

Workshop Chair: Salma Kayani, Kuwait 26 August 2013 14:00 - 18:00

Start	End	Торіс	Speakers
14:00	14:30	Introduction and Evidence	 Salma Kayani
14:30	14:50	Applied Anatomy	 Salma Kayani
14:50	15:00	Questions	All
15:00	15:30	Laparoscopic Sacrohysteropexy and Sacrocolpopexy	Elisabetta Costantini
		evidence based techniques	
15:30	16:00	Break	All
16:00	16:30	Conventional Laparoscopic Sacrocolpopexy and	Bruno Deval
		Rectopexy	
16:30	17:00	Robotic-Assisted Sacrocolpopexy, Sacrohysteropexy-	 Stergios Doumouchtsis
		Techniques, Outcomes and Learning Curve	
17:00	17:30	How to Avoid and Manage Complications associated	 Salma Kayani
		with Laparoscopic Sacrocolpopexy	
17:30	18:00	Interactive case based management discusions with	All
		real clinical cases- images and videos	

Aims of course/workshop

This workshop will provide an opportunity for colleagues to be able to interact with MIS with experience and expertise in Laparoscopic Pelvic Floor Reconstructive Surgery with particular emphasis on Sacrocolpopexy. The speakers are enthusiastic surgeons and clinicians with vast experience in their fields. The interactive session will allow a discussion platform to include practical tips of trouble shooting; how to avoid as well as manage complications. Delegates will have the opportunity to see the MRI images of the pelvic floor before and after surgery. An overview of international peer-reviewed literature on the role and future of the laparoscopic and laparotomic approach in pelvic floor reconstructive surgery will be provided.

CONVENTIONAL LAPAROSCOPIC SACRO-COLPOPEXY

Denise AYASSE MD, Thomas SEISSEN MD, Louis MARCELLIN MD, Idir OUZAID MD, <u>Bruno DEVAL MDPhD</u>

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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The vaginal route: the common route

Vaginal Hysterectomy



examination

Correction of central or superior defect <u>without</u> <u>meshes</u>:

- Utero-sacral legament suspension
 Ileococcigeus legament
- suspension
- Sacrospinous legament suspension
- Douglas Obliteration

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



Cochrane 2010

have not yet been demonstrated

in the context of RCTs

The use of meshes at the time of anterior vaginal wall repair may reduce the risk of recurrent cystocele on

The evidence is not sufficient to support the use

of permanent meshes or grafts at the time of vaginal apical compartment repair surgery except

Improved outcomes including patient satisfaction, quality of life and reduced operations for recurrences



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 dyspaurenia
 - 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

Cochrane review 2010



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





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

BUUI Abdominal mesh sacrocolpopexy for m triple-compartment pelvic organ prola Jaco P. Gierra and Philippe Zameret Company and Company and Company and Company and Company American Statistical Statistics and Company and Company American Statistics Statistics and Company and Company American Statistics Statistics and Company and Company American Statistics Statistics and Company and Company and Company American Statistics Statistics and Company and Company and Company American Statistics and Company and Company and Company and Company American Statistics and Company and Company and Company and Company American Statistics and Company and Company American Statistics and Company and Com	ccurrent pse
M (Imputed J (201) 2235-29 DOI 10/10/10/000-10.02 DOIGNELLARTCLE	Long-term results of abdominal sacrocolpopesy. Werd 5. High Nuble Arabic Parken, Bi, and Page A. Neran, Ni 2014 (2014)
Five-year outcome of uterus sparing surgery for pr prolapse repair: a single-center experience Etholeta Contanti - Manika Lazeri - Atomir / Protei - Minie Bai - Lag Maetu - Manika / Protei - Bai - Lag Maetu - Manika / Protei - Bai - Lag Maetu -	Avic organ





Personal expe	erience				
Anatomical c	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 dysfuctions corrected?	YES	95%			
Storage symptoms corrected?	YES	83%			
Sexual dysfunctions corrected?	YES	87%			
Bowel disorders corrected?	YES	85%			























JUI organ pro	olapse	
Robert Sabbag Le Mai Tu Division of Unology, R Canada, and "Clinique Accepted for publication	h, Éric Mandron*, Jean Piussan aculty of Medicine, Centre Hospitalier Universit e du Pré, LeMans, France 22 October 2009	*, Pierre E. Brychaert* and taire de Sherbrooke, Sherbrooke, Quebec,
Study Type – Therapy (case seried) Level of Unidence 4 ENECTIVE To assess the long-term anatomical and functional uncomes of laparoscopic promotechistican BJT for pelici organ prolope (POR), and the long-term safety of Up; 3 POR is a commo profession income of all ages, with treatment including vaginal, adominut, laparoscopic or motio-assedte	colposspersion or tension-free vaginal tape (IVI). The recurrence rate of KPI was evaluated by ripidal examination at follow- unalized and the second second second unalized set of applied questionnaire (SAQ). Patterts: Human, Isonala and digestre functions, everall satisfaction about subgrou- ind quality of the were evaluated with SAQ. ESERTS All 166 publiesh had LP, with concombane. The	Incurrence of POP Boveni, uninary sumption (fiver or constpation fixer). Relations comparised of everyment POP IOInnia, persistent or recurrent POP IOInnia, persistent or recurrent UI (2739-64 fiber wonnen frastiel with Buchard 21.3 Have MVI), and transient constiguistic DOPAI do that of the wonnen Buchard and 21.4 we MVI) and transient constiguistic DOPAI do that of the wonnen Buchard and 21.4 we must be applied to the second second active and 5.4% developed segmentals. It works five applied to the second second active and 5.4 we developed segmentals. It works five applied to the second second active and 5.4% developed second second active act
surgical approaches. PATIENTS AND METHODS	median (interguartile range) follow-up was 60 (48–71) months. In all, 71% of the patients attended their follow-up visits and the success rate was 92.4%. Eight patients	POP treated with LP offers excellent long- term results with low recurrence and morbidity rates, and a good quality of life
This was a retrospective study of the first consecutive 186 women who underwent LP for POP, with or without stress uninary incontinence (SUR), from January 1998 to December 2002 in one centre. Those patients with concurrent SUR had LP with a Burch	the success rate was suc-ew, signt patients were re-operated because of recurrent POP. The SAQ response rate was SPRic \$1.1% and 79.8% of responders were satisfied or very satisfied after their surgery, and with their quality of life, respectively, women were unsatisfied or very unsatisfied because of	morbidity rates, and a good quarty or ne KEYWORDS Japaroscopic promontofication, long-term outcome, pelvic organ prolapse





laparoscopic and open methods are not equivalent (with a pre-specified tolerance limit margin of $0.6~{\rm cm}$ for equivalence with a common SD of 0.8 cm. The Mann-

Whitney and Chi square tests were used for statistical analysis



	LS (36)	AS (36)				
Complications						
Grade I n°	7(19.4%)	15 (41.6%)				
Grade II n°	3 (8.3%)	6 (16.6%)				
	30 da	ys	90	days	Last follow-up	(mean, months)
	LS	OS	LS	OS	LS	os
					27.3 months	29.6 months
Constipation n°/%	8 (22.2%)	6 (16.6%)	9 (25%)	4 (11.1%)	3 de novo	6 de novo
Pre-op 32 (16 LS -16-OS)					8 persistent	3 persistent
					30.5%	25%
Stress (s) / Mixed	4s / 2m	8 s/ I m	5s/4m	7s/3m	7s /2 m	7s/2 m
incontinence (m)	16.7%	25%	25%	27.7%	25%	25%
Pre-op 22 (12 LS-10 OS)					2 to treat	5 to treat
•	4 (11.100)	-	1 (0 70()	2	-	
Storage symptoms n	4 (11.1%)	5	1 (2.7%)	5	5	4
	1 (2 70()	(13.8%)		(8.3%)	(13.8%)	(11.1%)
Urinary tract infection n	1 (2.7%)	1 (2.7%)		1 (2.7%)		
Port-site pain n°	1 (2.7%)					
Mesh erosion n°					2 (5.5%)	1 (2.7%)
Recurrent Inguinal hernia			1 (2.7%)			
n°			(
Objective results						
Stage I-II cystocele					8 (22.2%)	2 (5.5%)
Stage I-II rectocele					2 (5.5%)	2 (5.5%)

Mean po	ean post-operative point C/D evaluation for both techniques								
C	Post-op	erative C/E) point (PC	P-Q system)					
	type	Ν	Mean	Std. Deviation					
	AS	36	-6,533	,6392					
	LS	36	-6,853	,8480					
	Total	72	-6,693	,7627					
				· · · · · · · · · · · · · · · · · · ·					
whic	h dem	onstrates	s their e	quivalence					

R

These data show that:

LS provided outcomes as good as AS with decreased morbidity, less blood loss, less pain and shorter recovery times at a median follow-up of 28 months (range 12-40 months).

 Subjective and objective outcomes were not significantly different. Anatomical results showed asymptomatic stage I-II recurrence in 27.7% in LS vs 11.1% in OS (p=0.101).





A Multicenter European Trial "The Parsec study" is on going and could further clarify its role for POP repair















Absorbable meshes do not work



C. Use **re-absorbable sutures** on the vagina

D. Avoid folding and wrinkling, the mesh must be well stretched

- Stitch erosions are reported
- Folding and wrinkling can cause erosions and dyspaurenia



B. Fix the mesh on the posterior vaginal wall and not on the elevator ani muscle

 To avoid dischezia and chronic pelvic pain









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MRI and Pelvic Floor Disorders

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The use of magnetic resonance imaging (MRI) as a diagnostic modality for the assessment of pelvic floor disorders is well established. MRI of the pelvic floor provides high quality imaging of pelvic floor muscles, connective tissue, and organs.

Women might present with symptoms isolated to one of the pelvic compartments, but often have concomitant defects in multiple compartments or pelvic tissues and organs. Accurate diagnosis of coexisting abnormalities is essential in planning reconstructive and anti-incontinence procedures, in order to reduce risks of surgical failures and recurrences. The sensitivity and specificity of the pelvic exam in diagnosing various forms of pelvic floor prolapse has limitations. MRI can provide static as well as dynamic imaging and enable visualization of the mobility of each compartment during valsalva to extend what can be determined on physical examination. Prolapse assessment on dynamic MR imaging may therefore be useful in the posterior compartment, although clinical assessment and dynamic MR imaging seem interchangeable in the anterior and apical compartment.

The following measurements using MRI in urogynecology and female urology have been highlighted in the recent IUGA/ICS Joint Report on the Terminology for Female Pelvic Floor Dysfunction:

(a) Bladder neck and cervical descent/mobility:

- Position of bladder neck and cervix at rest and on valsalva.
- Pubo-coccygeal line: A line extending from the inferior border of the pubic symphysis to the last joint of the coccyx. Bladder neck or cervical descent >2 cm below this line with straining indicates weakness of the pelvic floor. If alternative landmarks are used in scientific papers they should be clearly described.
- (b) Intercurrent pelvic pathology: For example, fibroids, ovarian pathology.
- (c) Uterine version: Anteverted or retroverted; flexion at the isthmus.
- (d) Bladder abnormalities: For example, tumor; foreign body.
- (e) Urethral abnormality: For example, diverticulum.
- (f) Postoperative findings: For example, bladder neck mobility.

(g) Pelvic floor measurements/levator defects: Assessment of the configuration of pelvic floor muscles, in particular, the levator ani.(h) Descent of pelvic organs.

In this workshop, the current evidence on the role of MRI in assessing pelvic floor disorders will be discussed with emphasis on diagnostic and clinical considerations.

Robotic Sacrocolpo / hysteropexy

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Surgical options for the treatment of vaginal vault or uterine prolapse include abdominal (open, laparoscopic and robotic) and vaginal sacrocolpopexy or sacrohysteropexy as well as abdominal and vaginal hysterectomy. Robotic surgery utilises computerised technology and allows the surgeon to view the operative field in magnified 3-dimensional vision. The robot offers the best view, the most precise control and the best ergonomics for the surgeon of any current surgical technique available, whilst also offering the benefits of minimally invasive surgery in terms of less pain, decreased length of stay and faster return to normal activities. The robot is ideally suited to operations that take place in a defined anatomical area like the pelvis. Worldwide, gynaecology is now the major speciality in robotic surgery in terms of case numbers. However, in POP surgery, randomized data comparing the different approaches are limited. Nevertheless, minimally invasive abdominal procedures appear likely to become the preferred approaches to POP repair.

Setting up a Robotic Service

The major obstacle to the expansion of robotic surgery is undoubtedly the financial implications. Health economics is a complex area to tease out the true cost-benefit relationships of new technologies. Despite an overall demonstrable benefit to society, the different stakeholders are unlikely to adopt easily expensive new technologies. There is a further layer in the interaction with the

medical industry companies who, if they do not have sufficient competition, are less likely to be flexible on pricing.

In developing a business case the following financial aspects are essential to be addressed:

Cost Analysis

Capital cost of purchase of the system and ancillary equipment

- Ongoing unavoidable costs
 - Straight line depreciation
 - o Annual maintenance contract
- Charity money
- Procedure Tariffs
- Other sustainable factors / costs
 - Sterilisation
 - Equipment cost reduction in other procedures
 - Outside referrals
 - Private cases
 - Reduced complication and emergency readmission rates
 - Profit yielded from beds that are freed up for other work
 - Cost vs. open cases

Considerations of the wider health and social implications

General Practice implications Lost working days Quality of Life

Local benefits National/International benefits Reconstructive Surgery of Female Pelvic Floor Prolapse: Sacrocolpopexy Introduction and Evidence

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

Background

POP is seen in 50% of parous women

• Beck 1991

10-30 per 10,000 women

• Brubaker 2002

 \bigcirc

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 reoperation 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

Ίπποκράτης; Hippokrátēs (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.







Aetiology of Pelvic Organ Prolapse Weakness of Pelvic Ageing and Childbirth

Surgery (Herniation) Protrusion of a viscus in part or whole through a normal or ٠ Т abnormal opening in relation to the abdomen -Demonstrations of Physical Signs in Clinical Surgery Professor Hamilton Balley 17th Edition • C - Sexual Function Laparoscopic – Robotic

- 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
 - Infracocygeal 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)



The Straight and Narrow **Evidence Based Medicine**





Cochrane Review- 40 RCT

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 ${\bf Comparison 1}:$ 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 sacropexy)
- Prolapse repair without continence surgery vs prolapse repair with any continence surgery
 One type of graft vs another type of graft in Sacrocolpopexy

Analysis I.I. Co	mparison I Su wome	rgery for upper n with prolapse	vaginal (vault or uterin symptoms (subjective	e) prolapse, Ou failure).	tcome I Number of	
Review: Surgical management	ent of pelvic organ pro	slapse in women				
Comparison: I Surgery for	upper vaginal (vault o	r uterine) prolapse				
Outcome: I Number of w	omen with prolapse sy	mptoms (subjective failu	re)			
Study or subgroup	Method A	Method 8	Risk Ratio	Weight	Risk Ratio	
	e/N	n/N	M-H/Fored/95% Cl		M-H/Fixed,95% CI	
East 1 abdominal sacral colpoperg Benson 1996	rvs vagnal sacrospinou 6/38	us colpopeoy 14/42		76.3 %	0.47 [0.20, 1.11]	
Maher 2004	3/46	4/43		23.7 %	0.70 [0.17, 2.95]	
Subtotal (95% CI) Total events: 9 (Method A), 1	84 8 (Method B)	85	-	100.0 %	0.53 [0.25, 1.09]	
Heterogeneity: Chi ² = 0.21, c	H = 1 (P = 0.65); P =0	0.0%				
test for overall effect; Z = 1.1	vy versus vaginal hyste	rectorry plus anterior an	d/or posterior colporthaphy at 1 y	ow.		
2 abdominal sacro-hysterope	16/41	5/41		100.0 %	3.20 [1.29, 7.92]	
2 abdominal sacro-hysterope Roovers 2004		<i>i</i> •				
2 abdominal sairo hysterope Roovers 2004 Subtotal (95% CI) Total events: 16 (Method A), Heterogeneity: not applicable Test for overall effect: Z = 2.5	5 (Method B)			100.0 %	3.20 [1.29, 7.92]	
2 abdominal sarro hysterope Roovers 2004 Subtotal (95% CI) Total events: 16 (Method A), Heterogeneity: not applicable Test for overal effect: Z = 23 3 abdominal sarro hysterope Roovers 2004	41 5 (Method B) 2 (P = 0.012) vy versus vaginal hyste 13/42	•1 rectorry plus anterior an 542	d/or posterior colporthaphy at 8 y	100.0 %	2.60 [1.29, 7.92]	
2 and/onsul abor hysteropie Roovers 2004 Subtotal (95% CI) Total events: 16 (Method A), Heterogeneity: not applicable Text for overall effect; Z = 23 3 addoninal acro-hysteropie Roovers 2004 Subtotal (95% CI)	41 5 (Method B) i2 (P = 0.017) vy versus vaginal hyste 13/42 42	41 rectorry plus anterior an 5/42 42	d'or posterior colporthaphy at 8 y	100.0 % 100.0 % 100.0 %	2.60 [1.02, 6.65] 2.60 [1.02, 6.65]	
2 andoninal abor-hysteregie Roovers 2004 Subtotal (95% CI) Total events: 16 (Method A), Heterogeneity not applicable Test for overall effect; Z = 23 3 abdoninal saro-hysteregie Roovers 2004 Subtotal (95% CI) Total events: 13 (Method A),	41 5 (Method B) 52 (P = 0.017) vy versus vaginal hysto 1342 42 5 (Method B)	41 rectorry plus anterior an 5/42 42	d'or posterior colporthaphy at 8 y	100.0 % 100.0 % 100.0 %	3.20 [1.29, 7.92] 2.60 [1.02, 6.65] 2.60 [1.02, 6.65]	

contractions in the Boots counter office a	nent of pelvic organ prolapse	in women		
Comparison: I Surgery fo	r upper vaginal (vault or uter	rine) prolapse		
Outcome: 2 Number of v	women unsatisfied with surge	ny		
Study or subgroup	Method A n/N	Method B	Rak Ratio M-H/Fored,95% Cl	Risk Ratio M-H/Fored/95% C
I abdominal saoral colpoper Maher 2004	ry vs vaginal sacrospinous col 7/46	рорноу 8/43		0.82 [0.32, 2.06]
2 vaginal sacrospinous colpo de Tayrac 2008	pery vs posterior intravagina 5/24	l singplasty 3/21		1.46 [0.40, 5.28]
			0.1 02 05 1 2 5 10 Ferrar A Ferrar B	
Analysis 1.4.	Comparison I Sur	gery for upper vagina	a a co a si a si a si a co a c	utcome 4 Patient
Analysis I.4. Si	Comparison Sur atisfaction: VAS (0-1	gery for upper vagina 10) or Global Impress	al al 26 1 2 5 10 Feors A Feors B	utcome 4 Patient re.
Analysis I.4. 50 Review: Surgical manage Consosions: 1.5 manage	Comparison I Sur, atisfaction: VAS (0-i ement of pelvic organ prolaps	gery for upper vagina 10) or Global Impress e in wren ning unders	I for a for the formation of the provement (PGI-I) see	utcome 4 Patient re.
Analysis I.4. 5: Review: Surgical manage Comparison: I Surger Outcome & Patient sal	Comparison I Sur, atisfaction: VAS (0-1 ement of polici organ proleo for upper vaginal (walt or uto determine VKS of VB or Cabla	gery for upper vagina 10) or Global Impress e in wome rrice) prolpes (exemute of increasest (PC	(vault or uterine) prolapse, O (vault or uterine) prolapse, O	utcome 4 Patient pre.
Analysis I.4. 5 Seview: Surgical manage Companione: I Surgery Outcome: 4 Patient aut	Comparison I Sur- atisfaction: VAS (0-) ement of polici organ prolipio for upper vaginal (valit or un infantor; VAS (0-10) or Galua	gery for upper vagina 10) or Global Impress e is scores vire) prolese d impression of improvement (V	al 62 63 1 2 5 10 Paori A Paori B (yould or uterine) prolapse, O fon of Improvement (PGI-I) sco	utcome 4 Patient FR.

-1 -0.5 0 0.5 1 Favours experimental Favours control

Analysis 1.5. C	omparison I Surge wom	ry for upper vaginal en with any prolapse	(vault or uterine) prolapse, Out (objective failure).	come 5 Number of
Review: Surgical manage	ment of pelvic organ prolaps	e in women		
Comparison: I Surgery	for upper vaginal (vault or ute	rine) prolapse		
Outcome: 5 Number of	women with any prolapse (o	bjective failure)		
Study or subgroup	Method A	Method B	Risk Ratio	Risk Ratio
	n/N	n/N	M-H/Fixed,95% Cl	M-H/Fixed,95% CI
I abdominal sacral colpop Maher 2004	oy vs vaginal sacrospinous co 11/46	popexy (failed) 13/42		0.77 [0.39, 1.53]
2 abdominal sacral colpope Lo 1998	oy vs vaginal sacrospinous co 3/52	lpopexy (not improved) 13/66		0.29 [0.09, 0.97]
3 abdominal sacral colpop Braun 2007	oy vs vaginal McCall 0/23	2/24		0.21 [0.01, 4.12]
4 cadaveric fascia lata (Tuto Culligan 2005	plast) vs polypropylene (Trek 14/44	54) 4/45		3.58 [1.28, 10.03]
5 vaginal sacrospinous colp de Tayrac 2008	opery vs posterior intravagin 7/24	al slingplasty 2/21		3.06 [0.71, 13.16]
6 sacral colpopery without	colposuspension versus sacr	al colpopery with colposuspens	ion	1001077 1073
Drubaler 2006	58/132	50117		100 [007, 107]
			0.1 0.2 0.5 1 2 5 10	
			Falours A Falours 8	





Review: Surgical manager	vert of pelvic organ prol	pse in women				
Company in the party of	alte effer (and a					
Outcome 15 Number of	women with post open	ove threa unitary not	rtzence			
Study or subgroup	A botteM Ne	Method B nN	Risk Ratio MH(Fixed(95% CI	Wight	Risk Ratio MH(Fired,95% CI	
I abdominal samal colpoper	y is vaginal sacrospinou	colpopery				
Benson 1996	9/38	1842		640 %	055[028,108]	
Maher 2004	536	10/39		360 %	054[030, 143]	
Services (95% Cl) Total events: 14 (Method A) Heterogeneity: Ov? = 0.00, Test for overall effect; Z = 2 2 vaginal sacrospinous color de Tanas; 2008	74 (28 (Method 8) df = 1 (P = 0.97); P =0 (3 (P = 0.03)) proy is posterior intraio 204	81 2% gini singslaty 021		56%	401022.6791	
the spin little	100	100				
Subsoal (95% CI) Total events 7 (Method A), Heterogeneity, CH2 = 0.86, Test for overal effect Z = 0 3 abdominal sarroes/popes Brubaler 2008	57 5 (Method B) df = 1 (P = 0.35): P = 0 53 (P = 0.59) calone vs abdominal sac 62152	54 Th Scolpopery with Barc 2010	h colposupersion	100.0 %	1.33 [0.47, 3.74] US [1.32, 240]	
Subseal (95% CI) Total events 67 (Method A) Heterogeneity not applicabl Total for overall effect Z = 3 4 High lesator myorthaphy Natale 2007	152 i. 35 (Method B) 6 55 (P = 0.00039) 5 uterssaml vag valt 5 458	147 apension 758	-	100.0 %	1.85 [1.32, 2.60] 657[018, 185]	
Subwed (05% CT)	58 7 (Method B)	58	-	100.0 %	0.57 [0.18, 1.85]	

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

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Remains to be assessed

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

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

Sacro Colpopexy

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- 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
- 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 Safet

- 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 <u>0% to 7.9%</u> (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 sta

- 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).





National Institute for SCP with hysterectomy Health and Clinical Excellence

Current evidence on the safety and efficacy of SCP with hysterectomy using mesh for uterine prolapse repair is ty and quality. This procedure should only be used with special arrang ements for ernance, consent and audit or rese

NHS

- Clinicians wishing to undertake this procedure should inform their clinical governance leads and ensure erstand the uncertainty re the procedure s un
- **BSUG** database
- Procedure should be carried out by surgeons specialising in the management of POP and female urinary incontinence.
- NICE encourages <u>future research</u> 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





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 More suited for sexually active women (as SSF is associated with exaggerated retroversion of varian
- leading to less physiological Vaginal length maintained

• Requires: adequate vaginal length & vault width to enable reaching the SS ligament. Coexistent ant and post wall

Vaginal Sacro Spinal Fixation

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
- ٠ 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





 Sacrocolpopexy based abdominal POP surgery is likely to result in a better and possibly more durable anatomical outcome that 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?



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





Notes