

Evidence-Based surgical management of POP, Mesh Repair



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Conflict of interest

- Consultant for
 - BOSTON SCIENTIFIC
 - > ASTELLAS
 - > ALLERGAN
- Partnership with
 - > COLOPLAST





Impact of the 2011 FDA Transvaginal Mesh Safety Update on AUGS Members' Use of Synthetic Mesh and Biologic Grafts in Pelvic Reconstructive Surgery

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2013

Results: Fifty-three percent (507/962) of AUGS members responded and were included in analysis; 79% were urogynecologists. Before the FDA warning, in POP surgery, most (90%) used synthetic mesh and fewer (34%) used biologic grafts; 99% used synthetic mesh slings. After the FDA statement, respondents reported an overall decrease in the percent of POP cases in which they used synthetic mesh (P < 0.001) but no change in biologic graft use for POP (P = 0.37) or synthetic mesh sling use (P = 0.10). Specifically, transvaginal mesh use decreased: 40% reported decreased use and 12% stopped use. However, transvaginal mesh was still used by 61% of respondents in at least some cases. No change (62%) or increased use (12%) of mesh was reported for transabdominal POP procedures.

Conclusions: Synthetic mesh use in transvaginal POP surgery decreased after the 2011 FDA safety update, but synthetic mesh use for transabdominal POP repair and sling procedures and overall biologic graft use in POP surgery did not decrease.

Key Words: mesh, pelvic organ prolapse, surgery, sling

(Female Pelvic Med Reconstr Surg 2013;19: 191-198)

AUGS Members



Impact of the 2011 FDA Transvaginal Mesh Safety Update on AUGS Members' Use of Synthetic Mesh and Biologic Grafts in Pelvic Reconstructive Surgery 2013

TABLE 3. Reported Change in Use of Transvaginal Mesh, Transvaginal Biologic Graft, Transabdominal Mesh, and Transabdominal Biologic Grafts for POP Repair and in Use of Mesh Slings for SUI, After the 2011 FDA Safety Update

	Mesh L	se for POP	Biologic Gra	Mesh Sling	
	Transvaginal (n = 496)	Transabdominal (n = 478)	Transvaginal (n = 496)	Transabdominal (n = 486)	(n = 486)
More use (still using, but more often)	0% (0)	14% (68)	10% (49)	0.6% (3)	0% (0)
Same use (still using-no change in practice)	21% (102)	62% (297)	24% (117)	8% (40)	93% (453)
Less use (still using but less often)	40% (197)	5% (24)	5% (26)	0.2% (1)	3% (16)
Stopped use (stopped using, used in the past)	12% (58)	2% (8)	8% (37)	2% (8)	0.2% (1)
Never used (no change-never used)	27% (132)	14% (69)	50% (249)	80% (390)	3% (16)
New user	2% (9)	4% (17)	5% (24)	10% (46)	0% (0)



What about transvaginal mes repair in 2013?



POP Location

•	Anterior only	40%
•	Anterior and apex	20%
•	Posterior only	7%
•	Posterior and apex	10%
•	All three compartments	18%
•	Anterior compartment involved	78%
•	Highest failure in anterior	
	compartment reported	30-70% ²⁻⁶
	¹ Olsen et.al. <i>Obstet Gynecol</i> 1997;89:501- ² Shull et al. <i>Am J Obstet Gynecol</i> 1992;16	506 6:1764-1768

³ Holley et al. *South Med J* 1995;88:547-549

⁴ Samuelsson et al. Am J Obstet Gynecol 1999;180:299-305

⁵ Shull et al. *Am J Obstet Gynecol* 2000;183:1365-1373

⁶ Weber et al. Int Urogynecol J Pelvic Flr Dysfunc 2001;12:178-186



Background: Anterior repair

Efficacy of vaginal surgery with no mesh: 60-80%

Shull BL et al., *Am J Obstet Gynecol* 1992 Kohli N et al., *Am J Obstet Gynecol* 1996 Benson J et al., *Am J Obstet Gynecol* 1996

- Efficacy of biological grafts: 80%
 Begler J et al., *Pelvi Perineol* 2006
- Efficacy of Vicryl[®]: 75% vs 57% (p=.02)
 Sand et al., Am J Obstet Gynecol 2001
- Efficacy of polypropylene meshes: 90% Julian TM, Am J Obstet Gynecol 1996

but high rate of local complications: 15% Cervigni M et al., *Curr Opin Urol* 2001





Background: Posterior repair

Efficacy of fascial repair: 75-90%

Kahn et al., *Br J Obstet Gynecol* 1997 Singh et al., *Obstet Gynecol* 2003

 Efficacy of biological implants: conflicting Letouzey V et al., *Prog Urol 2012: 86%* Paraiso Am J Obstet Gynecol 2006, 54%
 no risk of local complications

Efficacy of polypropylene meshes: 92%
 de Tayrac et al., Int Urogynecol J 2006



but, risk of vaginal erosions (12%) and dyspareunia (8%)



Background: Polypropylene monofilament knitted







PP monofilament knitted...the best that we have / infection but...

Contraction of the surrounding tissues Obvious degradation of PP after implantation

Need for innovative meshes : improvement of biomechanical properties of meshes (stiffness, elesticity, density...) Need for innovative procedures,



10-year risk of reoperation

17% (underestimated), risk factors not clearly identified... but abdominal approach protective (OR 0.37) and abdominal approach protective because of mesh



AUGS PAPERS

www.AJOG.org

Reoperation 10 years after surgically managed pelvic organ prolapse and urinary incontinence

Mary Anna Denman, MD; W. Thomas Gregory, MD; Sarah H. Boyles, MD, MPH; Virginia Smith, MD; S. Renee Edwards, MD; Amanda L. Clark, MD

OBJECTIVE: This study measured the 10-year risk of reoperation for surgically treated pelvic organ prolapse and urinary incontinence (POPUI) in a community population.

STUDY DESIGN: We conducted a prospective cohort analysis of 374 women who were > 20 years old and who underwent surgery for POPUI in 1995.

RESULTS: The 10-year reoperation rate was 17% by Kaplan Meier analysis. Previous POPUI surgery at the time of index surgery sonterred a hazard ratio of 1.9 (95% CI, 1.1-3.2; P = .018). The abdominal approach was protective against reoperation compared

with the vaginal approach (hazard ratio, 0.37; 95% CI, 0.17-0.83; P = .02) With the use of Cox regression, no association was observed for age, vaginal parity, previous hysterectomy, body mass index, prolapse severity, ethnicity, chronic lung disease, smoking, estrogen status, <u>surgical indication</u>, or <u>anatomic compartment</u>.

CONCLUSION: A reoperation rate of 17% is unacceptably high and likely represents an underestimate of the true rate. Most of the factors that influence reoperation have not yet been identified.

Key words: pelvic organ prolapse, surgery, urinary incontinence

Cite this article as: Denman MA, Gregory WT, Boyles SH, Smith V, Edwards SR, Clark AL. Reoperation 10 years after surgically managed pelvic organ prolapse and urinary incontinence. Am J Obstet Gynecol 2008;198:555.e1-555.e5.



Reoperation risk increased if previous surgery

26 vs 14%



Image: Nice and Aberdeen University review 2007

6 RCT's (full text)
11 RCT's (abstracts)
7 NR comparative
1 prospect. registry
24 case series

49 studies (including 17 RCTs)4569 patients treatedwith/without vaginal mesh/graft

Recurrence rates



Systematic review of the efficacy and safety of using mesh or grafts in surgery for anterior and/or posterior vaginal wall prolapse

Xueli Jia, Cathryn Glazener, Graham Mowatt, Graeme MacLennan, Cynthia Fraser, Jennifer Burr

> R e B I REVIEW BODY FO INTERVENTIONAL PROCEDURES

October 2007



Anterior repair objective failures

Jia X. et al, BJOG 2008

OR for synthetic mesh 0,19

Table 2. Bayesian meta-analysis models (above)* and indirect comparison (below)*, anterior repair: objective failure (recurrent prolapse at original site)

Categories	л	N	OR (adjusted for study design)	95% Crl	
No mesh/graft	184	540	Reference technique	_	
Absorbable synthetic mesh	52	161	0.82	0.50-1.32	
Absorbable biological graft	120	555	0.51**	0.360.72	
Nonabsorbable synthetic mesh	41	344	0.19**	0.12-0.30	
Comparisons			OR	95% Crl	
Absorbable biological graft versus absorb	able synthetic mesh	0.64	0.36-1.06		
Nonabsorbable synthetic mesh versus abs	orbable synthetic mesh	0.23** 0.1			
Nonabsorbable synthetic mesh versus abs	orbable biological graft	0.37**	0.23-0.59		

Crt, credible interval with 95% probability of containing the true odds ratio; n, cumulative number of women experiencing the event;

N, cumulative number of women analysed by the studies.

*Based on RC1s and nonrandomised comparative studies only

**Statistically significant.



Anterior repair efficacy

Jia X. et al, BJOG 2008 Subjective failure 10.6 / 4.5 / 7.4 / 1.8% Objective failure 28.8 / 23.1 / 17.9 / 8.8% Re-operation 2.4 / 9.2 / 3.2 / 1.3%

Table 1. Efficacy of anterior repair, summary of crude event rates (95% C), any study design) by type of mesh/graft

	No mesh, n/N (%, 95% Cl)	Absorbable synthetic mesh, n/N (%, 95% CI)	8iological graft, n/N (%, 95% Cl)	Nonabsorbable synthetic mesh, n/N (%, 95% CI)
Subjective failure	19/179 (10.6, 6.9 - 16.0)	5/112 (4.5, 1.9-10.0)	36/486 (7.4, 5.4-10.1)	1/55 (1.8, 0-6.5)
Objective failure	184/640 (28.8, 25.4-32.4)	63/273 (23.1, 18.5-28.4)	186/1041 (17.9, 15.7-20.3)	48/548 (8.8, 6.7-11.4)
De novo prolapse		10 A	8/58 (13.8, 7.2-24.9)	8/45 (17.8, 9.3-31,3)
Further operation needed*	2/85 (2.4, 0.6-8.2)	16/174 (9.2, 5.7-14.4)	9/280 (3.2, 1.7-5.0)	3/234 (1.3, 0.4-3.7)
Persistent uninary symptoms	9/10 (90.0, 59.6-98.2)	5/49 (10.2, 4.4-21.8)	13/14 (92.9, 68 5-98.7)	17/44 (38.6, 25.8-53.4)
Persistent bowel symptoms	#++	na da persona en el compositiones. P arra		
Persistent dyspareonia	-44			

-, no studies reported this outcome.

*Surgery for prolapse (recurrent or de novo).



Cochrane 2011 / 2012



Surgical management of pelvic organ prolapse in women (Review)

- ✓ 40 RCTs
- Increased risk of recurrent cystocele with traditionnal repair compared to trans-obturator mesh

RR 3.55 (IC95% 2.29-5.51)

✓ No significant difference on functional results, because of mesh-related complications (shrinkage, exposure, pain, dyspareunia) and increased risk of re-intervention related to complications





Int Urogynecol J (2013) 24:1791-1802 DOI 10.1007/s00192-013-2170-3

POP SURGERY REVIEW

Anterior vaginal compartment surgery

Christopher Maher

Level 1 evidence

Superior anatomical outcome for PP mesh /biological graft

Superior subjective and objective outcomes following ant TVM PP / ant colporraphy

Mesh extrusion rate: 10.4% More apical or post POP / ant repair Results Absorbable mesh augmentation of anterior compartment native tissue repair improves the anatomical outcome compared with native tissue repair alone with no increased complication rate in meta-analysis of 2 RCTS (grade B). Biological grafts in meta-analysis have improved anatomical outcomes with no change in subjective outcomes compared with native tissue repairs (grade B). There is conflicting level 1 evidence to support porcine dermis and a single RCT to support small intestine submucosa as graft agents in anterior compartment prolapse surgery (grade B). Consistent level 1 data support a superior anatomical outcome for polypropylene mesh compared with a biological graft in the anterior compartment. Mesh exposure rate was significantly higher in the polypropylene mesh group (grade A). Consistent level 1 evidence demonstrates superior subjective and objective outcomes following anterior transvaginal polypropylene mesh as compared to anterior colporrhaphy (grade A). These outcomes did not translate into improved functional results using validated questionnaires or a lower reoperation rate for prolapse. The mesh group was also associated with longer operating time, greater blood loss and apical or posterior compartment prolapse as compared with anterior repair. Anterior polypropylene mesh had a mesh extrusion rate of 10.4 % with 6.3 % requiring a surgical correction (grade B). Single level 3 evidence does not support the use of transvaginal polypropylene mesh for recurrent anterior vaginal wall prolapse (grade C).

Conclusion Polypropylene anterior compartment mesh offers improved objective and subjective outcomes compared with native tissue repair; however, these benefits must be considered in the context of increased morbidity associated with anterior polypropylene transvaginal mesh.



Int Urogynecol J (2013) 24:1835-1841 DOI 10.1007/s00192-013-2174-z

POP SURGERY REVIEW

Surgery for posterior vaginal wall prolapse

Mickey Karram · Christopher Maher

No evidence to support the use of PP mesh in post vaginal prolapse surgery *Results* Level 1 and 2 evidence suggest that midline plication posterior repair without levatorplasty might have superior objective outcomes compared with site-specific posterior reopair (grade B). Higher dyspareunia rates are reported when levatorplasty is employed (grade C). The transvaginal approach is superior to the transanal approach for repair of posterior wall prolapse (grade A). To date, no studies have shown any benefit of mesh overlay or augmentation of a suture repair for posterior vaginal wall prolapse (grade B). While modified abdominal sacrocolpopexy results have been reported, data on how these results would compare with traditional transvaginal repair of posterior vaginal wall prolapse are lacking.

Conclusion Midline fascial plication without levatorplasty is the procedure of choice for posterior compartment prolapse. No evidence supports the use of polypropylene mesh or biological graft in posterior vaginal compartment prolapse surgery.



Int Urogynecol J (2013) 24:1853–1857 DOI 10.1007/s00192-013-2176-x

POP SURGERY REVIEW

Pelvic organ prolapse and sexual function

Viviane Dietz · Christopher Maher

2013

Cable 1	Meta-analysis sexual	function data fron	randomised controlled	trials (RCT) comparin	g transvaginal mesh	with native tissue repairs
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Reference	De novo dyspareunia		Postoperative dyspareunia		Postoperative PISQ score	
	Vaginal mesh	Native tissue	Mesh	Native tissue	Mesh	Native tissue
Altman et al. [15]			8/110	2/101	33.1±6.7	32.2±7.2
					35.1 (1.4)	35.0 (1.4)
Vollebregt et al. [11]	3/20	2/21				
Carey et al. [12]	5/18	5/12	12/30	13/33	Change -6.9	Change -7.8
Sivaslioglu et al. [14]	2/43	0/42				
Nguyen and Burchette [13]	2/22	4/26	2/23	2/23	33±3 34±6	32±4 33±3
Iglesia et al. [21]	1/11	3/14			31/34	32/35
Milani et al. [17]	3/37	3/29	9/53	12/51	35±5.7	31.5±7.2
					34.0 ± 6.7	34.7±5.7
Total	16/151	17/144	31/216	26/207	0.09 (-0.17, 0.3	6)
((10.6 %)	(11.8 %)	(14.4 %)	(12.5 %)	No difference	



Pelvic organ prolapse and sexual function

Viviane Dietz · Christopher Maher

2013

Table 2 Meta-analysi	fable 2 Meta-analysis of sexual function from prospective evaluations of transvaginal meshes								
Reference	n	De novo dyspareunia (%)	Follow-up (months)	Mesh	PISQ-12 pre	PISQ-12 post			
Withagen et al. [22]	294	20/71 (28)	12	РР					
Maher [23]	55	3/21 (14)	24	PP					
Long [42]	60 (Perigee TM)	10/60 (16)	6	PP					
	48 (Prolift TM)	12/48 (25)	6	PP					
Milani et al. [35]	127	1/43 (2)	12	PP light	33.4 ± 7.7	39.0±4.4			
Sergent [43]	101	4/52 (8)	57	Coated PP					
Sayer et al. [32]	110	2/32 (6)	24	PP	32.2 ± 6.2	36.8 ± 5.5			
Jacquetin et al. [37]	90	5/35 (14)	3	PP		No			
Moore et al. [31]	87	6/65 (9)	24	PP	33.4±7.7	36.8 ± 5.5			
Fayyad et al. [26]	36	7/16 (43)	24	PP	NA	NA			
Feiner et al. [38]	117	4/51 (8)	12	PP	NA	NA			
Wetta et al. [30]	50		12	PP	20.2±4.9	16.2 ± 6.0			
Milani et al. [39]	46	2/11 (18)	1	PP					
Altman et al. [28]	69		12	PP	15.5 ± 8.0	11.7 ± 6.7			
Su et al. [29]	33		6	PP	29.5±9.0	19.3 ± 14.7			
Lowman et al. [40]	57	6/36 (17)	12	PP	NA	NA			
Hinoul et al. [41]	48	3/20 (15)	12	PP	NA	NA			
Sentilhes et al. [33]	83	6/37 (16)	1	PP	33.4 ± 7.8	35.5+7.3			
de Tayrac et al. [36]	143	10/78 (12.8)	10	Coated PP		No			
Total	-	102/680 (15.0)	100 C	1774	1475	9777			



MORBI-MORTALITY REGISTRY AFTER POP SURGICAL TREATMENT AMONG FRENCH GYNECOLOGIST SURGEONS

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Unpublished data



- 4820 surgical procedures recorded (May 2012 January 2013)
- 317 surgeons
- 3677 procedures vaginally (76.3%)

Techniques / Vaginal procedures

- > Synthetic mesh used in 46.5% anterior repair
 - > Transobturator technique was preferred in 82.4%
- Synthetic mesh used in 40.1% posterior repair
- > Apical suspensions done by
 - > SSLS 59.3%
 - posterior tape 23.9%
 - high US ligament fixation 16.8%







INTRA-OP Complications vaginal procedures

Anterior Repair (n=2846)	Mesh Surgery n = 1420	Traditional Repair n = 1426	р
Overall complications	2.7%	2.6%	0.9
Bladder injuries	1.5%	1.3%	0.5
Rectal injuries	0.1%	0.4%	0.2
Vascular injuries	0.1%	0.4%	0.2
Haemorrages	0.8%	0.6%	0.4



POST-OP Complications / vaginal procedures

Anterior Repair (n=2846)	Mesh Surgery n = 1420	Traditional Repair n = 1426	p
Overall complications	8%	3.9%	<0.01
Haematomas	2.3%	2.5%	0.7
Blood transfusion	0.6%	0.4%	0.5
Vaginal exposures	3.6%	0	<0.01
Bladder/rectal exposures	0.07%	0	0.3
Chronic pain	1.5%	0.6%	0.02
Pelvic abcess	0.4%	0.5%	0.6
Fistula	0.07%	0.3%	0.2
Pulmonary embolism	0.1%	0	0.2
Intensive care	0.2%	0.07%	0.3
Re-intervention	3.2%	2.3%	0.2



- Prolapse of stage≥3 (> +1 cm hymen)
 Particularly if both central and lateral defect
 Particularly in active / obese patient
- 2. Recurence after anterior repair





• Gold standard = Sacrocolpopexy

< 50-60 y.o.

> 70-80 y.o.



- Factors to be considered:
 - Decreasing of physical activities
 - Acceptance of pessaries
- Efficacy of colpocleisis
- Risk of vaginal erosions increases (vaginal atrophy) Multivariate analysis on 138 patients with 27 vaginal erosions (20%)
 Patients of > 70 ans

OR 3,6 [95% CI 1,3-9,7] *p*=0,01

Deffieux et al., Int Urogynecol J 2007



Absolute contra-indications for synthetic meshes

- Previous post-op infection
- Non-equilibrated diabetes
- Long-term steroid use
- Immunodepression
- Chronic hepatitis with ascitis
- Per-op complex vesical or rectal injury

Risk of exposure, infection

Risk of fistula



• Pre-operative sexual activity

• Concomittant hysterectomy

• Associated posterior mesh

Risk of dyspareunia up to 15%

Risk of exposure

Not enough evidence



HOW TO DECREASE VAGINAL EXPOSURE?



- ✓ Do appropriate training
- ✓ Use only polypropylene
 monofilament macroporous
 - ✓ Respect strict aseptia
- ✓ Avoid inverted T colpotomy
 - ✓ Use a deep incision
- ✓ Avoid vaginal sulcus perforation
- ✓ Avoid concomitant hysterectomy
 - ✓ Use smaller mesh
 - ✓ Use Lighter mesh



SURGEON EXPERIENCE

• The learning curve



DWYER et al. Br J Obstet Gynaecol 2005

- Univariate logistic regression on 198 patients with 14 erosions (7.1%):
 Consultant vs fellow Erosion rates: 2.9% vs 15.6%
 - OR 0.31 [95% CI 0.09-1.0] *p*=0.06

ACHTARI, DWYER et al., Int Urogynecol J 2005

New developments



Anatomical considerations

- The apex is often involved in high grade cystoceles
 - in those patients it is essential to surgically address the involvement of the middle compartment appropriately



American Journal of Obstetrics and Gynecology (2006) 194, 1438-43



The relationship between anterior and apical compartment support

Aimee Summers, BSE,^a Lisa A. Winkel,^b Hero K. Hussain, MD,^c John O. L. DeLancey, MD^{a,*}

American Journal of Obstetrics & Gynecology

2006





Ant Mesh kits

- those designed to provide anterior repair only (Level II)
 - Ant Prolift
 - Perigee
 - Avaulta





Level II repair (the hammock theory) Not designed to restore apical support

Technical considerations Ant mesh kits

- 2 types of Anterior Mesh kits
 - those designed for the combined repair of anterior and middle compartments
 - (Level II and I)
 - Ant Pinnacle
 - Ant Elevate
 - Uphold
 - Restorelle









Smaller mesh with apical suspension





Exposure rates < 3%

Vu & Goldberg R et al, Int Urogynecol J 2011 de Tayrac et al., Eur J Obstet Gynecol 2012 Rivaux, Fatton, de Tayrac et al., Prog Urol 2012 ORIGINAL ARTICLE

Minimal mesh repair for apical and anterior prolapse: initial anatomical and subjective outcomes

2012

Manhan K. Vu • Juraj Letko • Kelly Jirschele • Adam Gafni-Kane • Aimee Nguyen • Honyan Du • Roger P. Goldberg

115 Pts @ median 12.1 (0.4-30.9) months								
Uterus in situ 53 Pts Vault Prolapse Hysterectomy				e (Prior 23 Pts	Concur	rent Hyste 24 Pts	rectomy	
POPQ	Pre-op mean	Post-op mean	POPQ	Pre-op mean	Post-op mean	POPQ	Pre-op mean	Post-op mean
Aa	+0.9	-2.4	Aa	+0.6	-2.3	Aa	+2.0	-2.6
Ва	+1.5	-2.4	Ва	+1.1	-2.2	Ва	+3.1	-2.3
С	-2.4	-7.7	С	-2.9	-7.5	С	+0.9	-7.8
Apical re	currence	1.89% (1/53)	Apical recurrence		0% (0/23)	Apical recurrence		4.2% (1/24)
Anterior r	ecurrence	0% (0/53)	Anterior r	ecurrence	0% (0/24)	Anterior I	recurrence	0% (0/24)

Mesh exposure rate : 2,6% (3/115)

Single-incision vaginal a prolapse with an anteri- to the sacrospinous liga	approach to or wall mes ments	o treat cystocele and sh anchored apically	l vault y	Elevate a	nt
1			Preoperative	Postoperative	P value (t test)
Robert D. Moore - Gretchen K. Mitchell - John R. Miktos	5	Mean POP-Q measurements			
	2012	Point Aa (cm)	+1,4±1,4	-2.4 ±0.8	<0.001
	2013	Point Ba (cm)	$+2.0\pm1.3$	-2.5±0.9	<0.001
		Point C (cm), cervix.	-2.7±2.9	-8.3 ±0.9	<0.001
		Point Ap	-1.1 ± 1.3	-2.4 ±0.6	<0.001
Good anatomical outcome		Point Bp	-0.9 ± 1.6	-2,3±0.6	<0.001
		Total vaginal length (cm)	9.09±0.5	9,16±0,3	0.343

Elevate Anterior/Apical: 12-Month Data Showing Safety and Efficacy in Surgical Treatment of Pelvic Organ Prolapse

Edward J. Stanford, MD, MS,* Robert D. Moore, DO,† Jan-Paul W.R. Roovers, MD, PhD,‡ Christophe Courtieu, MD,§ James C. Lukban, DO,// Eduardo Bataller, MD,¶ Bernhard Liedl, MD,# and Suzette E. Sutherland, MD**

2013

Baseline Anterior, 12 mo			Apical, 12 mo			
POP-Q	No. Subjects	No. Success	Success, %	No. Subjects	No. Success	Success, %
Stage II	29	25	86.2	41	39	95.1
Stage III	82	74	90.2	26	26	100
Stage IV	3	1	33.3	6	5	83.3
Total	114	100	87.7	73	70	95.9



Lighter mesh (≤35 g/m2)

Surg Endose (2013) 27:231-239 DOI 10.1007/s00464-012-2425-y



Randomized clinical trial of laparoscopic hernia repair comparing titanium-coated lightweight mesh and medium-weight composite mesh

- ✓ Recent RCT in hernia surgery
- ✓ Light (35g/m², Timesh[®]) vs medium-weight mesh (75g/m², Parietex[®])
- ✓ Decreased post-op pain
- ✓ Return quickly to normal activities
- \checkmark With no increased risk of recurrence at 2 years

Moreno-Egea A et al., Surg Endosc 2013



A systematic review and meta-analysis evaluating the effectiveness of lightweight mesh against heavyweight mesh in influencing the incidence of chronic groin pain following laparoscopic inguinal hernia repair

Muhammad S. Sajid, M.D.*, Lorain Kalra, M.D., Umesh Parampalli, M.D., Parv S. Sains, M.D., Mirza K. Baig, M.D.



Figure 8 Chronic groin pain. M-H = Mantel-Haenszel.

	LWAR	4	HW	1		Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% Cl	M-H, Fixed, 95% Cl
Agarwal [32]	0	25	0	25		Not estimable	
Bittner (33)	1	150	0	150	9.8%	3.00 (0.12, 73.06)	
Bittner [34]	2	450	1	150	29.4%	0.67 (0.06, 7.30)	
Bringman (35)	0	69	0	70		Not estimable	
Champault [36]	1	57	1	80	16.3%	1.40 [0.09, 21.97]	
Chowbey [37]	5	191	1	211	18.6%	5.52 (0.65, 46.86)	-
Langenbach [41]	1	58	2	117	26.0%	1.01 [0.09, 10.90]	
Peeters [42]	0	39	0	20		Not estimable	
Total (95% Cl)		1039		823	100.0%	2.01 (0.71, 5.67)	-
Total events	10		5				
Heterogeneity: Chi? =	= 2.12, df =	4 (P=	0.71); 17:	= 0%			ata da la da d
Test for overall effect	Z=1.32	(P = 0.1	(9)				Eastern Linter Fasteries HVM

Figure 7 Recurrence. M-H = Mantel-Haenszel.



The use of LWM for laparoscopic hernia repair is not associated with an increased risk for hernia recurrence.

11 RCTs

2189 patients

LWM reduces the incidence of chronic groin pain, groin stiffness and foreign body sensations



Comparison of vaginal mesh extrusion rates between a lightweight type I polypropylene mesh versus heavier mesh in the treatment of pelvic organ prolapse

Robert D. Moore - James C. Lukban

2012

Résultats issus de 3 RCT	Table 3 Extrusion rates					
(Perigee study ad Propel study (phase Let IV)		IntePro	IntePro Lite	<i>p</i> value (Fisher's exact)		
 IntePro: 50 g/m2 	All devices No. of implants	371	116			
IntePro lite: 25,2 g/m2	No. of extrusions (%)	41 (11.1 %)	7 (6.0 %)	0.11		
	Average days to onset (mean±SD) Anterior compartment	142.9±127.0	204.8±133.7	0.162 ^a		
	No. of implants	174	60			
	No. of extrusions (%)	14 (8.0 %)	3 (5.0 %)	0.57		
Différence statistiquement NS	Average days to onset (mean±SD)	193.1±139.3	70.3±16.5	0.301 ^a		
mais ON estime~ 1,95	Posterior compartment/apical					
	No. of implants	197	56			
	No. of extrusions (%)	27 (13.7 %)	4 (7.1 %)	0.25		
	Average days to onset (mean±SD)	122.6±100.9	235.3±143.9	0.057 ^a		

^a Analysis of variance two-sample *t* test

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Indications, Contraindications, and Complications of Mesh in Surgical Treatment of Pelvic Organ Prolapse

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2013



Controversies in utilization of transvaginal mesh

Neeraj Kohli

CONCLUSION

 TABLE 1. Factors for the Consideration of Use of Vaginal Mesh in Pelvic Organ Prolapse

 Surgery

	Likely	Possible	Unlikely	Not
Variables	Benefit	Benefit	Benefit	Recommended
Age (y)				
< 50			٠	
\geq 50				
Recurrent (same site)		•		
Cystocele/anterior compartment				
Stage ≥ 2		•		
Stage ≤ 2				•
Posterior compartment			•	
Apex (vault, cuff, cervix)		•		
Deficient fascia		•		
Chronic increase intra-abdominal pressure		•		
Pain syndromes (local/systemic)				٠
Possibility of pregnancy				•
Combination factors				
Recurrent + cystocele stage > 2	٠			
Recurrent + posterior compartment		•		
Recurrent + apex/cuff/cervix	٠			
Recurrent + increased abdominal pressure	•			
Recurrent + deficient fascia	٠			
Cystocele stage > 2 + increased intra-abdominal pressure	•		,	
Cystocele stage $>2+$ deficient fascia	•			

Adapted from Davila et al.¹⁶



Conclusion

EFFICACY	Strong evidence of mesh superiority for anterior repair
INDICATIONS	 ✓ Primary stage 3-4 Ant or Ant-Apical POP ✓ Recurrences after anterior repair or abdominal SCP
SAFETY	 ✓ Specific complications with risk of re-operation ✓ But, morbidity could occur whatever the technique ✓ Importance of pre-op patient's information / expectation ✓ Importance to respect contra-indications ✓ Importance of surgical training / surgeon experience ✓ Promissing new developments (smaller and lighter meshes)
FUTURE	 ✓ Need to better define patients with high risk of recurrence after traditional repair ✓ Need to better define risk factors for mesh complications