AGES Pelvic Floor
Symposium & Workshop XI

Optimising Surgical Outcomes

Brisbane Australia

Australasian Gynaecological Endoscopy & Surgery Society Limited

15 & 16 October 2010

AGES Workshop 17 October
Pelvic Floor Assessment and Ultrasound

International Faculty

Prof. Michel Cosson France

Dr Roger Goldberg USA

Dr Matthew Clark USA

Program & Abstract Book

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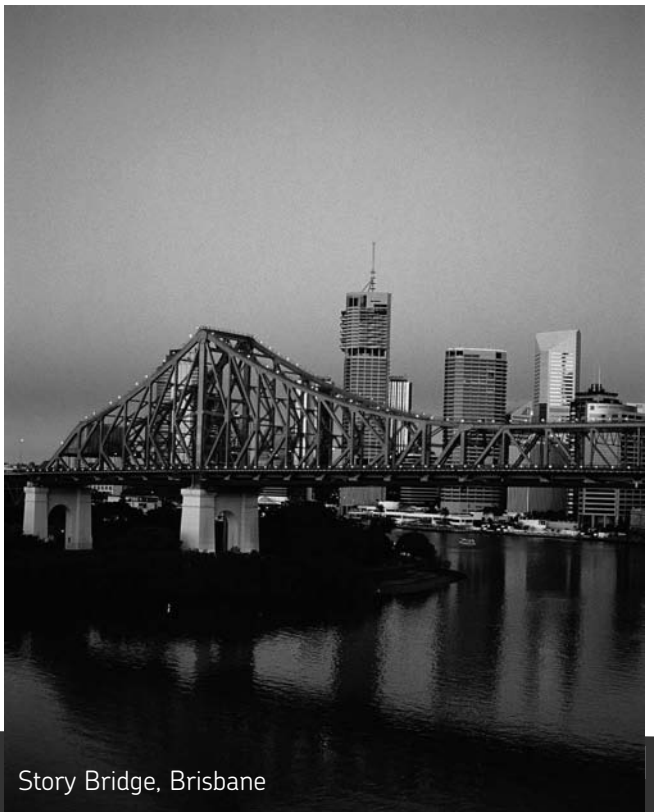


Story Bridge, Brisbane

Welcome

Dear Colleagues

The *2010 AGES Pelvic Floor Symposium and Workshop* promises to be both stimulating and interactive. We are very fortunate to have three distinguished overseas faculty. Michel Cosson from Lille, France, a key developer of the 'Prolift', one of the original vaginal mesh kits, is a world leader on the biomechanics of pelvic organ prolapse and is actively involved in bio-engineering research and the clinical evaluation of mesh and native tissue.

Roger Goldberg from Chicago, United States, inventor of the uterine suspension technique, 'Uphold' will share his large clinical expertise and results of twin epidemiological studies addressing incontinence and pelvic organ prolapse. Matthew Clark from Los Angeles, United States is a clinician with significant expertise in both the vaginal mesh kit, 'Elevate' and robotic sacral colpopexy.

Many of our own Australian faculty are well known urogynaecologists and gynaecological surgeons with international reputations and we are grateful for their ongoing support of AGES and look forward to their contributions. As the meeting follows the combined International Continence Society/International Urogynecological Association meeting in Toronto in August 2010, up to date information and research from this meeting will be presented.

We welcome you to the *2010 AGES Pelvic Floor Symposium and Workshop XI*.

Alan Lam
President AGES
Conference Chair

Anna Rosamilia
Director AGES
Scientific Chair

Membership of AGES

Membership application forms are available from the AGES website or from the:

AGES Secretariat,
282 Edinburgh Road,
CASTLECRAG, SYDNEY NSW 2068
AUSTRALIA

Day 1 Friday 15 October 2010

Sofitel Brisbane Central Ballroom 1 & 2

0730-0800 Conference Registration

0800-0815 Conference opening and welcome
A decade of Pelvic Floor meetings
A Lam

0815-0940 **SESSION 1 Evaluation of Surgical Outcomes** *Sponsored by Stryker*
Chairs: R Ford, R O'Shea

0815-0820 Learning objectives and outcomes
A Rosamilia

0820-0830 Has POP-Q done what it set out to do?
M Clark

0830-0850 Functional outcomes are more important than anatomical outcomes
A Rosamilia

0850-0910 The classification of mesh complications
B Haylen

0910-0940 **Keynote lecture**:
Biomechanics of the pelvic floor – past, present, future
M Cosson

0940-1010 Morning Tea and Trade Exhibition

1010-1210 **SESSION 2 – It's All About the Apex**
Sponsored by Johnson & Johnson Medical
Chairs: A Yazdani, M Carey

1010-1015 Learning objectives and outcomes
J Lee

1015-1030 Anatomy of pelvic organ prolapse
J Lee

1030-1050 Literature review of surgery for upper vaginal prolapse *Y N Lim*

1050-1110 Anterior uterosacral suspension
B Haylen

1110-1130 The 'Uphold' mesh suspension
R Goldberg

1130-1150 Robotic sacral colpopexy
M Clark

1150-1210 Quiz the panel
Panel: *M Clark, J Lee, R Goldberg, Y N Lim, B Haylen*

1210-1310 Lunch and Trade Exhibition

1310-1530 **SESSION 3 Cystocoele: Have Mesh Kits Made Laparoscopic Surgery Redundant?** *Sponsored by Stryker*
Chairs: A Lam, B Haylen

1310-1315 Learning objectives and outcomes
P Higgs

1315-1330 Literature review of surgery for anterior compartment prolapse *P Higgs*

1330-1350 Prolift – has 'side to side' been the answer? *M Cosson*

1350-1410 Anterior Elevate – is 'front to back' better? *M Clark*

1410-1430 Prosima – 'pure and simple'?
M Carey

1430-1450 Anterior Pinnacle – 'apex and lateral' attachment *R Goldberg*

1450-1510 Is laparoscopic paravaginal repair outmoded? *R O'Shea*

1510-1530 Quiz the panel
Panel: *M Carey, M Clark, M Cosson, R Goldberg, P Higgs, R O'Shea*

1530-1600 Afternoon Tea and Trade exhibition

1600-1730 **SESSION 4 Mesh or Mess?**
Sponsored by Karl Storz Endoscopy
Chairs: J Tsaltas, Y N Lim

1600-1620 Informed consent for POP surgery – it's a jungle out there *M McEvoy*

1620-1630 Discussion

1630-1650 Mesh registry – who, how, costs, examples from international and national joint register *A Rosamilia*

1650-1700 Discussion

1700-1730 How I minimise mesh and associated complications
Panel: *M Carey, M Clark, M Cosson, R Goldberg*

1900 for 1930 **Gala Dinner**
Restaurant Two
2 Edward Street, Brisbane
Complimentary coach transfers provided
Please assemble in the hotel foyer at 1830

Day 2 Saturday 16 October 2010

Sofitel Brisbane Central Ballroom 1 & 2

0800-1030 **SESSION 5 Urinary Continence**
Sponsored by Boston Scientific
Chairs: H Merkur, J Goh

0800-0805 Learning objectives and outcomes — *Y N Lim*

0805-0820 Literature review on mid-urethral slings — *Y N Lim*

0820-0840 Medical therapies for urinary incontinence — *H Krause*

0840-0900 Miniarc: video and results — *A Rane*

0900-0920 TVT-O new development — *M Cosson*

0920-0940 Botulinum toxin – evidence and results — *J King*

0940-1000 Sacral neuromodulation – current indications and results — *M Carey*

1000-1030 SUI surgery: primary, recurrent, mixed – which procedure is best
Panel: *M Cosson, R Goldberg, J King, H Krause, Y N Lim, A Rane*

1030-1100 Morning Tea and Trade Exhibition

1100-1210 **SESSION 6 Complicated Cases**
Sponsored by American Medical Systems
Chairs: M McEvoy, A Rane

1100-1105 Learning objectives and outcomes — *K Jansen*

1105-1130 Genital fistulae — *J Goh*

1130-1150 Laparoscopic approach to managing complicated cases — *A Lam*

1150-1210 Vaginal and vesical approaches to manage complicated cases — *A Rosamilia*

1210-1310 Lunch and Trade Exhibition

1310-1430 **SESSION 7 Should I Have the Chop to Stop the Pop?**
Sponsored by Johnson & Johnson Medical
Chairs: A Yazdani, J Goh

1310-1315 Learning objectives and outcomes — *F Chao*

1315-1340 'Nature or nurture?' Insights into incontinence & pelvic dysfunction from the University of Chicago Twin Studies — *R Goldberg*

1340-1410 The role of pelvic floor ultrasound – levator muscle trauma and its implications — *P Dietz*

1410-1430 Is Caesarean section protective for pelvic floor disorders? — *F Chao*

1430-1500 Afternoon Tea and Trade Exhibition

1500-1700 **SESSION 8 Perineal Trauma / Posterior Compartment**
Sponsored by Stryker
Chairs: K Jansen, H Krause

1500-1505 Learning objectives and outcomes — *P Higgs*

1505-1520 Obstetric anal sphincter repair: how to identify, repair and improve the outcome — *P Higgs*

1520-1550 Posterior Prolift – proven value? — *M Cosson*

1550-1610 Posterior Pinnacle — *R Goldberg*

1610-1630 Posterior Elevate – new kid on the block? — *M Clark*

1630-1650 Laparoscopic posterior compartment approach — *G Cario*

1650-1700 Quiz the panel
Panel: *G Cario, M Clark, M Cosson, R Goldberg, P Higgs*

1700 Close — *A Rosamilia*

Day 3 Sunday 17 October 2010

Sofitel Brisbane Central Ballroom 1 & 2

AGES Workshop

Pelvic Floor Assessment and Ultrasound

Sponsored by GE Healthcare

Presenter:

Professor Peter Dietz

Workshop Program

Sunday 17 October 0830 to 1300

0830 - 0840	Introduction
0840 – 0910	Anterior compartment
0910 – 0940	Posterior compartment
0940 – 1010	Slings and meshes
1010 – 1040	Pelvic floor trauma
1040 – 1050	Morning Tea
1050 – 1250	Live Scanning
1250 – 1300	Close

This is an optional Post-Conference Workshop. Registration is essential and available until 1700, Friday 15 October at the Registration Desk.

PR&CRM and CPD Points

AGES Pelvic Floor Conference

This meeting has been approved as a RANZCOG Approved O&G Meeting and eligible Fellows of this College will earn CPD points for attendance as follows:

Full attendance 17 points

Attendance 15 October - 9 points

Attendance 16 October - 8 points

Attendance by eligible RANZCOG Members will only be acknowledged following signature of the attendance roll on both mornings of the Conference.

The RANZCOG "Clinical Risk Management Activity Reflection worksheet" (provided in the Conference satchel) can be used by Fellows who wish to follow up on a meeting or workshop that they have attended to obtain **5 PR&CRM points**. This worksheet enables you to demonstrate that you have reflected on and reviewed your practice as a result of attending a particular workshop or meeting. It also provides you with the opportunity to outline any follow-up work undertaken and to comment on plans to re-evaluate any changes made. For further information, please contact the College.

AGES Post-Conference Workshop

The AGES Post-Conference Workshop has been approved as a RANZCOG Approved O&G Meeting and eligible Fellows of the College will earn points as follows:

Attendance 17 October - 5 CPD and 4 PR&CRM points

Attendance roll must be signed for points to be awarded.

Friday 15 October

A decade of AGES pelvic floor meetings

Friday 15 October / 0800-0815

Lam A

During the last decade, the AGES Pelvic Floor Symposium and Workshop has grown to become a significant annual surgical and scientific conference, helping our members keep up with the most exciting and dynamic changes in the history of the disorders of the pelvic floor.

From a humble beginning, the AGES Pelvic Floor Symposium and Workshop concept was conceived following the outstanding success of the IX AGES Annual Scientific Meeting in Adelaide which was held at the Hyatt Regency on 27-29 May 1999. The theme of this ASM was PELVIC FLOOR REPAIR – LAPAROSCOPIC OR VAGINAL? Professor Maurice Webb (Mayo Clinic) was the defender for vaginal surgery. Thierry Vancaille, Harry Reich and I were advocating the laparoscopic approach.

Following the success of the I Symposium in Sydney, the II AGES Pelvic Floor Symposium and Workshop was also held in Sydney on 14-15th September, 2001 at the Sheraton on the Park Hotel. This was almost derailed due to the trauma of the catastrophic events 3 days earlier in the US. As it happened, the symposium and the live workshop transmission from the Mater hospital proceeded without a hitch.

The III AGES Pelvic Floor Symposium and Workshop was the first of many successful pelvic floor symposia held in Adelaide on 18-19 October, 2002. It focused on PELVIC PROLAPSE FOR THE GENERALIST – CONTROVERSIES AND SOLUTIONS. This theme was chosen to reflect the belief that AGES recognises that pelvic floor disorders assume an important role for most practising gynaecologists, as well as uro-gynaecologists, urologists, and colo-rectal surgeons.

In 2003, AGES brought out the renowned US urogynaecologist and author Mark Walters from Cleveland Clinic to debate the question of TO MESH OR NOT TO MESH?

In 2004, our guest Karl Zimmerman, enhanced another Adelaide meeting PRIMARY VAGINAL CARE - GETTING IT RIGHT.

In 2005, Tony Smith, UK renowned uro-gynaecologist and laparoscopic surgeon, was our invited speaker for the VI Pelvic Floor Symposium, held in Melbourne on 14-15th October, looking at NEW SOLUTIONS.

In 2006, the world -renowned anatomist and author John Delance (USA) and the leader in prosthetic material researcher Michel Cosson (France) set the VII AGES Pelvic Floor Symposium & Workshop buzzing in Brisbane on 17-18 November 2006, looking at ANATOMY AND FUNCTION OF THE PELVIC FLOOR.

In 2007, Adelaide hosted Professors Linda Cardozo (UK) and Peter Sands (USA) to examine PELVIC FLOOR SURGERY IN PERSPECTIVE. They teamed up fabulously to stimulate vigorous discussion. Linda was well remembered for her hilarious and witty presentation on DESIGNER VAGINA.

AGES welcomed back Mark Walters and his colleague Marie-Fidel Paraiso from Cleveland Clinic for the VIII Pelvic Floor Symposium in Sydney 2008. This was followed by the IX Symposium in Melbourne in 2009 featuring Professors Jan Deprest (Belgium) and Mickey Karram (US).

And so, as we gather in Brisbane on 15-16th October 2010 for our XI Pelvic Floor Symposium and Workshop , I am proud to see that AGES has continued playing a central role in helping gynaecologists in Australia and New Zealand keep up with the dynamic and relentless changes in the management of pelvic floor disorders.

SESSION 1
Evaluation of Surgical Outcomes

Learning objectives and outcomes

- Current best practice in the assessment of POP using the POP-Q system and its deficiencies
- Important considerations in evaluating surgical success in POP surgery
- Introducing the new classification of mesh complications as recommended by ICS-IUGA

Has POP-Q done what it set out to do?

Friday 15 October / Session 1 / 0820-0830

Clark M

Introduced in 1996 the Pelvic Organ Prolapse Quantification system (POP-Q) attempted to unify the language and physical exam findings in describing pelvic organ prolapse. Prior to this the prolapse nomenclature was not validated and robust. The POP-Q has been instrumental in helping to understand the natural history and prevalence of prolapse. But now armed with this knowledge the limitations of the POP-Q are exposed. To continue to be relevant for the future modification of the staging is needed.

AUTHOR AFFILIATIONS: Matthew H. Clark, M.D. The Clark Center for Urogynecology Newport Beach CA, USA.

Functional outcomes are more important than anatomical outcomes

Friday 15 October / Session 1 / 0830-0850

Rosamilia A

The exact success rate from conventional as well as new surgical procedures for pelvic organ prolapse is unknown. Usually objective measures, e.g. Pelvic Organ Prolapse Quantification (POPQ) assessment have been used as the primary outcome in most studies which show that procedures such as anterior repair have a poor outcome. However these outcomes correlate poorly with

subjective assessment and re-operation rates are lower than the anatomical failure rate suggesting that conventional surgery might not have as poor an outcome as previously suggested. Nonetheless, new procedures have been introduced for which efficacy and safety data are required via well conducted randomised controlled trials. Two examples of differing descriptions of pelvic organ prolapse surgical success rates using a variety of definitions will be presented. The examples are the Colpopexy and Urinary Reduction Efforts trial[1] and the 3 arm anterior colporrhaphy study by Weber et al.,[2] using definitions of success with differing requirements for anatomic, symptomatic, or re-treatment outcomes. The conclusions generally are that the definition of success substantially affects treatment success rates after pelvic organ prolapse surgery. The absence of vaginal bulge symptoms postoperatively has a significant relationship with a patient's assessment of overall improvement, while anatomic success alone does not.

REFERENCES:

1. Obstet Gynecol. 2009 Sep;114(3):600-9.Defining success after surgery for pelvic organ prolapse. Barber MD, Brubaker L, Nygaard I, Wheeler TL 2nd, Schaffer J, Chen Z, Spino C
2. Chmielewski L, Walters M, Weber A, Barber M. Re-analysis of a randomised trial of three methods of anterior colporrhaphy using more relevant definitions of success. Abstract 97. ICS IUGA 2010

The classification of mesh complications. An International Urogynecological Association (iuga) / International Continence Society (ics) joint terminology and classification of the complications related directly to the insertion of prostheses (meshes, implants, tapes) and grafts in female pelvic floor surgery

Friday 15 October / Session 1 / 0850-0910

Haylen BT, Freeman RM, Swift SE, Cosson M, Davila GW, Deprest J, Dwyer PL, Fatton B, Kocjancic E, Lee J, Maher C, Rizk DE, Petri E, Sand PK, Schaer GN, Webb R

OBJECTIVE: To develop a clear, clinically-based consensus (collective opinion) Terminology and Classification for complications directly arising from the insertion of prostheses and grafts in female pelvic floor surgery.

BACKGROUND: With the increasing use of prostheses and grafts in female pelvic floor surgery, clarification of Terminology and a clinically-based Classification is needed for complications resulting from such practices. A Draft Report was developed incorporating; (i) Definitions for all Terminology from a range of sources; (ii) A classification allowing comprehensive coverage of both insertion complications and healing abnormalities.

A total of eleven rounds of Committee review have ensued, three involving members of the IUGA Standardization and Terminology Committee, a further eight involving a joint IUGA/ICS Working Group. Each round involved independent review by the relevant Committee Members, collation of comments, and final decision-making on definitions, additions and deletions based on collective opinion (majority or unanimity). One round of review involved testing of the Classification using 10 clinical scenarios. Another followed website publication to IUGA and ICS members. The final round of review followed a live Meeting in Toronto.

METHODS: The Terminology component of the project involves (i) 8 definitions related to those prostheses and grafts used; (ii) 9 definitions related to the different descriptions for complications. Table 1 of user-friendly A4 colour charts outline these definitions.

The Classification incorporated separate Category (C), Time (T)

Table 2: A CLASSIFICATION OF COMPLICATIONS RELATED DIRECTLY TO THE INSERTION OF PROSTHESES (MESHES, IMPLANTS, TAPES) OR GRAFTS IN UROGYNECOLOGICAL SURGERY

CATEGORY

	General Description	A (Asymptomatic)	B (Symptomatic)	C (Infection) D (Abscess)
1	**Vaginal**: no epithelial separation Include prominence (e.g. due to wrinkling or folding), penetration (without separation) or contraction (shrinkage) Grades of mesh contraction (*a-e*) from Table 4 is incorporated	**1A**: Abnormal prosthesis or graft finding on clinical examination	**1B**: Symptomatic e.g. unusual discomfort / pain; dyspareunia (either partner); bleeding	**1C**: Infection (suspected or actual)
2	**Vaginal**: smaller ≤ 1cm exposure	**2A**: Asymptomatic	**2B**: Symptomatic	**2C**: Infection **D** = Abscess
3	**Vaginal**: larger >1cm exposure, including extrusion	**3A**: Asymptomatic 1-3A*a* if mesh contraction	**3B**: Symptomatic 1-3B (*b-e*) if mesh contraction	**3C**: Infection **D** = Abscess 1-3C (*b-e*) if mesh contraction
4	**Urinary Tract** compromise or perforation Include prosthesis (graft) perforation, fistula and calculus	**4A**: Small intraoperative defect e.g. bladder perforation	**4B**: Other lower urinary tract complication or urinary retention	**4C**: Ureteric or upper urinary tract complication
5	**Rectum or Bowel** compromise or perforation Include prosthesis (graft) perforation and fistula	**5A**: Small intraoperative defect (rectal or bowel)	**5B**: Rectal injury or compromise	**5C**: Small or Large bowel injury or compromise **D** = Abscess
6	**Skin and / or musculoskeletal** compromise Include discharge pain lump or sinus tract formation	**6A**: Asymptomatic, abnormal finding on clinical examination	**6B**: Symptomatic e.g. discharge, pain or lump	**6C**: Infection e.g. sinus tract formation **D** = Abscess
7	**Patient** compromise Include hematoma or systemic compromise	**7A**: Bleeding complication including haematoma	**7B**: Major degree of resuscitation or intensive care*	**7C**: Mortality * *(additional complication - no site applicable - S0)

TIME (clinically diagnosed)

T1: Intraoperative to 48 hours	**T2**: 48 hours to 2 months	**T3**: 2 months to 12 months	**T4**: over 12 months

SITE

S1: Vaginal: area of suture line	**S2**: Vaginal: away from from area of suture line	**S3**: Trocar passage Exception: Intra-abdominal (S5)	**S4**: other skin or musculoskeletal site	**S5**: Intra-abdominal

N.B.
1. **Multiple complications may occur in the same patient. There may be early and late complications in the same patient. i.e. All complications to be listed. Tables of complications may often be procedure specific.**
2. **The highest final category for any single complication should be used if there is a change within time. (patient 888)**
3. **Urinary tract infections and functional issues (apart from 4B) have not been included.**

IUGA ICS

CODE ☐☐☐-T☐-S☐

Table 3: **An example of a *non – procedure – specific* table of complications directly related to the insertion of Prostheses (Meshes, Implants, Tapes) or Grafts in Urogynecological Surgery using the Category (C), Time (T) and Site (S) system. One might expect these tables to be often procedure – specific.**

Patient Number	Description of complications	Code	Code
000	Retropubic haematoma following a tape procedure (first 24 hours)	7A /T1/ S3	
111	Persistent thigh pain six weeks after an Obturator tape	6B /T2/ S4	
222	Bowel obstruction and 2cm vaginal vault exposure with bleeding 6 months after a mesh sacrocolpopexy	5C /T3/ S5	3B /T3/ S1
333	Mesh fibre exposure (lateral vaginal) in a woman at a 6 week postop review whose partner is describing discomfort with intercourse	1B /T2/ S2	
444	A midline vaginal exposure of mesh (< 1cm) with redness, dyspareunia, discharge 15 months after an anterior colporrhaphy using mesh.	2C*c*/T4/S1	
555	Lateral vaginal extrusion with malodorous discharge and a midline rectovaginal fistula 8 months after a posterior vaginal tape	3C /T3/ S2	5B /T3/ S1
666	Intraoperative obturator vessel injury during a transobturator tape procedure requiring major resuscitation	7B /T1/ S3	
777	Persistent intravesical tape / calculus Formation / haematuria 2 years after a retropubic tape procedure	4B /T4/ S3	
888	Pelvic abscess presenting 8 days after a mesh sacrocolpopexy complicated by an intraoperative bowel defect (final category). Initial code was 6A/T1/S5	5D /T2/S5	
999	Tender prominent mesh contraction noted 9 months after an anterior mesh repair (no symptoms, husband unwell)	1B*b*/T3/S1	
XXX	Persistent postvoid residual of 150mls with recurrent UTI requiring posterior division of suburethral tape 4 months after insertion	4B /T3/S1	

Table 4: **Grades of pain: subclassification of Complication Category**

To specify the presence of pain (by patient only, not the partner) as part or all of the abnormal finding and the grade in terms of the presence and severity of symptoms

a	asymptomatic
b	provoked pain only (during vaginal examination)
c	pain during intercourse
d	pain during physical activities
e	spontaneous pain

IUGA/ICS Joint Terminology and Classification of Complications Related Directly to the Insertion of Prostheses (Meshes, Implants, Tapes) or Grafts In Female Pelvic Floor Surgery

Bernard T Haylen[,#], Robert M Freeman[*,#], Steven E Swift[#], Michel Cosson[$], G Willy Davila[&], Jan Deprest[£], Peter L Dwyer[#], Brigitte Fatton[&], Ervin Kocjancic[@], Joseph Lee[*], Chris Maher[¢], Diaa E Rizk[*], Eckhard Petri[*], Peter K Sand[*], Gabriel N Schaer[*], Ralph Webb[#]*

Standardization and Terminology Committee, International Urogynecological Association (IUGA)* & International Continence Society (ICS)^;Joint IUGA/ICS Working Group on Complications Terminology[$]

Table 1: **Terminology involved in the Classification**

TERMS USED	DEFINITION
PROSTHESIS	A fabricated substitute to assist a damaged body part or to augment or stabilize a hypoplastic structure
A: Mesh	A (prosthetic) network fabric or structure
B: Implant	A surgically inserted or embedded (prosthetic) device
C: Tape (Sling)	A flat strip of synthetic material
GRAFT	Any tissue or organ for transplantation. This term will refer to biological materials inserted
A: Autologous Grafts	From the woman's own tissues e.g. dura mater, rectus sheath or fascia lata
B: Allografts	From post-mortem tissue banks
C: Xenografts	From other species e.g. modified porcine dermis, porcine small intestine, bovine pericardium
TROCAR	Narrow prosthetic / graft insertion needle / device
COMPLICATION	A morbid process or event that occurs during the course of a surgery that is not an essential part of that surgery
CONTRACTION	Shrinkage or reduction in size
PROMINENCE	Parts that protrude beyond the surface (e.g. due to wrinkling or folding with no epithelial separation)
SEPARATION	Physically disconnected (e.g. vaginal epithelium)
EXPOSURE	A condition of displaying, revealing, exhibiting or making accessible e.g. vaginal mesh exposure.
EXTRUSION	Passage gradually out of a body structure or tissue
COMPROMISE	Bring into danger
PERFORATION	Abnormal opening into a hollow organ or viscus
DEHISCENCE	A bursting open or gaping along natural or sutured line

and Site (S) descriptions (a CTS Classification). Table 2 displays the CTS classification.

Seven categories were developed: 3 vaginal complication categories (1-3) and one each for urinary tract (4), rectum/bowel (5) and skin/musculoskeletal complications/compromise (6) and a further category for patient compromise (7). In categories 1-3 and 6, subdivisions indicating a progressive increase in the severity of the complication were: (A) Asymptomatic, (B) Symptomatic, (C) Infection, (D) Abscess. Categories 4, 5 were subdivided depending on the organ involved and the severity of the complication, whilst Category 7 was subdivided on the basis of the severity of the patient compromise.

Time divisions were as follows: T1 - Intraoperative to 48hrs postop - where insertion issues are more likely; T2 - 48hrs to 2 months postop - where healing and infection issues are more likely; T3 - 2-12 months postoperative and T4 - Over 12 months postoperative - where late healing and mesh contraction issues are more likely.

There were five Site divisions: 2 vaginal (S1-S2), trocar related (S3), skin / musculoskeletal (S4) and intra-abdominal (S5)

A 5-stage subclassification is available depending on the presence and severity of pain associated with the complication (Table 4)

RESULTS: The Classification is able to codify (6-digit code for each complication; 7-digit if there is pain) all conceivable insertion complications and healing abnormalities from the use of prostheses and grafts in female pelvic floor surgery. Maintaining this level of sensitivity has restricted attempts at further simplification.

CONCLUSIONS: Consensus has proved to be a successful process for developing this formal Terminology and Classification, which can be applied to (a) Clinical Records; (b) Any database, registry or surgical audit and (c) Academic publications.

SESSION 2
It's All About the Apex

Learning objectives and outcomes

- Update on current understanding of POP anatomy
- Evidence based medicine for apical prolapse surgery
- New techniques for apical prolapse repair

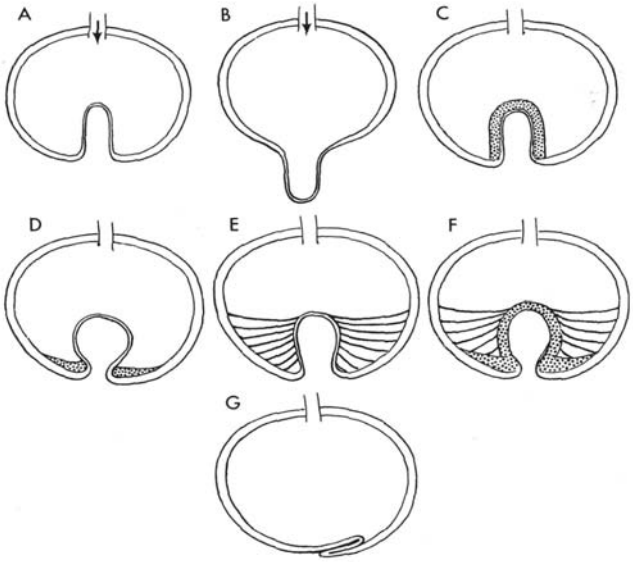
Anatomy of pelvic floor support

Friday 15 October / Session 2 / 1015-1030

Lee J

There is no doubt female pelvic anatomy can be a conceptual challenge. To understand the function of the pelvis & pelvic floor, one must understand the basic anatomy and then the dynamic nature of the structures that allow for urinary and bowel continence in a variety of circumstances. An understanding of normal anatomy and function also provides the clinician with a framework for understanding the pathophysiology of pelvic organ prolapse.

A detailed description of female pelvic floor anatomy can usually be found in most (uro)gynaecology textbooks, often with an emphasis on key surgical landmarks. The pelvic organs rely on their attachments to the pubic bones, muscles, and connective tissue for support, with control provided through connections to the peripheral and central nervous systems. Hence some key features of pelvic anatomy includes the ischial spine; sacrospinous ligaments; components of levator ani muscle; pelvic fasciae; anatomical relationship of various segment of vagina within the muscular support to adjacent bladder, rectum at rest and on valsalva; axis of vagina on standing position and anatomical relationships of ureter, pelvic vessels and nerves. Victor Bonney's 1914 treatise on the sustentacular apparatus of female genital canal nicely illustrated that vaginal support is a combination of



constriction, suspension, and structural geometry. Support of the vagina is described by Prof Delancey, generally divided into 3 levels, with level 1 being suspension, level 2 being (lateral) attachments, and level 3 being anchorage to the perineal body.

Various authors have emphasised the importance of apical support, in overall pelvic floor reconstruction, a sentiment also echoed by the ICI prolapse committee. Operations that do not provide adequate apical support might be doomed to failure. A recent MRI study suggested that upper vagina lies above and behind superior suspension points of most anterior vaginal wall mesh kits, raising doubt it might not provide for adequate apical support.

The advent of 3D/4D pelvic floor USS (together with MRI) has certainly brought fresh insight into pathophysiology concerning pelvic organ support. The (re)discovery of levator ani muscle trauma, generally from childbirth, has led to increased understanding towards mechanisms of surgical failure. Presence of levator trauma has been shown to confer increased odds of apical/anterior vaginal prolapse.

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AUTHOR AFFILIATION: Joseph Lee, FRANZCOG Urogynaecology Fellow Monash Medical Centre, Moorabin, Victoria, Austalia.

Anterior uterosacral suspension

Midline uterosacral plication anterior colporrhaphy combo (muspacc): preliminary surgical report##

Friday 15 October / Session 2 / 1050 - 1110

Haylen BT, Yang V, Vu D, Tse K

OBJECTIVE: To demonstrate that the intermediate section of the uterosacral ligament (USL) can be used for vaginal vault suspension at anterior colporrhaphy to provide thus both level 1 and level 2 support.

BACKGROUND: It has been shown that about half of anterior vaginal wall descent can be explained by the degree of apical descent present[1]. Failure to address the apical defect at anterior colporrhaphy may contribute to the high rate of suboptimal outcomes. Fresh cadaver studies and live surgical experience have demonstrated to us that the intermediate section of the USL is conveniently, safely and universally accessible at the time of anterior colporrhaphy, be it with prior or concomitant hysterectomy or with uterine preservation. The key to seeing it in either circumstance is to put it under tension when the fibromuscular tissues contained within this endopelvic fascial structure appear to coalesce and the full strength and constancy of the ligament is witnessed. In the midline, with bladder retracted, the strong intermediate segment of the USL is readily identified by an initial shallow horizontal needle passage in the dorso-lateral aspect of the exposed vaginal vault. This section of the USL is more than 2cm from the ureter.

We wish to demonstrate that the intermediate section of the USL can be used in a midline vaginal vault suspensory role at anterior colporrhaphy to provide thus both level 1 and level 2 support[2].

METHODS: A pilot study involved 41 patients, all with grade 2 or more anterior vaginal wall prolapse (cystocoele). Women were assessed by Baden-Walker site-specific vaginal examination preoperatively, intraoperatively, immediately postoperatively and at the clinical postoperative visit. On the latter three occasions, an observer other than the surgeon was present to confirm the staging and two specific measurements: (i) vaginal vault to distal end of anterior colporrhaphy (anterior); (ii) vaginal vault to posterior introitus (posterior). Intraoperatively, these measurements were performed prior to the midline anterior vaginal wall incision (following closure of the vaginal vault in cases of concomitant hysterectomy). Immediately postoperatively, these measurements were taken at the completion of all repairs.

The Video demonstrates the intermediate section of the USL at fresh cadaver and live surgical studies as well as the surgical technique for the MUSPACC procedure.

RESULTS: The prolapse repair was a primary procedure in 30 (73%) cases whilst recurrent prolapse surgery was being performed in 11 (27%) cases. Concomitant surgeries will be presented. Mean duration of the MUSPACC procedure (excluding the duration of concomitant surgeries) was 23 minutes (range 17-30 minutes). Mean blood loss was under 50mls in 35 (85%) cases and never over 100mls. A mean 4 USL sutures were inserted, 2 of which in each case incorporated vaginal vault with a permanent Ethibond (suspensory) suture. There were a mean 4 anterior colporrhaphy fascial plication sutures. There were no ureteric complications (cystoscopy universally performed) with only one incident of one small cystotomy managed with a two layer oversew.

Posterior vaginal length was reduced by a mean 6% (end of operation) reducing to 0% when measured at the postop clinical

visit (mean 6.6 weeks; range 5 to 9 weeks). Anterior vaginal length was reduced by a mean 7% (end of operation) though only 2% when measured at the postop clinical visit.

There was no recurrent vault descent though 3 (7%) women had early (up to Grade 1) asymptomatic recurrent cystocoele. Two of these women had preop Grade 3 cystocoele whilst the other woman had a history of 5 previous anterior colporrhaphies including mesh and mesh removal.

CONCLUSIONS: The study has confirmed that the MUSPACC procedure is safe with consistent access to the intermediate section of the USL. A MUSPACC procedure can be performed comfortably in a median 23 minutes through a single midline anterior vaginal wall incision. Blood loss is generally minimal to small. Dissection is relatively limited with the ureters not deemed to be at risk. Short term anatomical results are very promising with no apparent vaginal shortening. Overall, we believe that the MUSPACC procedure can be readily learnt by a competent vaginal surgeon, once the additional anatomical understanding is acquired.

CRITERIA	PRE-OP	START-OP	END-OP	POST-OP
	Mean Range n=41	Mean Range n=41	Mean Range n=41	Mean Range n=41
Anterior Vaginal Prolapse Staging	2.0 (1-3)	2.2 (2-3)	0.0	0.1 (0-1)
Apical Vaginal Prolapse Staging	1.4 (0-3)	1.5 (1-3)	0.0	0.0
AnteriorVaginal Measurement (cm)		7.0 (4.5-10.5)	6.5 (4.5-9.0)	6.9 (5.0-9.0)
Posterior Vaginal Measurement (cm)		8.0 (6.5-11.5)	7.5 (6.0-9.0)	8.0 (6.0-10.0)

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The 'Uphold' mesh suspension

Friday 15 October / Session 2 / 1110-1130

Goldberg RP

OBJECTIVES: Introduce the 'Uphold' vaginal repair system for the repair of apical and anterior prolapse. Discuss the origins of this 'minimal mesh' approach, and review outcomes to date for prolapse cases involving uterine preservation and post-hysterectomy repair.

METHODS: Surgical video will be reviewed, including discussion of the 'anterior approach' to the sacrospinous ligament and apical anatomy. The operation has been evaluated for all 164 consecutive cases (mean age 62) performed at two major urogynecology referral centers, representing the entire Uphold 'learning curve' for these two institutions. All subjects undergo standardized POPQ evaluation and QOL questionnaires.

RESULTS: The rate of mesh exposure, to date, is 1.4%; all cases were resolved with simple trimming in the office setting. To date, one subject has experienced clinically symptomatic apical failure requiring hysterectomy; she was found to have an enlarged fibroid uterus. Objective apical and anterior outcomes, as measured by POPQ staging, have been highly favorable: 6.1% had C≥-1 postoperatively, 3.8% had C≥0. 6.1% had Aa or Ba≥-1, and 0.8% had Aa or Ba≥0. Rates of anterior success (Aa and Ba ≤-1) range from 90-95% with a trend indicating superior objective outcomes among women retaining their uterus:

Uterus in Situ:

- 4% had C≥-1, and 2% had C≥0
- 5% had Aa or Ba≥-1 and 0% had Aa or Ba≥0.

Post Hysterectomy:

- 12.5% had C≥-1, and 9.4% had C≥0
- 9.4% had Aa or Ba≥-1, and 3.1% had Aa or Ba≥0.

CONCLUSIONS: The Uphold technique utilizes 75% less mesh surface area than its 'total vaginal mesh' predecessors, and appears to provide encouraging anterior and apical outcomes, via a quick operative technique with a low risk of mesh exposure. The surgical technique will be discussed during the video presentation.

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AUTHOR AFFILIATION: Roger P. Goldberg, MD MPH. Director of Urogynecology Research, University of Chicago Pritzker School of Medicine, NorthShore HealthSystem, Evanston IL USA

Robotic sacral colpopexy

Friday 15 October / Session 2 / 1130-1150

Clark M

Introduced in 1999 indications robotic surgery has rapidly expanded to include prolapse repair. It only a few short years for robotic prostatectomy to be adapted as the dominate procedure for prostate cancer. This surgical revolution occurred in the absence of outcome data showing clear benefit outside of the patient's recovery experience. Colpopexy appears to be following the same adoption curve as prostatectomy.

When the route of access for a procedure does not alter the standard technique one can rely on the published experience for outcomes expectation. With the robotic assist the standard

colpopexy technique can be used and the gold standard outcomes can be expected with minimal patient post op recovery.

Informed consent for pelvic organ prolapse surgery

Session 3Cystocoele: Have mesh kits made laparoscopic surgery redundant?

Learning objectives and outcomes

- Evidence based medicine for anterior compartment surgery
- New mesh kits on the market, their advantages and disadvantages in the anterior compartment prolapse repair
- Update on laparoscopic paravaginal repair

AUTHOR AFFILIATION: Matthew H. Clark, M.D. The Clark Center for Urogynecology Newport Beach CA, USA.

SESSION 3
Cystocoele: Have Mesh Kits Made Laparoscopic Surgery Redundant?

Learning objectives and outcomes

- Evidence based medicine for anterior compartment surgery
- New mesh kits on the market, their advantages and disadvantages in the anterior compartment prolapse repair
- Update on laparoscopic paravaginal repair

Literature review of surgery for anterior compartment prolapse

Friday 15 October / Session 3 / 1315 - 1330

Higgs P

Anterior vaginal repair using native tissue, while a low morbidity technique, has a high recurrence rate of 30-50%. To this end, various techniques have been used in an attempt to improve the success rate. To date, there are 2 RCT comparing native tissue repair to repair with absorbable mesh overlay and 6 RCT comparing native tissue repair to repair with non absorbable mesh overlay. Objective cure rates at 12months have been improved by the use of synthetic mesh overlay (success rates of 81-93% cf 55-72% with native tissue), there has not been shown to be a significant improvement in outcomes in the areas of function, quality of life or decrease in reoperation rates. Dyspareunia rates are similar with either technique. Only one RCT involved the use of a mesh kit (Perigee AMS) while the other RCTs used mesh overlay techniques.[1]

The use of mesh kits in vaginal surgery increases morbidity in terms of blood loss when the transobturator route is used and the rate of mesh erosion/exposure is approximately 10% with the use of non absorbable mesh.[1]

While there is good evidence to support the use of laparoscopic sacral colpopexy and colposuspension, the evidence regarding other laparoscopic pelvic floor repair surgery such as laparoscopic paravaginal repair is 'sparse' and there are no RCTs comparing laparoscopic or abdominal paravaginal repair to anterior vaginal repair.[2] The largest case series on laparoscopic paravaginal repair showed a 76% success rate at an average of 14 months follow up and 18% of women undergoing further surgery in the form of anterior repair with graft augmentation.[3]

The literature to date shows objective improvement in outcome with the use of synthetic mesh however the use of mesh kits is still controversial especially in view of the FDA warnings regarding use of these kits. Further data regarding laparoscopic anterior compartment repair is needed especially in the form of a RCT.

1 Maher C, Feiner B, Baessler K, Glazener CMA. Surgical management of pelvic organ prolapse in women. Cochrane Database of Systematic Reviews 2010, Issue 4. Art. No.: CD004014. DOI: 10.1002/14651858.CD004014.pub4

2 Diwadkar GB, Chen CC, Paraiso MF. An update on the laparoscopic approach to urogynecology and pelvic reconstructive procedures. Curr Opin Obstet Gynecol 2008;20(5):496-500.

3 Behnia-Willison F, Seman EI, Cook JR, O'Shea RT, Keirse MJ. Laparoscopic paravaginal repair of anterior compartment prolapse. J Minim Invasive Gynecol 2007;14(4): 475-80.

Anterior elevate: is 'front to back' better?

Friday 15 October / Session 3 / 1350-1410

Clark M

Our current understanding of normal and abnormal vaginal wall anatomy has lead to the correlation that anterior vaginal prolapse is not isolated but is often associated with apical descent. Prior support systems that used the trans-obturator space did not provide sufficient apical support. The use of mesh arms to the sacrospinous ligament via the anterior space has provided an opportunity to gain anterior wall and apical support in a combined manor.

The anterior elevate has self fixating anchors that provide four corner support through a single vaginal incision. These low profile anchors provide safe and easily reproducible support with minimal tissue trauma. Bladder neck support is placed first and then using an adjustable apical anchor, the apical suspension is obtained. Multi-center case series are ongoing and support this technique as a safe and efficient prolapse repair technique.

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Prosima – 'Pure and simple'

Friday 15 October / Session 3 / 1410-1430

Carey M

The GYNECARE PROSIMA™ Pelvic Floor Repair System (Ethicon, Somerville, NJ) was developed to surgically treat pelvic organ prolapse. The kit comes with similarly pre-shaped mesh implants, a vaginal support device (VSD), a balloon, an anterior inserter, a posterior inserter and a 60 ml syringe. PROSIMA is a trocar-less surgical system that employs a vaginal approach to prolapse surgery using monofilament polypropylene mesh implants that are held in position for 3 to 4 weeks by a VSD. A balloon is attached to the VSD and is inflated with up to 90ml

of air. The balloon is used instead of the traditional vaginal pack and is deflated and removed 24 hours after surgery.

When performing an anterior vaginal repair using PROSIMA the vesicovaginal plane is exposed by dissecting the vaginal epithelium off the underlying pre-vesical tissue. Anterior channels for the mesh implant straps are made on each side by creating a space immediately anterior and superior to the ischial spine and superficial to the parietal fascia of the obturator internus muscle. The anterior mesh implant is introduced into the vesicovaginal plane. The mesh straps are placed into the anterior channels with the aid of the anterior inserter instrument. The vaginal epithelium is closed in two layers. The deeper fibromuscular layer is closed using a continuous non-interlocking stitch. The superficial squamous epithelial layer is closed by a non-interlocking continuous everting mattress stitch. Non-interlocking stitches are used to avoid de-vascularizing the vaginal epithelium along the incision line. The two-layered closure, including the everting mattress stitch, is used to obtain a relatively thick suture line at the site of the vaginal incision. This closure technique is used to reduce mesh exposure.

When performing an posterior vaginal repair using PROSIMA the the rectovaginal plane is exposed by dissecting the vaginal epithelium off the underlying pre-rectal tissue. Posterior channels for the mesh implant straps are created on each side by dissection through the rectal pillars to each ischial spine and sacrospinous ligament. The posterior mesh implant is introduced into the rectcovaginal plane. The mesh straps are placed into the posterior channels with the aid of the posterior inserter instrument so that the mesh implant straps abut the sacrospinous ligaments. The epithelium is closed in the same fashion as the anterior vaginal epithelium.

The VSD can be modified into three sizes: large, medium and small. At the completion of surgery an appropriately sized VSD with attached balloon is placed in the vagina and sutured in place to prevent dislodgement. The balloon is inflated with air using the 60 ml syringe. After deflation, the balloon is removed at 24 hours. The VSD is removed 3 to 4 weeks after surgery.

Clinical Study: Women from 11 sites in Europe (5), United States (5) and Australia (1) with symptomatic prolapse (POP-Q Stage II-III) were invited to participate a prospective, single-arm study (Am J Obstet Gyneco;2010 in press). Participants completed a medical history, POP-Q exam, QOL and sexual function surveys and a global impression scale (GIS) at baseline, 6 months and 1 year post-operatively. The primary outcome was anatomic success at 1 year. 136 women were included with a mean age of 64.3 years (SD 10.5), BMI 28.4 (5.0). 53.7% were Stage II and 46.3% Stage III. 31 (22.8%) had anterior mesh, 33 (24.3%) posterior and 72 (52.9%) combined repairs. 16.9% had concurrent hysterectomies and 33.1% had mid-urethral slings. At 1 year, 113 women (88.3%), the leading edge of the vaginal wall was at 1cm or more above the hymen. Based on GIS, 73.3% patients reported they were "much better" and 15.3% "a little better" at 1 year. All measures of QOL and sexual function improved significantly from baseline (see table). Analysis of safety included 12 additional "run in" cases (n=148). Cystotomy occurred with dissection in 2 cases; there were no rectal injuries. At baseline, dyspareunia was reported in 13 / 62 (21.0%) sexually active patients; at 1 year, this was reduced to 7.7% (2 persistent, 3 de novo). 3 patients (2.2%) underwent re-intervention for prolapse.

PROSIMA is a novel and innovative approach to prolapse surgery. This vaginal approach uses polypropylene implants via a trocarless system to improve durability, a VSD to support the positioning of the mesh and prevent vaginal wall adhesions during healing, and a balloon that replaces the traditonal vaginal pack. The two-layered technique used to close the vaginal epithelium is aimed at reducing the risk of mesh expoure along the suture lines.

*Disclosure: M Carey is the inventor of PROSIMA and receives royalties from PROSIMA sales.

AUTHOR AFFILIATION: Dr Marcus Carey; Royal Women's Hospital Melbourne, Victoria, Australia

Is laparoscopic paravaginal repair outmoded?

Friday 15 October / Session 3 / 1450-1510

O'Shea R

Anterior colporraphy has been the standard approach to anterior compartment prolapse for most of the last century. The evidence to support the efficacy of this procedure is very limited. Most of the published data on anterior colporraphy relates to stress incontinence and not actually to efficacy and prolapse repair. Paravaginal repair was initially described by White in 1909 and subsequently popularised by the abdominal route by Richardson in 1976 and 1981. The concept of this approach relates to suspension of the vesicovaginal fascia to the arcus tendineus. Although it was elegantly described by Richardson by the abdominal approach in more recent times the approach to this operation has either been vaginal or laparoscopic. The careful analysis of the literature would suggest that the uptake of the procedure has been extremely low. Most of the data on the vaginal approach would indicate high efficacy over the short term. However, there is essentially no long term data.

The advent of laparoscopic surgery of course has opened up the pelvis in a more dramatic way. The paravaginal defects can be elegantly demonstrated by the laparoscopic approach. However, there is minimal literature indicating efficacy of the procedure laparoscopically. However, the small amount of data available would suggest that it is reasonably successful when compared to other prolapse procedures.

Although the laparoscopic approach appears to be successful, its popularity may well be hindered by the complexity of the procedure. To perform the dissection and indeed the suturing requires advance laparoscopic skills. It would seem at this stage that most gynaecologists would prefer to perform this surgery vaginally rather than laparoscopically. It is however worth noting that the laparoscopic repair of the anterior compartment can be combined with repair of other areas such as the vault and the posterior compartment quite easily. The advent of robotic surgery may well allow gynaecologist to rapidly upgrade their skills which may lead to a renaissance of these more difficult laparoscopic repairs.

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SESSION 4
Mesh or Mess?

Learning objectives and outcomes

- Pointers regarding informed consent in POP surgery
- How can we better keep track of the 'prosthesis' we use in POP surgery
- Techniques to minimize complication of mesh use in POP surgery and how to manage mesh complication

Informed consent for pelvic organ prolapse surgery

Friday 15 October / Session 4 / 1600-1620

McEvoy M, Forbes A

Whilst adequacy of consent is a legal and not a medical judgement, gynaecological surgeons must improve their prolapse surgery consent practice to adequately inform the community at large as well as protect our profession.

Failure to warn is a common reason for medico-legal claims in Australia and is the main motivator for improving consent practice for women having prolapse procedures (RANZCOG/UMP data 2004).It is also responsible for a considerable degree of angst for the RANZCOG (Weaver 2007 statement on mesh).

An increasingly litigious community, higher consent standards from bodies such as RACOG, introduction of marketable new mesh materials, and a lack of adequate data collection on new procedures have all placed gynaecologists under increasing surveillance by patients, plaintiff lawyers, medical insurers, hospital authorities and expert witnesses.

RACOG standards require documentation of the name and nature of the procedure, the common and uncommon benefits, common and uncommon risks of the procedure, any particular additional risks that the patient may have, eg obesity, endometriosis, previous surgery, anaesthetic risk, additional procedures that may or may not be performed, consequences of no treatment and financial consent. Few of our standard hospital consent forms would satisfy these criteria.

The onset of new procedures, such as mesh implants for prolapse, has resulted in a high incidence (5-10%) of symptomatic mesh exposure (Collinet, 2006). Initial optimistic studies in France combined with successful marketing by industry and a reluctance by gynaecologists to keep a mesh registry have resulted in a paucity of realistic results of outcome after mesh repair. This has resulted in a significant number of claims for compensation for dyspareunia both female and male. Follow-up studies were often too short to adequately assess sexual function. If only we had kept appropriate audits, such as a mesh registry, we would have been able to inform our patients of the potential complications much earlier. I will present my own series on mesh for vaginal prolapse repair spanning a mean duration of follow up of 4 years. This makes it the second longest follow up of Prolift in the world after Cosson (2010).

Where there is inadequate documentation of consent in the gynaecologist's notes, a significantly larger settlement and legal cost will be incurred by the medical insurer. On the other hand clear documentation of consent more often results in early settlement of cases, lower or absent pay-outs, lower costs to medical insurers and less emotional stress to the individual gynaecologist(MIGA 2007)

Clearly patients need to be advised of the possibility of narrowing of the vagina, painful intercourse and male dyspareunia after any prolapse repair.

I will present my own prolapse consent from which I have developed with the aid of surveying all my post-operative prolapse repair patients.

This brings up the Pandora's Box of standards of consent, consent forms and the issue of procedure specific consent forms. I believe that AGES should canvass its members and if there is enough interest develop similar consent forms for all procedures

The author has no conflicts of interest with Prolift or Johnson and Johnson. This research is self funded .

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3 Cosson,M et al Transvaginal Mesh Technique for treatment of Pelvic Organ Prolapse : 5 years of prospective follow up, IUGA2010 Abstracts , IUGA journal ,August 2010

4 Obstetrics and Gynaecology Magazine, College Statements Update by Dr Ted Weaver, The Use of Mesh in Gynaecological Surgery. Pg 86, Volume 9 No 3 2007

5 RANZCOG/UMP Obstetric and Gynaecologic claims review March 2004 racog website www.laparoscopyhospital.com

AUTHOR AFFILIATION: Dr Michael McEvoy, Dr Alan Forbes; Women's and Children's Hospital North Adelaide, SA, Australia.

Mesh Registry - who, how, costs, examples from international and national joint register

Mesh Registry - Good Idea or a Pandora's Box ?

Friday 15 October / Session 5 / 1630-1650

Rosamilia A

The recent Australian Commission on Safety and Quality in Healthcare met in June 2010 and there was discussion regarding medical device safety.The Medical director of TGA reported that there are currently 33,000 medical devices in the Australian market. Are devices same as medicines ? Yes and No. For example, the patent for medicines is 12 to 17 years whereas for devices the lifecycle different. The average life of a device is 18 months. There is the concept of incremental innovation. Also the reality is that Australia is 1-2% of global market. There is a need to balance the need for research and latest access.

The proposals from the Health Technology Assessment Review in late 2009 were presented and a big priority was to improve process efficiency, decrease regulation while keeping access. The government have accepted all recommendations except 15-18 which are costly;15 is the establishment of registers of high risk implantables!

Information is available on website www.health.gov.au.htareview.

The principles of establishing a clinical quality registry will be discussed. Examples of registries in Australia will be presented in addition to the British Society of Urogynaecology database, the Austrian TVT and mesh registry.

Abstracts Saturday 16 October

SESSION 5
Urinary Continence

Learning objectives and outcomes

- Current understanding and update of the literature regarding the use of mid-urethral slings
- Updates on medical therapy for urinary incontinence
- New slings on the market for the treatment of UI, their advantages and disadvantages
- Update on Botulinum toxin and sacral neuromodulation for urinary incontinence
- Discussion of complicated cases and opinions from the experts regarding management of these cases

Medical therapies for urinary incontinence

Saturday 16 October / Session 5 / 0820-0840

Krause H

The diagnosis of cause of urinary incontinence requires an accurate history and examination, along with relevant investigations. Conservative therapies including lifestyle changes, weight loss, fluid modification, and pelvic floor rehabilitation, should be included in initial management.

While surgical treatments for urodynamic stress incontinence (USI) are considered a standard option, some medical therapies are being explored as a non-surgical approach. Duloxetine, a balanced serotonin and noradrenaline reuptake inhibitor (SNRI), has been studied and used to enhance contraction of the rhabdosphincter. While efficacy has been demonstrated in some studies, its side effect profile has limited its use.

The recent availability of newer medical treatments for detrusor overactivity in Australia including transdermal oxybutynin, solifenacin and darifenacin, has improved treatment outcomes with good efficacy and reduced discontinuation rates due to side-effects. Mixed urinary incontinence is common, and there is evidence to suggest that detrusor overactivity should be stabilised prior to surgical management for USI, to optimise results.

Medical therapy currently has a very limited role in treatment of voiding dysfunction.

RECOMMENDED READING:

Saks EK, Arya LA. Pharmacologic management of urinary incontinence, voiding dysfunction, and overactive bladder. Obstet Gynecol Clin N Am 2009; 36: 493-507.

Basu M, Duckett JRA. Update on duloxetine for the management of stress urinary incontinence. Clinical Interventions in Aging 2009; 4:25-30.

Srikrishna S, Robinson D, Cardozo L, Vella M. Management of overactive bladder syndrome. Postgrad Med J 2007; 83: 481-486.

Miniarc - video and results

Saturday 16 October / Session 5 / 0840-0900

Rane A

MINIARC is the next generation of mid urethral slings using soft tissue anchor technology. Unlike its predecessors these ' minislings' pose different challenges with regards to insertion and tentioning techniques. 2 studies done in the initial period showed suboptimal results, however recent multicenter studies with 24 month data show results equivalent to most mid urethral slings.

What is different about these slings? How do we learn about the differences to get better results? will the ' low pressure urethra' be addressed by these slings? what advantages, if any, do these slings offer?

These are the points of discussion in this talk where we will show our local results and research regarding understanding the mechanics of mini slings.

AUTHOR AFFILIATION: Professor Ajay Rane MBBS MSc MD FRCOG FRCS FRANZCOG CU FICOG(Hon) Consultant Urogynaecologist Chair and Head, Dept. of Ob-Gyn, James Cook University, Townsville, Queensland, Australia

Botulinum toxin – evidence and results

Saturday 16 October / Session 5 / 0920-0940

King J

Since original reports of its use in neurogenic detrusor overactivity approximately ten years ago, there has been increasing enthusiasm for botulinum toxin injections in the management of any refractory overactive bladder symptoms. In 2009 a European consensus report declared there was sufficient evidence to give a grade A recommendation for the use of botulinum toxin A in both neurogenic and idiopathic detrusor overactivity.

This presentation aims to review the extent of such evidence – the efficacy and the safety, the complications and the many uncertainties over botulinum toxin use in the bladder. Have we accepted a lesser standard of proof? Or is BTX-A an exciting breakthrough in the management of this difficult group of patients?

RECOMMENDED READING:

- Gomez CS, Kanagarajah P, Gousse A. The Use of Botulinum Toxin A in Idiopathic Overactive Bladder Syndrome. Curr Urol Rep (2010) 11:353-359
- Anger J, Weinberg A, Suttorp M, Litwin M, Shekelle P. Outcomes of Intravesical Botulinum Toxin for Idiopathic Overactive Bladder Symptoms: A Systemic Review of the Literature. J Urol (2010) Jun;183(6):2258-64
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Sacral nerve neuromodulation for refractory lower urinary tract symptoms

Saturday 16 October / Session 5 / 0940-1000

Carey M

Sacral nerve stimulation (SNS) has become established therapy for the management of severe and refractory over active bladder syndromes (urge incontinence, urgency-frequency syndrome) and idiopathic urinary retention. More recently, SNS has been used for interstitial cystitis and neuropathic faecal incontinence. The precise mechanism of action of SNS remains unknown. The implanted sacral nerve stimulator device comprises a pulse generator, extension cable and lead with quadripolar electrodes. Recent lead modifications have seen a tread towards a two staged implant procedure using small skin incisions. These recent modifications allow for surgery to be completed under local anaesthesia. This new minimal access surgical approach to SNS implantation is likely to result in more accurate patient screening and reduced wound morbidity.

ANATOMICAL CONSIDERATIONS: The third sacral nerve root is the target for SNS. This sacral nerve root has a width of 3 to 4 mm and exits from the third sacral foramen. Occasionally, needle insertion into S3 can result in vascular and nerve damage. This damage can be minimized by employing a lateral entry into foramen and by ensuring the needle enters the foramen at an acute angle rather than vertically. The sacral nerves provide many branches to the pelvis and lower limbs. The pudendal nerve, which is the main sensory and motor nerve to the pelvic floor, receives contributions from S2, S3 and S4. Stimulation of S3 results in both a motor and sensory responses. The motor response includes contraction of the levator ani muscle complex ('bellows response') and flexion of the toes via stimulation of the tibial branch of the sciatic nerve. The sensory response includes a sensation of 'tingling' in the vagina, rectum and labia majora. In clinical practice, accurate placement of electrodes into the third sacral foramen is confirmed by the appropriate motor and sensory responses and by fluoroscopy (if available).

The most easily identified surface anatomy landmark of the S3 foramen is the greater sciatic notch. The S3 foramen is located medial to the upper edge of the greater sciatic notch and a middle finger's breadth from the spine of the sacrum (midline).

MECHANISM OF ACTION OF SNS: The precise mechanism of action of SNS is unclear and a number of theories have been advanced. Sacral nerve neuromodulation stimulates the afferent somatic nerve fibres responsible for the modulation of sensory processing and the micturition reflex in the spinal cord. It has been postulated that SNS depends on the electrical stimulation of afferent nerve fibres in the spinal roots that, in turn, modulate voiding and continence reflex pathways in the central nervous system.

SNS may cause suppression of bladder over activity by the neuromodulation of several reflex mechanisms. Firstly, direct inhibition of bladder preglangionic neurons suppresses unstable bladder contractions. Secondly, inhibition of unstable bladder contractions by suppression of interneuronal transmission in the afferent limb of the micturition reflex. SNS does not interfere with voluntary voiding mediated by descending excitatory efferent pathways from the brain to the sacral parasympathetic preganglionic neurons.

Efficient bladder emptying relies on the ability of brain pathways to turn off urethral sphincter guarding reflexes. SNS may act by switching off excitatory outflow to the urethral sphincter, thereby promoting bladder emptying in patients with urinary retention.

CLINICAL INDICATIONS FOR SNS: In Australia, SNS has approval for urge incontinence, urge-frequency syndrome and voiding difficulty. The cost of SNS is around $17,000 and surgical revisions are required in about 30% of cases. SNS is generally reserved for marked lower urinary tract dysfunction remaining refractory to conservative therapies.

Thorough clinical assessment, including neurological evaluation, is mandatory prior to considering SNS. Appropriate investigations are also required prior to SNS to establish a precise diagnosis and exclude neurological disorders (e.g. multiple sclerosis). Often urodynamic studies, cystoscopy and various imaging techniques (MRI; MRI scanning is contraindicated once SNS has been implanted) are performed prior to SNS. Psychiatric assessment is appropriate in some cases.

SNS should be considered as an alternative to major urology procedures such as augmentation cystoplasty and urinary diversion.

RESULTS OF SNS: Recent studies by Schmidt et al (J Urol 1999), Hassouna et al (J Urol 2000) and Jonus et al (J Urol2001) reported the results of SNS for refractory lower urinary tract disorders. These studies demonstrated SNS to be effective, safe and reversible therapy for the treatment urge incontinence, urgency-frequency syndrome and voiding difficulty.

Surgical revision is reported in 6% to 50% of cases. The largest RCT evaluating SNS is the MDT-103 study. This study involved 633 patients: 210 with urge incontinence; 229 with urgency-frequency syndrome; and 194 with urinary retention. Repositioning of the electrode or extension lead was required in 24.4% of patients. A further 21.1% of patients required repositioning or replacement of the implanted pulse generator.

Recent lead modifications and the trend towards a two staged implantation procedure with a minimal assess surgical approach are likely to improve the outcomes for patients undergoing SNS.

CONCLUSION: SNS is effective therapy for refractory over active bladder syndromes and idiopathic urinary retention. Emerging indications include interstitial cystitis, perineal pain syndromes, and neuropathic faecal incontinence. Currently, the high cost of SNS and its restriction to refractory lower urinary tract disorders limits the use of SNS to specialist tertiary centers.

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SESSION 6
Complicated Cases

Learning objectives and outcomes

- Update and current beat practice in the diagnosis and management o genital fistulae
- Exploring the different approaches to managing complicated cases, their advantages and disadvantages

Genital fistulae

Saturday 16 October / Session 6 / 1105-1130

Goh J

LOWER URINARY TRACT INJURIES: Lower urinary tract injuries occur in about 1-2% of major gynaecological surgeries. For hysterectomies and surgery for pelvic organ prolapse and incontinence, the rates are between 1-13 injuries per 1000 surgeries.

In a prospective study by Vakili (2005), when a hysterectomy is performed in conjunction with prolapse surgery, there is a 6-fold risk of ureteral injury. When a hysterectomy is performed with continence surgery, there is a 4-fold risk of bladder injury. Laparoscopic assisted hysterectomy has a higher rate of bladder injury compared to abdominal or vaginal methods.

Bladder injuries are the most common lower urinary tract injuries during gynaecological surgery. Most injuries resulting in fistulae are unrecognised.

The bladder may be injured when dissecting the bladder off the cervix, opening the parietal peritoneum, closure of the vault/ vaginal cuff, vaginal repair and continence surgery. Urethral injuries may occur at time of vaginal repair, management of urethral diverticulum, continent procedures and instrumentation of the urethra/bladder.

Is universal cystoscopy indicated? As Patel & Bhatia (2009) states, if universal cystoscopy is adopted to reduce delayed diagnosis of urinary tract injury, it assumes that the surgeon is competent in performing and interpreting the cystoscopy, that the procedure has 100% sensitivity and specificity and there is no associated increased morbidity with cystoscopy.

GENITO-URINARY FISTULAE: Obstetric fistulae is the most common fistulae world-wide. The most common genito-urinary fistula follow gynaecological surgery is due to bladder injury. It is thought that the ratio of bladder to ureteric injury is 5:1. When a woman leaks urine uncontrollably following pelvic surgery, assessment for a fistula is required. Following extensive pelvic surgery, including a hysterectomy, a ureteric fistula requires exclusion. Various investigations are available. For fistulae in the bladder/urethra, an examination may be all that is required. If the fistula is large, the defect is palpated during a vaginal examination. A dye test may be performed with instillation of dilute dye into the bladder via a catheter. Imaging is usually required to diagnose a ureteric fistula. A urethrocystocopy may also be used as a diagnostic tool.

If a vesico- or urethral-vaginal fistula occurs in the first few days following surgery, treatment options include immediate closure or prolonged catheterisation. Spontaneous closure of the fistula may occur with prolonged catheterisation. If the urinary leakage occurs over a week following surgery, it may be due to a devascularisation injury.

Timing of surgical management of the bladder or urethral fistula would depend on the nature of the injury, previous history, time of diagnosis from surgery, the condition of tissue around the fistula (eg infected, inflamed).

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Vaginal and vesical approaches to manage complicated cases

Saturday 16 October / Session 6 / 1150-1210

Rosamilia A

Short case discussion, video and still image presentation of some surgical scenarios including:

- Mid urethral sling exposure
- TVT sling division
- Vaginal apical bands
- Urethrovaginal fistula
- Transvesical removal of calcified suture
- Vesicovaginal fistula repair with Martius graft

SESSION 7
Should I have the Chop to Stop the Pop?

Learning objectives and outcomes

- Current understanding of the relationship between mode of delivery and pelvic floor dysfunction
- Pointers to counseling obstetric patients regarding the risks of pelvic floor dysfunction following vaginal delivery and the role of caesarean section in POP

'Nature or Nurture?' Insights into incontinence and pelvic dysfunction from the University of Chicago Twin Studies

Saturday 16 October / Session 7 / 1315-1340

Goldberg RP

OBJECTIVES: Review the epidemiology of incontinence and pelvic dysfunction, and the value of twin research in helping to understand the key risk factors underlying these women's health disorders.

METHODS: Twins offer a unique study population for genetic epidemiology because MZ twins are genetically identical whereas DZ twins share half of their segregating genes. Our ongoing population-based twin study has enrolled 751 twin sister pairs (n=1502) attended an annual gathering of twins held at the Twins Days Festival in Twinsburg, Ohio from 2003-2010. An extensive self-report survey including demographic, obstetric, incontinence and pelvic floor information, as well as several validated questionnaires, have been administered.

The "classical" twin model provides a valuable tool for determining whether disease states are due to hereditary or environmental factors by comparing the concordance rates of SUI between monozygotic (MZ) and dizygotic (DZ) twins. New data from the UC twin studies now quantifies the extent to which genetic and environmental factors influence the development of SUI.

RESULTS: Findings suggest that SUI in pre-menopausal childbearing women is determined environmental factors rather than genetics. Stress incontinence, in other words, is within this female population a product of 'nurture' rather than 'nature'. ACE modeling reveals no significant heritability or genetic component to SUI among women in our cohort. Logistic regression models, analyzing only identical twins, identified mode of delivery (i.e. vaginal versus cesarean) as the major environmental determinant of SUI; the odds ratio for SUI was 2.7, in comparing women who underwent vaginal versus cesarean delivery. In contrast, urge incontinence appears to be determined by total parity with delivery mode playing no discernable role. Furthermore, mode of delivery appears to represent the single most important environmental factor; women with a previous history of vaginal delivery were at a nearly 3-fold higher risk of incontinence when compared to those with previous cesarean delivery.

CONCLUSIONS: This 'twin sister' study, conducted at our center over the course of 7 years and involving over 1500 predominantly Caucasian twins, provides a rare opportunity to unravel the role of environmental and genetic risk factors underlying complex traits such as female incontinence, sexual and bowel dysfunction.

These findings should reinforce the need to focus efforts on preventable environmental risk factors leading to incontinence, and specifically, on the potential impact of pelvic floor injury during pregnancy and childbirth. Rather than falsely assuming that SUI is inevitable or genetically predetermined, women and their practitioners should focus on modifiable environmental risk factors which underlie this highly prevalent women's health condition.

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Is Caesarean section protective for pelvic floor disorders?

Saturday 16 October / Session 7 / 1410-1430

Chao F

The pelvic floor consists of a series of muscles and connective tissue that suspends the pelvic organs, maintains the vaginal length and axis and are integral in the sphincter mechanism of the urethra and rectum. De Lancey described the 3 levels of

pelvic floor support, which further details the function of each component of the connective tissue of the pelvic floor.

In pregnancy, pelvic relaxation occurs perhaps due to the increase level of progesterone and relaxin. There is increase mobility of the pelvic joints, increase anterior tilt of the pelvis, decrease pelvic floor resistance and also decrease urethral sphincteric function in preparation for parturition. During parturition, the pelvic floor musculature, connective tissue, nerves and vessels are significantly stretched to accommodate the passage of the fetal presenting part and is susceptible to injury.

Post-partum pelvic floor trauma and injury can certainly lead to pelvic floor dysfunction - urinary incontinence (UI), anal incontinence (AI) and pelvic organ prolapse (POP).

URINARY INCONTINENCE (UI): UI is reported to affect 1 in 3 women who have ever had a baby. In pregnancy, UI is reported to affect between 39% and 64% of women. It is also known to increase with increasing trimester, with stress UI being the most common type of reported UI in pregnancy. Reported risk factors for developing UI in pregnancy include

- Increasing parity
- Increasing age
- Increasing baseline BMI
- Family history of UI
- Smoking
- Coffee intake > 2 daily (1.7X increased risk)

In the post-partum period, reported prevalence of UI is 16% at 6 weeks, 26% at 6 months and 10% at 1 year. Quoted risk factors for persistent UI post-partum include

- UI before or during pregnancy
- UI shortly after delivery
- Greater maternal age and parity
- Greater maternal weight prior to 1st pregnancy
- Vaginal delivery – HR 2.1 regardless of continence status in pregnancy
- 2nd stage of labour > 60 minutes

Observational studies looking at the relationship between mode of delivery (MOD) and UI have reported that forceps delivery increases the risk of UI by 1.5 times compared with spontaneous vaginal delivery. Caesarean section halves the risk of post-partum UI compared with spontaneous vaginal delivery. However, longitudinal studies have also shown that prevalence of UI in women delivering exclusively by Caesarean section is still as high as 14%. Rortveit et al reported in the EPINCONT study that only stress UI was associated with MOD and the protective effect of Caesarean section decreases with age.

Buchsbaum et al found that the overall prevalence of UI in post-menopausal nuns is 50% (no different from parous post-menopausal women – 41-56%) and, in 143 pairs of parous and nulliparous post-menopausal sisters, the prevalence of UI was no different (47.6% nulliparous and 49.7% parous women).

Thus Caesarean section is only partially protective for UI and its protective effect decreases with age.

ANAL INCONTINENCE (AI): Reported prevalence of faecal incontinence (FI) in pregnancy is 10.3%. Risk factors for AI in pregnancy include

- Age >35 yrs (HR 1.7)
- Excess weight gain in pregnancy (HR 1.5)

In the post-partum period, FI is reported to be as high as 10% at 3 months. Fortunately, 50% of FI at 3 months does resolve by 6 years. There is a higher prevalence and severity of FI in women with recognized anal sphincter injury.

Observational studies looking at relationship between MOD and AI have reported that vaginal delivery and instrumental delivery are significant risk factors contributing to persistence of AI. Pretlove et al reported in a comparative systematic review that vaginal delivery increased the risk of AI at 1 year post-partum compared with Caesarean delivery with OR 1.32.

However, other studies have also reported that FI is still present in women delivering exclusively by Caesarean delivery – 7.6% at 6 months and 2.5% at 12 months. MacArthur reported that exclusive Caesarean delivery provided no protection for FI at 6 years post-partum. The recent 2010 Cochrane review stated that 'without demonstrable benefit, preservation of anal continence should not be used as a criterion for choosing elective primary CD'.

PELVIC ORGAN PROLAPSE (POP): 11% of women by age 80 yrs will have had surgery for UI or POP. The WHI study quoted that 41% of women aged 50-79yrs had some degree of uterine prolapse.

O'Boyle et al published in 2005 that POP-Q staging increased during pregnancy. Dietz and Bennett reported in 2003 that mode of delivery and length of 2nd stage of labour significantly correlated with pelvic organ mobility, and vaginal delivery was associated with increased pelvic mobility in all compartments. Dietz and Bennett concluded that Caesarean delivery was associated with less pelvic organ descent and that prelabour Caesarean section was most protective.

Dietz and Simpson reported in 2008 that POP, especially cystocoele and uterine prolapse were associated with levator avulsion injury on ultrasound studies. Heilbrun at al also found that major levator ani muscle injury was associated with 2X increased risk of POP on MRI studies.

However, Larsson at al reported that only 1% of women who delivered exclusively vaginally developed POP before the age of 60 years. Sze et al found that POP was already present in pregnancy with 26% at Stage II. So perhaps MOD only partially contributes to the development of POP and risk factors for POP eg. age, obesity, constipation, gyanecologic surgery, menopausal status and genetics need to be considered in the management of POP.

In conclusion, pregnancy and parturition have significant effects on the pelvic floor, and, labour and vaginal delivery do contribute to pelvic floor trauma and dysfunction. However, the aetiology of pelvic floor dysfunction is multifactorial and Caesarean delivery is only partially protective.

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Abstracts Saturday 16 October

SESSION 8
Perineal Trauma / Posterior Compartment

Learning objectives and outcomes

- Pointers in the identification of obstetric anal sphincter damage
- Current best practice in the repair of the anal sphincter after obstetric trauma
- Evidence based medicine for posterior compartment surgery
- New mesh kits on the market, their advantages and disadvantages in the posterior compartment prolapse repair

Obstetric anal sphincter repair: how to identify, repair and improve outcome

Saturday 16 October / Session 8 / 1505-1520

Higgs P

Third and fourth degree tears are sustained by 1-9% of women in centres where mediolateral episiotomy is performed. Rates of 17% have been reported in centres that perform midline episiotomy.

Long term morbidity following obstetric anal sphincter injurey (OASIS) may cause disruptive and upsetting symptoms, especially anal incontinence (up to 25%) and perineal discomfort (up to 10%) in the year following delivery.[1,2] Many of these symptoms are unreported to health professionals as women feel these symptoms are taboo and will not volunteer this information.

Risk factors for third and fourth degree tear are episiotomy, birthweight over 4kg, induction of labour, epidural and a second stage longer than 1 hour and instrumental delivery. However, these risk factors cannot be readily used to prevent the occurrence of third and fourth degree tears.[3] Restrictive use of episiotomy with a rate of approximately 27%, does not increase anal sphincter tears.[4]

Identification of OASIS at the time of delivery requires careful clinical examination with rectal examination essential at the time of any repair. Studies using immediate endoanal ultrasound have not improved detection rates over careful clinical examination.[5] Increased awareness and training improves detection rate of OASIS and obstetricians who are appropriately trained tend to provide consistent high standard repairs.[3]

Repair of the internal anal sphincter is recommended to be performed separately to the external anal sphincter using fine sutures (eg 3/0 PDS) although there are no definitive studies on this.[3]

Repair of the external anal sphincter is either with end to end or overlap repair techniques. The Cochrane database has found limited data to support the use of overlap repair with lower risks of faecal urgency and anal incontinence symptoms at 12 months.[6] In an RCT comparing the two techniques with only experienced surgeons performing the repairs, the rate of faecal incontinence at 12 months was 0% in the overlap group and 24% in the end to end group. There was no significant difference in rates of flatal incontinence, dyspareunia or difficulty in bowel evacuation.[7]

Other important factors which may improve the outcome of the primary repair include the performance of the repair in the operating theatre under general or regional anaesthesia, the use of either PDS or polyglactin sutures (not rapidly dissolving sutures), the use of intra operative and post operative antibiotics, the use of post operative stool softeners and the procedure performed by an experienced surgeon. However, there is little evidence to confirm these factors. Formal training in OASIS repair technique is recommended as part of obstetric training.[3]

Due to the reluctance of women to report anal incontinence symptoms, it is recommended that women with OASIS should be followed for 6-12 months by a consultant obstetrician gynaecologist and all women should be offered physiotherapy and pelvic floor muscle training for 6 to 12 weeks.[3]

Advice regarding mode of delivery in the next pregnancy is controversial. Women with symptoms of faecal incontinence after the first delivery (even if transient) have an increased risk of development of faecal incontinence following a second vaginal delivery.[8] All women who have sustained an OASIS and who are symptomatic or have abnormality on an endoanal ultrasound and/or anorectal manometry should have the option of elective Caesarean section for their next deliveries.[3] It seems that elective caesarean for this reason makes little impact on the overall caesarean section rate.[9]

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Posterior Elevate: new kid on the block?

Saturday 16 October / Session 8 / 1610-1630

Clark M

The patho-physiology of posterior vaginal prolapse or rectocele has been understudied. Recent investigations have exposed new understanding. Armed with knowledge about these anatomic defects the indications for mesh in this space are now clearer.

Anatomically there are three distinct defects and clinically these patients can be placed into three groups. Posterior elevate is a repair system that provides both a biologic and synthetic apical and posterior prolapse support solution. Ongoing multi-center investigations have revealed this to be a safe and effective repair.

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Laparoscopic posterior compartment approach

Saturday 16 October / Session 8 / 1630-1650

Cario G

When performing laparoscopic procedures for the repair of pelvic floor defects the goals of surgery must be the same as conventional reconstructive procedures; "to restore anatomy, relieve symptoms and restore and maintain urinary, bowel and sexual function."[1] These goals should not be compromised by this cutting edge, new and "sexy" laparoscopic approach. The indications for surgery are the same as those for vaginal and abdominal surgery. The operative route is usually determined by the surgeon's ability and experience and patient preference and of course how the operation is "marketed to the patient". Factors like a history of previous abdominal surgery, the age and habitus of the patient, previous failed pelvic floor or incontinence operations, the ability of the patient to undergo general anaesthetic, urodynamic factors and cost need to be taken into account.

ANATOMY: De Lancey's support system[2] must be used for modeling the engineering of the posterior compartment operation. The level 1 support for the upper quarter of the vagina is dependent on the pericervical ring with a major component coming from the uterosacral ligament and a secondary component from the cardinal ligaments. The level 2 supports come from the attachment laterally to the arcus tendineus fascia and the medial aspects of the Levator muscle complex and the Level 3 supports attach the lower quarter of the vagina to the perineal body. The rectovaginal septum supports the posterior wall. Richardson[3,4] describes an enterocoele as a condition involving a defect in the upper rectovaginal fascia where the peritoneum is in contact with the vaginal skin with no intervening rectovaginal fascia. A rectocoele is described as a defect in the lower rectovaginal septum with ballooning of the anterior rectal wall into the vaginal canal. This rectovaginal endopelvic fascia,(also known as rectovaginal septum or Denonvilliere's fascia) is attached superiorly to the pericervical ring and uterosacral ligament, laterally to the medial aspect or superior fascia of the levator muscles and inferiorly to the perineal body which occupies the lower third of the posterior vaginal wall to the level of the hymenal ring. It is not possible to get an enduring anterior or posterior compartment repair without excellent apical level 1 support which must be included in these repairs.

SURGERY: The rectovaginal septum is opened by incising the peritoneum over a separated rectal and vaginal probe, vaginal manipulator or McCartney tube. The incision is in a lunar shape fashioned to arch just within the uterosacral ligaments to keep the dissection medial and below the ureters using monopolar diathermy scissors or the Harmonic LCS. The correct dissection plane is in the 'champagne layer' close to the rectum in an identical fashion to that over the bladder in the retropubic space seen during laparoscopic colposuspension. It should be relatively bloodless and not too close to the vascular perivaginal venous plexus. The dissection is taken inferiorly down to the level of the perineal body and the levator (pubococcygeus) muscle laterally. The middle rectal artery is to be found lateral to the levator cushion and should be avoided if possible. It can however be safely divided even bilaterally as the anastomotic rectal vessels are numerous. Non absorbable sutures (0 Ethilon , 0 Monosoft or 0 Ethibond) are used to reconstitute the septum in layers heading cephalad from the perineal body inferiorly to just below the uterosacral complex at the apex in 'rungs' like the steps of a ladder. The suture 'steps' consist of a bite of the fascia over the posterolateral facscia on both sides together with at least 2 bites of the posterior vaginal wall fascia. These sutures can be bilateral and tied extracorporeally in the midline under minimal tension or they can be tied unilaterally to reduce stenosing the vagina or the rectum to guard against obstructed defecation. Usually 3-4 layers at 5mm intervals are required before the operation is completed with a uterosacral colpopexy. We always close the peritoneal defect at the end of the procedure

CLINICAL RESULTS AND COMPLICATIONS: The current literature for laparoscopic pelvic reconstruction is sparse and consists of short term descriptive case studies. Because prolapse is almost always multicompartment and the operations heterogeneous it is almost impossible to determine the success rates and complications for Laparoscopic posterior compartment repair in isolation. The reports are usually part of a review of all types of laparoscopic repairs. In our recent report in 2010 at the ISGE on "Operative Laparoscopy complications in 6685 Minimally invasive gynaecological cases in an Advanced Gynaecological Endoscopy unit" we reviewed 330 posterior compartment repairs and reported a bowel injury rate of 1% (2 rectal injuries repaired laparoscopically at the time of operation and 1 small bowel injury and transverse colon injury related to adhesions) There were no bladder or ureteric injuries, and only 1 return to theatre for a delayed injury to the transverse colon related to adhesions. There were no major transfusions required. Elvis Seman et al[5] reported a 4.1% major complication rate described as above with 1 transverse colon injury on primary port insertion in a patient with many previous laparotomies, a rectal injury with the rectal probe and bilaterally ureteric injuries. There was an anaphylactic reaction to the anaesthetic and a 1300 mls bleed requiring transfusion. Dyspareunia rates are almost impossible to calculate as there are so many concomitant operations performed like posterior perineal vaginal surgery which carries with it a risk of dyspareunia of 40%. Thornton et al[6] reported a de novo dyspareunia rate of 35% with a 30% improvement in disordered defecation.

Lyons and Winer[7] using polyglactin mesh reported an 80% symptomstic relief at 12 months in 20 patients and Thornton and Lam[6] reported a 97% subjective improvement in 40 patients with prolapse symptoms on patient questionnaire. Cook et al[8] which are the only group to isolate the data from laparoscopic posterior compartment or Laparoscopic supralevator repair with objective POP Q assessment pre and postoperatively reported

a 93% success rate over 3 years in 32 patients. The numbers in these reports are small and of course there are no RCTs to make any concrete recommendations about this operation. We are presently evaluating our own series attempting to isolate the data compartment by compartment.

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