)**
- Abdominal SCP is an effective operation for post-hysterectomy vaginal vault prolapse. In comparison, SSF may have a higher failure rate but has lower postoperative morbidity. **(Grade A evidence)**



Lo 1998, Level 1b

- N=138
- Follow Up: 1-5.2 years, average 2.1 years
- Abdo SCP > SSF (Better objective cure)
- SSF: more blood loss, longer catheterisation, longer hospital stay, more sexual dysfunction



Maier 2004, Evidence Level 1 b

Abdominal SCP

- Longer op time
- Slower return to normal activities
- Higher Cost
- Complications:
 - Bladder injury (1)
 - Incisional hernia (2)
 - Mesh rejection (1)
 - Wound infection (1)

Sacro Spinous Colpopexy

- No difference in
 - Objective cure
 - Subjective cure
 - Urinary, bowel, sexual function, QoL
- Complication
 - Blood transfusion (1)
 - Bladder injury (1)
 - Rectovaginal haematoma (1)
 - Vaginal pain (1)



Criteria considered when helping women choose between two procedures

Abdominal Sacro Colpo Pexy

- Mesh can be extended anteriorly and posteriorly, however concomitant vaginal repair can be undertaken
- Laparotomy can be used to do another procedure at the same time
- Operative morbidity reduced with laparoscopic surgery
- More suited for sexually active women (as SSF is associated with exaggerated retroversion of vagina leading to less physiological)
- Vaginal length maintained



Vaginal Sacro Spinal Fixation

- Requires: adequate vaginal length & vault width to enable reaching the SS ligament.
- Coexistent ant and post wall prolapse can be managed at the same time, but this may cause shortening and narrowing leading to dyspareunia
- Suitable for frail patients
- No difference in pain

Are laparoscopic procedures recommended? (RCOG)

- Clinicians should be aware that laparoscopic procedures involve a high level of expertise and longer operation times. Lap SCP appears to be as effective as open SCP. **(B)**
- The ureters are particularly at risk during laparoscopic uterosacral ligament suspension **(B)**



Laparoscopic SCP-Evidence Level III

- Enhanced view
- More anatomical repair
- Less scarring
- Reduced post op morbidity
- Shorter hospital stay
- Requires skill, training, longer op time
- Same technique as open, therefore as effective (RCTs awaited)
- Conversion to open is 8% but become 1% with experience
- Complications: bladder and bowel injury, wound haematoma, UTI



Grade A -Research recommendations

- Sacrocolpopexy based abdominal POP surgery is likely to result in a better and possibly more durable anatomical outcome than Sacrospinous based vaginal reconstruction



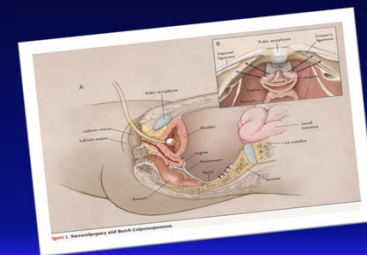
Patient selection

- Patient assessment
- Skill
- Women's choice: priorities/attitudes
- Facilities/healthcare systems



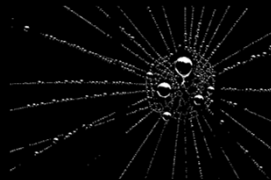
Technique

- Dissection
- Reconstruction



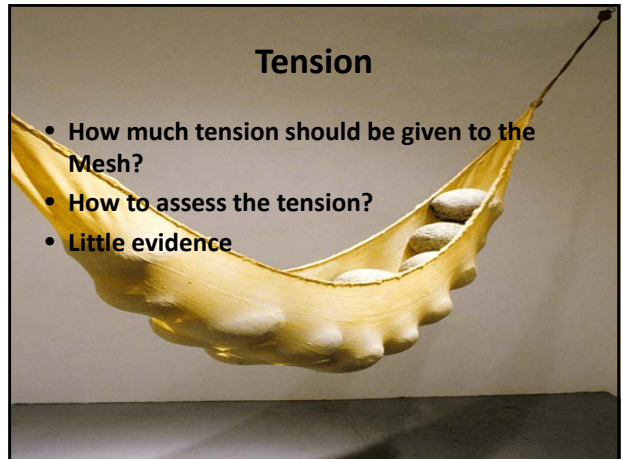
Mesh

- Types of Mesh?
- Mesh Size?
- Mesh Surface?
- Where to attach the mesh?
 - Vagina
 - Promontory
 - Pelvic floor
- How to attach the mesh?



Tension

- How much tension should be given to the Mesh?
- How to assess the tension?
- Little evidence



Peritonealisation?

- Does the peritoneum need closure?
- Evidence?



Stress Incontinence

- Does it improve/worsen after SCP
- When to treat it at the time of SCP
- When to leave it, and to perform it as a second procedure



Outcome

- Long term results
 - Structure
 - Function
- Questionnaire QOL
 - Pre Op
 - Post op



Surgery for Pelvic Organ Prolapse Colposacropexy Hysterocolposacropexy

Elisabetta Costantini
Head of Uro-Gynaecological Section
Department of Urology
University of Perugia - Italy

POP SURGERY

What about the best surgical technique in advanced pelvic organ prolapse ?

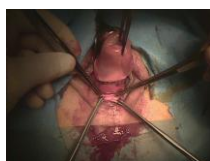
Despite the prevalence of the problem, and an estimated failure rate for primary surgery of 30%, there is a disappointing lack of consensus about the best surgical technique



The vaginal route: the common route



Vaginal Hysterectomy



Central or superior defect De Lancey Level 1 correction

- What can we do without meshes:
 - Utero-sacral ligament suspension
 - Ileococcygeus ligament suspension
 - Sacrospinous ligament suspension
 - Douglas Obliteration

Vaginal Suspensions LoE 3

- Ileococcygeous and sacrospinous suspensions gave high cure rate with different recurrent-rates overall for the anterior compartment
- Uterosacral suspension gave high cure rate (more ureteral complications)

No evidence among the transvaginal suspension that one is better than the other one

Vaginal mesh kits

- What can we do with meshes:
 - Different kind of kits are available
 - The majority are polypropylene meshes
 - Size and shape are different
 - The majority have trans-obturator passages anteriorly and fixation to the sacrospinous ligament posteriorly



What's the evidence?

- **Abdominal sacrocolpopexy** results in a better anatomical outcome than the vaginal sacrospinous colpopexy. It is the gold standard for vaginal vault prolapse with fewer recurrent prolapses and less dyspareunia
- **Vaginal prolapse repairs** are often faster, less costly, less painful and offer patients a shorter recovery time
- **Laparoscopic sacrocolpopexy** aims to bridge this gap and provide the excellent outcomes of ASC with decreased morbidity (little comparative data available)

Cochrane review 2010

Cochrane 2010

- The evidence suggested that the use of an absorbable polyglactin mesh overlay, absorbable porcine dermis or polypropylene mesh at the time of anterior vaginal wall repair **may reduce the risk of recurrent cystocele** on examination
- Improved outcomes including patient satisfaction, quality of life and reduced operations for recurrences **have not yet been demonstrated**

Results 2010 review

- 38 RCTs totaling 3773 women
- 17 new trials (1586 women)
- 3 major updates of prior work (680 women)



The evidence is not sufficient to support the use of permanent meshes or grafts at the time of vaginal apical compartment repair surgery except in the context of controlled randomised controlled clinical trials

FDA Safety Communication: UPDATE on Serious Complications Associated with Transvaginal Placement of Surgical Mesh for POP Date Issued: July 13, 2011

In order to better understand the use of surgical mesh for POP and SUI, **the FDA conducted a systematic review** of the published scientific literature from 1996 to 2011 **to evaluate its safety and effectiveness**

Recommendations for Health Care Providers

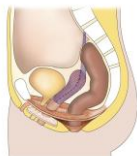
- Obtain **specialized training** for mesh placement technique, and be aware of the risks of surgical mesh
- Be vigilant for potential adverse events

Inform patients that:

- Implantation of surgical **mesh is permanent**, some complications associated with the implanted mesh may require additional surgery that may or may not correct the complication
- The potential for **serious complications** and their effect on QoL, including pain during sexual intercourse, scarring, and narrowing of the vaginal wall
- The **benefits and risks** of non-surgical options, non-mesh surgery, surgical mesh placed abdominally. **"Mesh placed abdominally may result in lower rates of complications compared to transvaginal POP surgery with mesh"**
- Provide patients with a copy of the patient labeling from the surgical mesh manufacturer if available

Central or superior defect Surgical techniques

Sacrocolpopexy



- THE ABDOMINAL ROUTE
- THE LAPAROSCOPIC ROUTE
- THE ROBOTIC ROUTE

GOALS OF RECONSTRUCTIVE PELVIC SURGERY



1. Restore **Anatomy**
2. Restore, improve or maintain visceral or sexual **Function**
3. Avoid/prevent causing or worsening **other compartment disorders**
4. Improve long-term **QoL**

Does CSP meet these expectations?

YES

The Evidence!

- Abdominal Integral pelvic floor reconstruction results in excellent and durable anatomical outcomes and functional results

My experience

Anatomical correction

Vault prolapse corrected?	YES	100%
Anterior central defect corrected?	YES	96%
Anterior lateral defect corrected?	YES	95%
Posterior defect corrected?	YES	89%

Functional results

Incontinence corrected?	YES	76%
Voiding dysfunctions corrected?	YES	95%
Storage symptoms corrected?	YES	83%
Sexual dysfunctions corrected?	YES	87%
Bowel disorders corrected?	YES	85%

OUR EXPERIENCE

Colposuspension

Colposuspension with Gore-Tex Mesh in Mixed Vaginal and Uterovaginal Prolapse

Abstract
Purpose: To evaluate the efficacy of colposuspension with Gore-Tex mesh in mixed vaginal and uterovaginal prolapse.

Clinical Study

Pelvic Organ Prolapse Repair with and without Concomitant Burch Colposuspension in Incontinent Women: A Randomized Controlled Trial with at Least 5-Year Followup

Abstract
Purpose: To evaluate the efficacy of pelvic organ prolapse repair with and without concomitant Burch colposuspension in incontinent women.

Must Colposuspension Be Associated with Sacrospinous Ligament Plication to Prevent Postoperative Urinary Incontinence?

Abstract
Purpose: To evaluate the efficacy of colposuspension with sacrospinous ligament plication in preventing postoperative urinary incontinence.

Uterus Preservation in Surgical Correction of Unilateral Prolapse

Abstract
Purpose: To evaluate the efficacy of uterus preservation in the surgical correction of unilateral prolapse.

Burch Colposuspension Does Not Provide Any Additional Benefit to Pelvic Organ Prolapse Repair in Patients With Urinary Incontinence: A Randomized Surgical Trial
Abstract
Purpose: To evaluate the efficacy of Burch colposuspension in patients with urinary incontinence.

The correct surgical technique is the crucial point

An evolution of the technique

- From a simple Colposacropexy to an Integral Pelvic Floor Reconstruction
- From the Abdominal route to the Laparoscopic route.... And Robotic!!

From a simple Colposacropexy to an Integral Pelvic Floor Reconstruction

The surgical technique

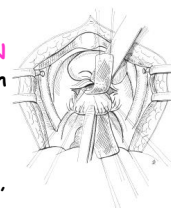
How and why does CSP work?

SUPPORT AND SUSPENSION

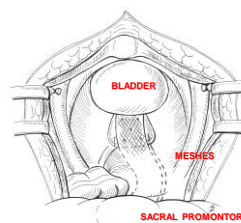
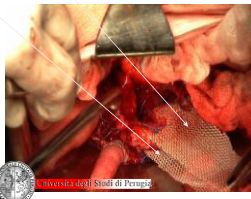
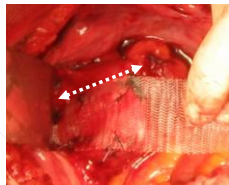
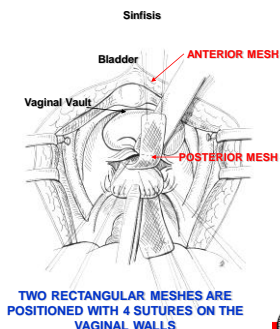
Obtained using the meshes which are able to replace broken ligaments

CORRECTION

Anterior and posterior segments, central and lateral defects and vault, uterine prolapse and enterocele

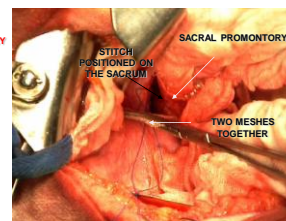


Vault prolapse



MESHES ARE POSITIONED BELOW SACRAL PROMONTORY

THE MESHES ARE THEN RETROPERITONIZED



Uterus Preservation in Surgical Correction of Urogenital Prolapse
 Elisabetta Conturbati¹*, Luigi Morini², Vittorio Bini³, Alessandro Zucchi⁴,
 Simone Mariani⁵, Massimo Perra⁶
 *Department of Obstetrics, University of Perugia, Via Alessandro IV, 06100 Perugia, Italy
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 5Department of Obstetrics, University of Perugia, Via Alessandro IV, 06100 Perugia, Italy
 6Department of Obstetrics, University of Perugia, Via Alessandro IV, 06100 Perugia, Italy

THE LANCET Hysterectomy and stress urinary incontinence. Lancet 2008

Uterus sparing surgery: a challenging approach to pelvic organ prolapse repair. Remedica publishing group.

Uterovaginal prolapse in a woman desiring uterus preservation. Expert discussion. Int Urogynecol J 19:1465-70, 2008

Urogenital prolapse surgery: update on post-operative urinary incontinence. Eur Urol Review touch briefing 3(1):74-76, 2008

Uterus preservation in pelvic organ prolapse surgery
 Nat.Rev.Urol. 7, 626-633, 2010

Int J Gynaecol. 2010;116(4):1000-1001
 DOI: 10.1093/ogid/ogk017

ORIGINAL ARTICLE

Five-year outcome of uterus sparing surgery for pelvic organ prolapse repair: a single-center experience

Elisabetta Conturbati¹, Massimo Lazzari²,
 Alessandro Zucchi³, Vittorio Bini⁴, Luigi Morini⁵,
 Massimo Perra⁶

Hysterocolposacropexy (HSP)

Why uterus preservation?

- To avoid the opening of the vagina
- Hard tissue for the sutures
- Woman's desire



WHY Preserve the uterus?

1. Uterus is a "central" element in pelvic statics. Preserving the uterus means preserving normal pelvic anatomy and function
2. Surgery:
 - Easier technique
 - Shorter operating time and hospital stay
 - Less blood loss
 - Fewer post-operative complications (less erosions)
 - Major considerations in elderly women or patients with concomitant pathologies

Hysterectomy and the associated pelvic floor dissection may increase the risk of pelvic neuropathy and disrupt natural support structures such as the uterosacral cardinal ligament complex. Nesbitt 1989

WHY ?

3. Because we must take the woman's point of view into account. If given the option, some women choose to avoid hysterectomy because of the:
 - Delay in childbearing until a later age
 - Psychological impact because the uterus is an integral part of the female identity
 - A belief that the uterus plays a role in sexual satisfaction

Let's change the question!

Ask no more "Why remove uterus?"

Ask "Why remove a healthy organ that can be preserved?"

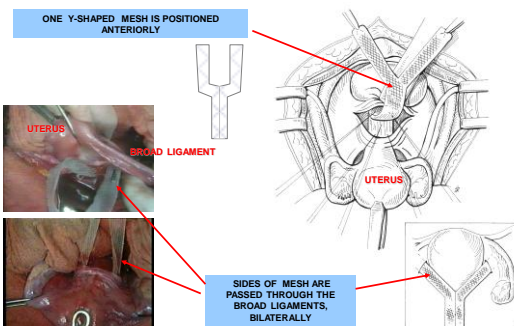
HOW ?



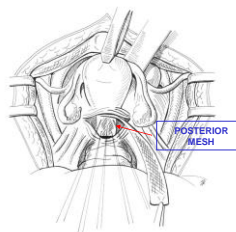
VAGINAL
ABDOMINAL
LAPAROSCOPIC
ROBOTIC

HYSTEROCOLPOSACROPEXY

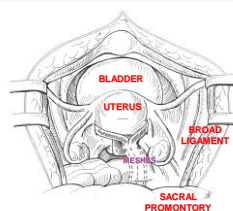
Incise visceral peritoneum at uterine Isthmus.
Prepare anterior and posterior vaginal walls



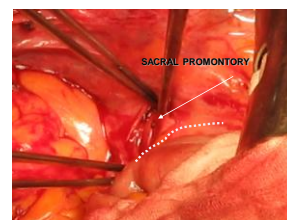
Posterior Mesh




POSTERIOR MESH



**Fixation of the meshes to
sacral promontory**

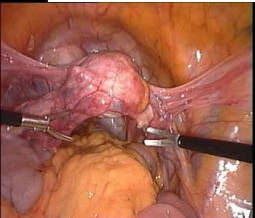




The evolution

- **From the Abdominal route to the Laparoscopic route**
- **From Laparoscopy to Robotic!!**

Laparoscopic CSP



Is it an alternative?

[illegible]

Long-term anatomical and functional results of laparoscopic promotofixation for pelvic organ prolapse

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Accepted for publication 12 October 2009

Study Type: – Therapy (case series)
Level of Evidence: 4

OBJECTIVE

To assess the long-term anatomical and functional outcomes of laparoscopic promotofixation (PF) for pelvic organ prolapse (POP) and the long-term safety of LP as POP is a common problem in women of all ages, with treatment including vaginal, abdominal, laparoscopic or robotic surgical approaches.

PATIENTS AND METHODS

This was a retrospective study of the first consecutive 186 women who underwent LP with or without pelvic organ prolapse (POP), from January 1998 to December 2002 in our centre. Those patients with concurrent SII had LP with a bu

colopneumothorax or tension-free vaginal tape (TVT). The recurrence rate of POP was evaluated by physical examination at follow-up visits and by the patients, using a postal, unannounced self-applied questionnaire (SAG). Patients' urinary status and digestive functions, overall satisfaction about surgery and quality of life, were evaluated with SAG.

RESULTS

All 186 patients had LP with concurrent POP. The rate of LP T100 procedure was 44.1%. The median (interquartile range) follow-up was 41.1 (26–61) months. The patients underwent their follow-up visits and the success rate was 93.4%. Eighty-eight patients were inoperable because of recurrent POP. The 54-sided repair rate was 95%, 91.1% and 73.4% of the patients were satisfied or very satisfied after surgery, and with their quality of life. In total, 107 (57.5%) women were unsatisfied or very unsatisfied because of


recurrence of POP (seven), urinary symptoms (five) or constipation (five). Patients who complained of recurrent POP T100, those who underwent or recurrent LP T173, those who underwent or recurrent LP T21, those with TVT and transient constipation (20%), Over half of the women (50.4%) were not sexually active and 4.4% developed dyspareunia. The long-term complication rate was 6%, there were five vaginal mesh erosions.

CONCLUSION

POP treated with LP offers excellent long-term results with low recurrence and morbidity rates, and a good quality of life.

KEYWORDS:

laparoscopic promotofixation, long-term outcome, pelvic organ prolapse



Preliminary results of a RCT

Abdominal CSP vs Laparoscopic CSP


- Clinical trial NCT01182090
 - Primary outcomes: operative morbidity and adverse events
 - Secondary outcomes: subjective and objective success rate

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Surgical correction of uro-genital prolapse: a randomized trial of open surgery vs laparoscopy. Preliminary report

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Urology



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Universität
Salzburg

Results

To date, 21 patients were randomized to OS and 19 patients to LS.

PRE-OPERATIVE DATA

	OS	LS	P
Age (years)	71	70	NS
Age range	63-72	63-71	NS
Weight (kg)	80	75	NS
Previous surgery	8	9	NS

PERI-OPERATIVE DATA

	OS	LS	P
Operation time (s)	240	240	<0.01
Wound length (cm)	200	160	NS
Hospital stay (days)	4	4	NS
Discharge delay	12	4	<0.01
	2	2	NS

30-DAY COMPLICATION RATE

	OS	LS	P
Wound infection	0%	0%	NS
Port drainage	15%	5.2%	NS
Urinary infection	26.3%	10.5%	NS
Rectal bleeding	42.9%	10.5%	<0.01
Wound dehiscence	10.5%	0%	NS
Major complication	10.5%	5.2%	NS

90-DAYS COMPLICATION RATE

	OS	LS	P
Wound infection	0%	0%	NS
Port drainage	10.5%	5.2%	NS
Urinary infection	26.3%	10.5%	<0.01
Rectal bleeding	26.3%	10.5%	<0.01
Wound dehiscence	9.3%	5.2%	<0.01
Major complication	26.3%	10.5%	<0.01

Long-term follow-up

	OS	LS	P
Continence	90.5%	89.5%	NS
High incidence per- and post-operative de-novo stress incontinence	5.2%	5.2%	NS
High incidence of mesh erosion (1/29 pts)	0%	0%	NS


At last follow up (median 8.6 in OS and 8.3 months in LS), constipation rate was similar for both groups (22%) in OS, 19% suffered of mild stress incontinence and 9.5% of mixed incontinence, while in LS 21% suffered of mild stress incontinence and 4.7% of mixed incontinence.

Anatomical correction of prolapse was similar in both group, with only 14.2% and 5.2% of residual, asymptomatic, grade I cystocele in OS and LS respectively.


Conclusions

- Our preliminary report shows that the techniques are equivalent in intra and perioperative data
- **LS is characterized by longer operative times but lower grade II-II complications rate.**
- **Both approaches showed excellent anatomical correction of prolapse.**

Only the long-term data from this ongoing prospective trials will define current role of laparoscopic sacroscopy in the armamentarium of surgical correction of high grade POP



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Further results

	LS (26)	OS (26)				
Complications						
Grade I	7	13				
Grade II	1	2				
	30 days complications		90 days complications		Last follow-up (months)	
	LS	OS	LS	OS	Mean ± SD	
	LS	OS	LS	OS	LS	OS
Constipation	7 26%	3 11%	4 15%	3 11%	5 + 2 persistent 26%	3 + 2 persistent 16%
Stress (s) /mixed incontinence (m)	4s +1m 15%	5 s + 1m 23%	4s+ 3m 26%	4s +3m 26%	5s +2 m (1s de novo) 26%	5s + 2 m (1s de novo) 26%
Urgency + urge incontinence	2 8%	4 15%	1 3.8%	1 3.9%	1 3.9%	
Urinary tract infection	2 7.6%	1 3.8%				
Port-site pain	1 (3.8%)					
Mesh erosion	1 (3.8%)			1(3.8%)		
Recurrent Inguinal hernia			1 3.8%			
Objective results						
Stage I cystocele					4 1	1 1
Stage I rectocele						

These data show that:

- The techniques are equivalent in intra and perioperative data
- LS is characterized by lower grade I complications, less blood loss, shorter hospital stay but longer operative time
- At a short follow-up asymptomatic Stage I recurrence is higher in LS but both approaches shows excellent anatomical POP correction

SURGICAL TRIPS AND TRICKS

- A. Wide preparation of the vaginal walls**
- B. Prefer polypropylene meshes**
- C. Use 3-4 re-absorbable suture on the vagina**
- D. Avoid folding and wrinkling, the mesh must be well stretched**
- E. Fix the mesh on the posterior vaginal wall and not on the elevator ani muscle**
- F. Prepare carefully sacral promontory and avoid excessive dissection. all the anatomic landmark should be recognized (Vessels, Ureter)**
- G. Use non-absorbable suture to fix the meshes on the sacrum**
- H. Avoid excessive tension on the meshes**
- I. Close the retroperitoneum**
- J. Do not perform contemporary Burch procedure**

J. Do not perform contemporary Burch procedure

OVERALL RESULTS of 2 RCTs with and without Burch

Over 90% of women who are continent before surgery remain continent and 61% of incontinent patients become continent without Burch



Burch Colposuspension Does Not Provide Any Additional Benefit to Pelvic Organ Prolapse Repair in Patients With Urinary Incontinence: A Randomized Surgical Trial

Elisabetta Costantini, Massimo Lazzeri, Vittorio Bisi, Michele Del Zingaro, Alessandro Zocchi and Massimo Perena

Purpose: We evaluated the impact of thumb ulnar deviation on an electromyographic measures in patients with non-traumatic underlying aetiology against repair for patellar tendon prosthesis.

Materials and Methods: A total of 32 women with patella repair prosthesis and ulnar deviation measures were randomly assigned to abdominal pelvic core prosthesis repair and concomitant thumb ulnar deviation (24 patients, group A) or patella repair alone without an electromyographic prosthesis (8 patients, group B). They were followed up at 2, 6 and 12 months after surgery, and their analysis. The primary outcome variables were electromyographic and changes in ulnar deviation status as indicated by a kinesthetic device. The number of body parts and the stress test, secondary and patient

Conclusion



- Abdominal or Laparoscopic colposacropexy with or without uterus preservation can safely be offered to women with symptomatic descensus
- The surgical technique and expertise are fundamental



Thank you for your attention

Anatomical Variations of the Pre Sacral space

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The common point of abdominal sacrocolpopexy techniques is the dissection of the sacral promontory. This dissection allows the fixation of the anterior and/or posterior mesh into the anterior longitudinal ligament of the sacrum (ALLS) overlying the sacral promontory.

The ALLS is located in the presacral space that can be defined as a retroperitoneal space between the parietal pelvic peritoneum and the sacrum. The vascular and nerve anatomy of the presacral space is complex and variable: situation of the left iliac vein, of the presacral veins, of the autonomic nerve... Therefore, the anatomical situation and possible variations need to be well known by the surgeon. Furthermore, the right ureter crosses this area and must be identified. Lastly, the thickness of the ALLS and its relationship with the intervertebral disc are of importance for the efficiency and the safety of the fixation of the mesh.

WORK SHOP 16

CONVENTIONAL LAPAROSCOPIC SACRO-COLPOPEXY

Denise AYASSE MD, Thomas SEISSEN MD, Louis MARCELLIN MD, Idir OUZAID MD, Bruno DEVAL MDPHD

Pelvic organ prolapse (POP) has been reported in up to 40% of women [1,2] and increases with age [3]. The lifetime risk of requiring surgery for urogenital prolapse or incontinence by the age of 80 is estimated to be 11.1 % and reoperation is required in 17-56% of these women [4,5].

The history of POP surgery has changed tremendously over the last 50 years [7]. In 1957 was performed the first experience with abdominal sacrocolpopexy (ASC) [7]. Large series have confirmed that ASC has a success rate between 74–98%, and is associated with lower rates of recurrence of vaginal vault prolapse, greater time to recurrence and less dyspareunia than vaginal sacrospinous fixation [4,5,7]. However, despite the advantages of ASC, vaginal prolapse surgery is often performed due to be faster, less painful, less costly and with rapid recovery [5]. The first conventional laparoscopic sacrocolpopexy (LSC) was performed and indicated as treatment for the three compartment defects [8,9]. LSC aims to provide similar outcomes as ASC, while offering the benefits of minimally invasive surgery and better visualization of pelvic anatomy [5,7,8,9]. However only long term results have been published [2,7,11].

Actually, the rate of LSC comparing to the vaginal approach is lower [8]. The main reason for this disaffection is the perceived technical difficulty of the procedure compared to the

assumed easiness of the vaginal techniques. [8]. Learning how to perform LSC is associated with two types of challenges: anatomic and technical [4]. Published experience with LSC remains limited, one of the reasons is probably because of the inherent need for endoscopic suturing skills causing a long learning curve and operation times [12]. A single center's experience with 206 LSC performed between 1996 and 2006 demonstrated a learning curve of 60 cases and defined the learning as completed when the surgeon was able to complete sacrocolpopexy by laparoscopy, without complications and with good anatomical outcome in at least 90% of patients. Operation time declined rapidly over the first 30 procedures, declining slower thereafter to reach a steady state after 90 case [12].

Laparoscopic approach for the repair of POP should follow the same principle as in open technique, with laparoscopy only being the mode of surgical access [13]. However, there are several variations in LSC technique: number and placement of trocars; use of special retractors; mesh type, number, tension, placement and attachment, use of staples; peritonealization; concomitant anti-incontinence, hysterectomy and vaginal procedures [4,8]. Which technique is best is still controversial [13].

In a review published by Ganatra and cols in 2009 [4], the average patient satisfaction level after LSC was 94.4%, slightly higher than the objective success rate defined by clinical examination (92%). With an average follow-up of 24.6 months, the mean reoperation rate for recurrent prolapse was 6.2% (range 0-21%). Major perioperative complications were due to bladder, bowel and blood injuries and more complications were managed laparoscopically in later series, reflecting lower conversion rates (0-3%) as compared with initial conversion rates (4-11%). The largest retrospective series available with 363 patients demonstrated a total complication rate of 15.5%, due to 6% urge incontinence, 4% prolapse relapse; 2% open surgery

conversion; 1% of mesh erosion, 0.6% off mesh infection and urinary retention, 0.3% of spondylitis, port hernia and intestinal obstruction [9]. The highest mesh erosion rates (8.7 and 9%) were found with the longest follow up (66 months and 60 months respectively) [2,11]. However, in another 60 month follow-up study published in 2010, mesh erosion rate was 4% [7]. The average incidence of mesh erosion after LSC is 2.7% [4]. Postoperative sexual dysfunction was seen in 7.8% of the patients submitted to LSC and 9.8% of them had bowel dysfunction, which included constipation, anal pain and fecal incontinence [4].

The complications, objective and subjective successes are not statistically different among LSC and ASC [4,10,15]. Until now, only one recently randomized trial comparing 53 LSC with 55 total vaginal mesh repair for vaginal vault prolapse has been published. This study showed a clear benefit in favor of LSC with higher satisfaction rate and objective success rates, with lower perioperative morbidity and reoperation rate in a 2 year follow-up [16]. When compared to Robot assisted sacrocolpopexy, LSC has a lower operating time but there were no other perioperative differences. Hospital stay, complications, satisfaction and objective cure rates in a medium term follow-up were similar [17]. However, this field is so new that there is very little data to evaluate at this time.

In conclusion, LSC has a high anatomical and success rates, associated with a low morbidity rate. The varying definitions of patient satisfaction, objective success and prolapse recurrence underline the need for standardized outcome reporting [4]. There is also a relatively short follow-up period, studies with the longest follow-up have an average of 60 to 66 months [2,7,11]. For more accurate success and complications rates, studies with longer follow-up, standardized technique and outcome reporting are needed. The lack of prospective randomized controlled trials comparing LSC with other techniques difficult further conclusions.

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Robotic Assisted Laparoscopic Sacrocolpopexy:

The current 'gold standard' surgical repair for apical prolapse is the abdominal mesh sacrocolpopexy. Use of a robotic-assisted laparoscopic surgical approach has proven to be achievable as a minimally invasive approach and is gaining popularity amongst pelvic floor reconstructive surgeons. Although outcome data for robotic-assisted sacrocolpopexy is only just emerging, several small series have demonstrated anatomic and functional outcomes, as well as complication rates, comparable to those reported for open surgery.

With the introduction of the da Vinci (Intuitive Surgical; Sunnyvale, CA) robotic surgical platform system in 1999, the only US Food and Drug Administration-approved device for surgical robotics, there was a dramatic increase in the complexity of the laparoscopic procedures that could be performed. Within a brief time period, robotic surgery has become increasingly popular for pelvic surgery, most notably for Urologists undertaking radical prostatectomy and Gynaecologists undertaking hysterectomy, myomectomy and pelvic floor surgery.

Details of robotic assisted laparoscopic sacrocolpopexy will be discussed.

The potential advantages and disadvantages of using robotics for laparoscopic surgery are:

Advantages:

- 3 D vision
- Minimal surgeon fatigue
- Complete camera control
- Tremor filtering
- 7 degrees of freedom of movement
- Use of fourth arm for retraction

Disadvantage:

- Cost
- Maintenance
- Disposable instruments
- Patient position: steep Trendelenburg
- Lack of haptic feedback
- Limited vaginal access with docking of robot at foot of bed

Complications:

- Routine complications associated with laparoscopic surgery
- Technical failure of robot

Plus, procedure specific issues:

- Ventilation issues with steep Trendelenburg
- Correct assessment of mesh tension in steep Trendelenburg position



Notes

Record your notes from the workshop here