

Female Pelvic floor Health: What's new and what's not so!

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UroGyabecologist and Pelvic floor Surgeon

The Royal Women's Hospital





* Contents:



- Overview
- Prevalence
- Presentation
- Management
- Surgeries
- Evidence
- Other

Why is it that we are discussing female pelvic floor health?





Is it because of prevalence?





* Prevalence



- PFD (Pelvic Floor Dysfunction) constitute both urinary and fecal incontinence as well as Pelvic organ prolapse symptoms.
- Prolapse is responsible for over 200,000 surgical repair procedures every year in the USA, (22.7 per 10,000 women), at a cost of over \$1 billion dollars.
- PFD affect 30% of women in the US.
- Life time risk of at least one prolapse or Urinary incontinence procedure is 11.1% (Boyles et all 1997).
- Repeat surgery for recurrent prolapse or urinary incontinence in 29.2% of patients within 4 years of primary surgery (Olsen et al 1997).

Epidemiology:



Trend in increase in POP Incidence for Surgery

The lifetime risk of surgery for POP in the general female population was 19% based on the most recent cross-sectional rates, a figure higher than the 11–12% reported from U.S. managed-care populations.

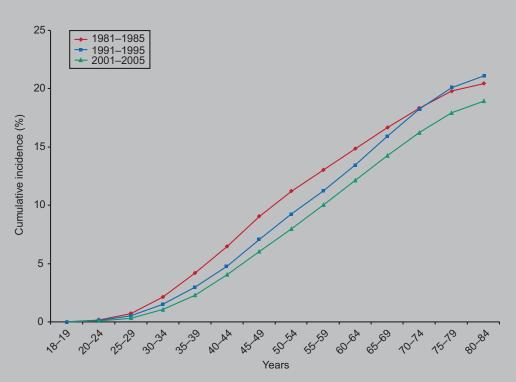
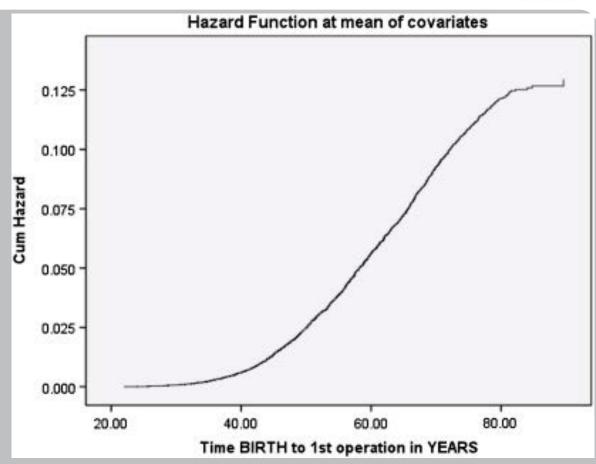


Fig. 1. Lifetime risk to age 85 years of undergoing first-time prolapse surgery in Western Australia for the periods 1981–1985, 1991–1995, and 2001–2005.

Smith. Lifetime Risk of Undergoing Surgery for POP. Obstet Gynecol 2010.

Epidemiology:





Plot of cumulative risk of surgery for pelvic floor disorders (POP/UI/RP-FI). Cum, cumulative; POP, pelvic organ prolapse; RP-FI, rectal prolapse or faecal incontinence; UI, urinary incontinence.

* Epidemiology:



- Prevalence in Australia:
- Pelvic floor dysfunction in women varies from 16.5% in 20-40 year olds to 31% in over 80 year olds.



The prevalence increases with age; among women, it is 2 fold higher in the over 80 age group compared to 20-40 age group. (The prevalence of urinary incontinence within the community: A systematic review funded by The Australian Commonwealth Department of Health and Aged Care).

Is it because it is expensive to public health?





Pelvic floor Dysfunction



Urinary Incontinence

In 2010, the total financial cost of incontinence in Australia was an estimated \$42.9 billion¹

Epidemiology:



- In the US; Incidence of hospital admission for prolapse was 2.04 per 1000 person-years.
- Incidence of surgical repair 1.62 per 1000 womenyears.
- 7.5% to 14% of the hysterectomy done for prolapse
- 42% of women undergoing incontinence surgery have prolapse procedure at the same time.
- From the National health discharge records between 1979-1997, 3,734,000 procedures for prolapse done the USA.(Boyels et al 2003)

Epidemiology:



Approximately 200,000 inpatient surgical procedures for prolapse are performed annually in the United States.

- The abdominal approach is contributing by about 30% of the total number of procedures for POP.
- The number of laparoscopic procedure to address POP has increased in the past 2 decades. With another surge since the vaginal mesh fallen out of favor.

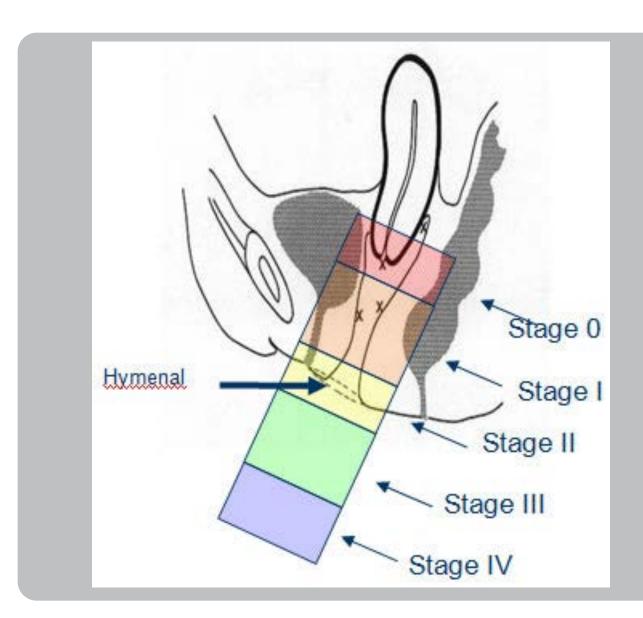


Is it because of the physical effect?

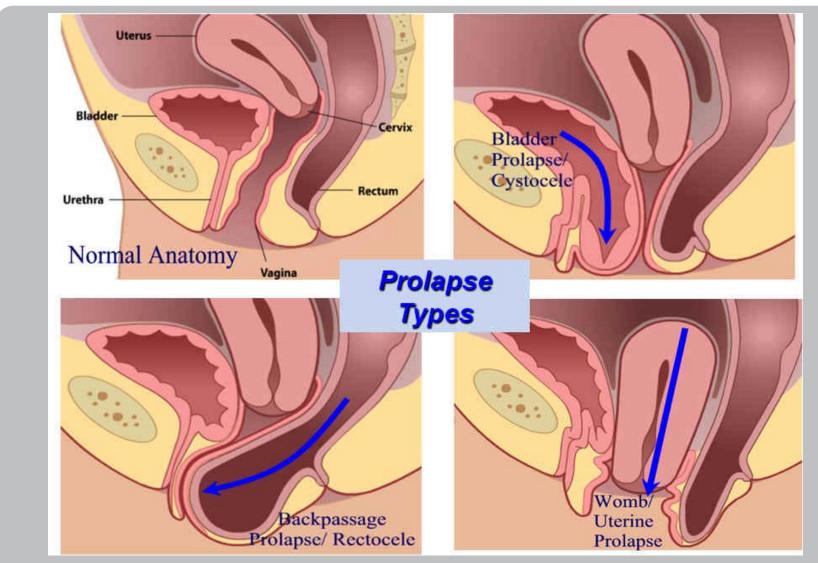


* Classification









* Presentation:



Direct physical symptoms

Organ related symptoms

Referred symptoms

Vaginal lump





victoria australia



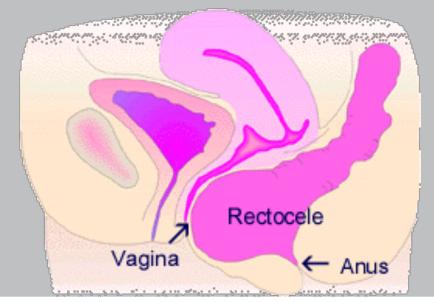


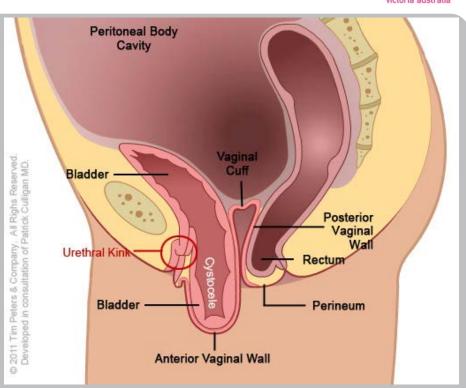
* Direct symptoms

* Presentation



- Organ related symptoms:
- 1. Voiding difficulty
- 2. Incomplete bowel emptying
- 3. Obstructive defecation





* Presentation



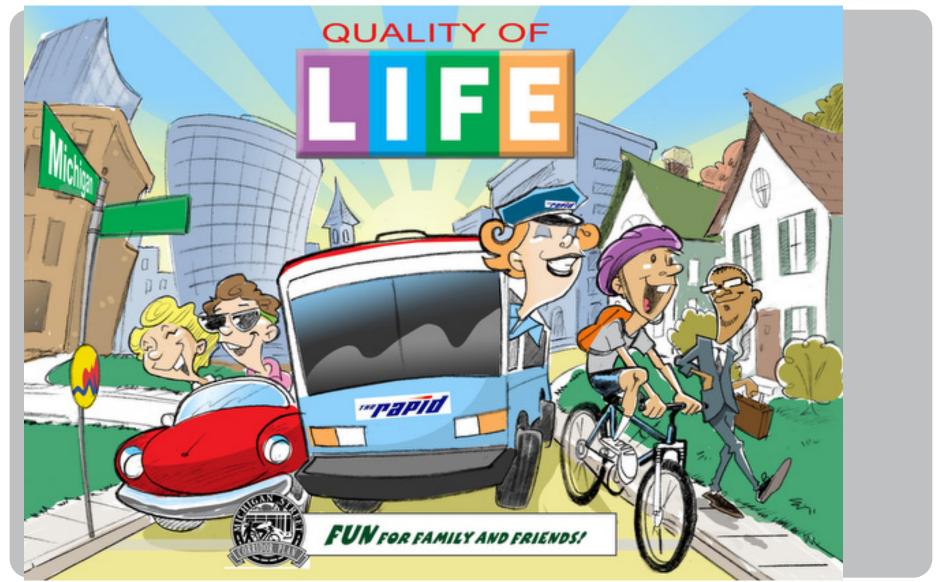
- *Referred symptoms:
- Lower back aches
- Dragging sensation
- Bleeding
- Pelvic pain





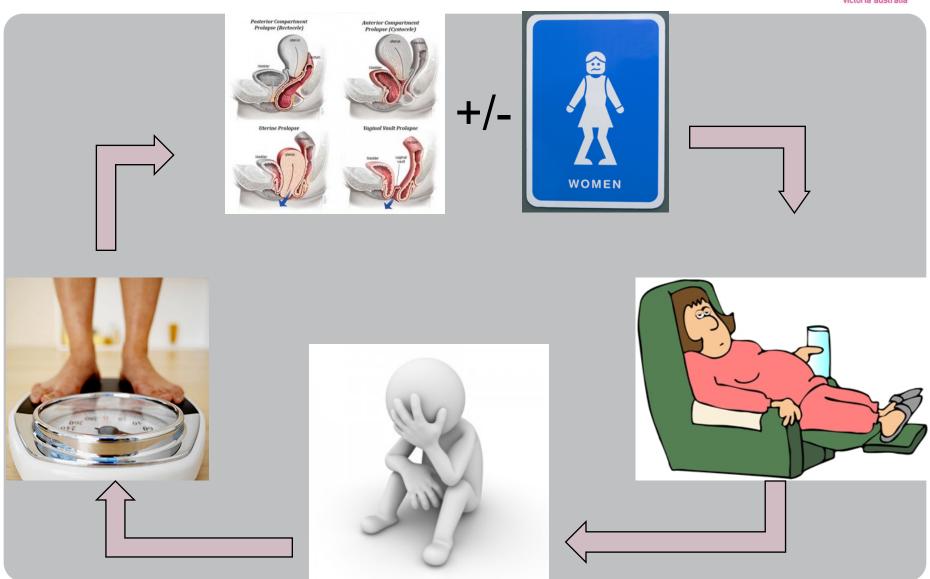
Is it because of its effect on quality of life?





Vicious Cycle





the women's the royal women's hospital victoria australia

Conservative Management:

- Life style changes.
- PFMT (Pelvic floor muscle training).
- Pessaries.

Other: e.g. estrogen

Life Style changes:



Wt Loss and Dietary advise

Avoid pelvic pressure

Treat contributing factors(e.g. constipation, chronic

cough)



* PFMT: Evidence:



- One study showed that PFMT can prevent mild prolpase from progressing significantly at 12 months yet at 2 years no significant difference in progression found.
- Cochrane review: 3 trials suggesting that the evidence is not significant to guide practice
- A feasibility study suggested that PFMT through a physiotherapist at a symptomatic woman may reduce severity of the symptoms.
- The POPPY trial: Found that there was a significant improvement in patient reported impression concerning prolapse and these patients found to be less likely requesting further treatment for their prolapse when compared to no treatment and at 6 months and 12 months.

* Pessaries: Indications:

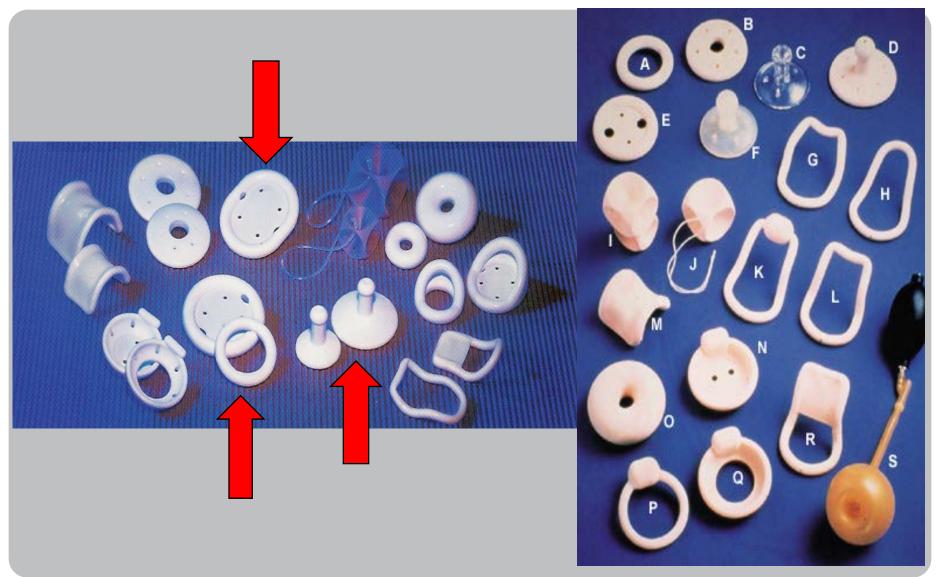


1. Older patients with medical conditions.

- 2. Pregnancy or in post partum period.
- 3. While on the waiting list.
- 4. To differentiate between different causes for symptoms (due to prolapse or not).

* Types of pessaries

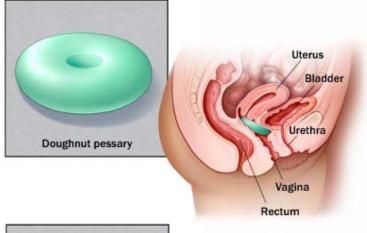




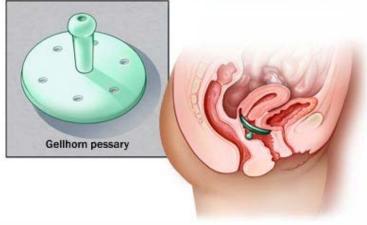




Reduction of vaginal prolapse by placing a halved pomegranate soaked in wine into the vagina described by Hippocrates







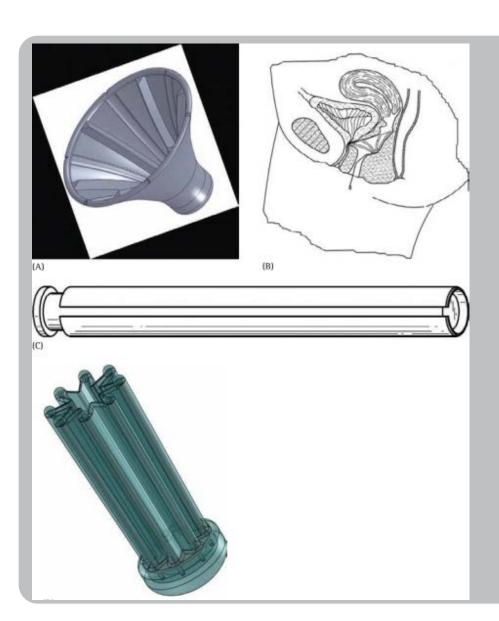


* Fitting pessaries

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Future designs:

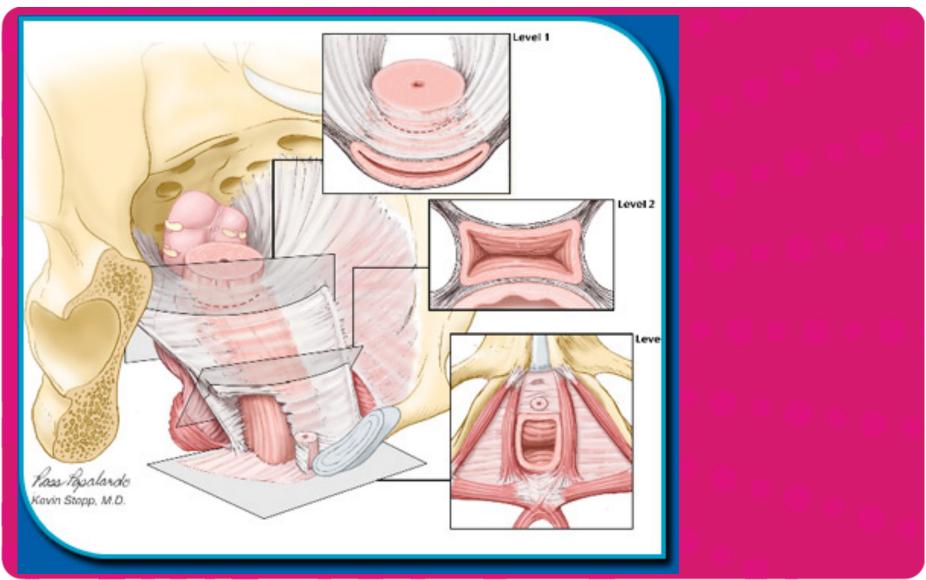




❖ A novel pessary idea: (A) Resembles an inverted umbrella with a string attached. Biased to stay open, it expands to support the vaginal walls (B). For removal, the patient inserts the string into a tubular introducer (C) and pulls gently to collapse the pessary (D) into the introducer. For insertion, the introducer loaded with the pessary is placed at the vaginal opening and the pessary is released by a plunger.

*Surgical Treatment







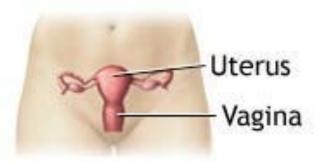
*Surgical Treatment

Variable Success rate.

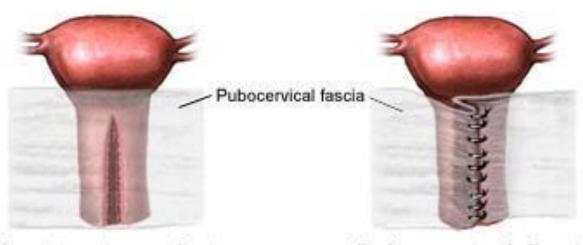
Difference in efficacy between site and material used.

- Difference in efficacy and the route of surgery.
- Effect of Hysterectomy and accompanying incontinence surgery on results and outcomes.





Anterior vaginal wall repair



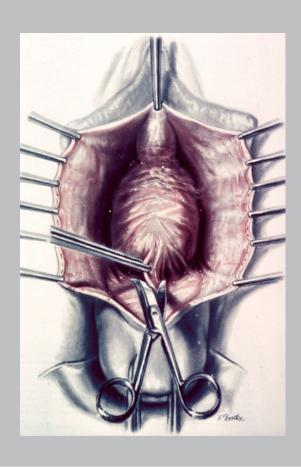
Incision is made in anterior vaginal wall

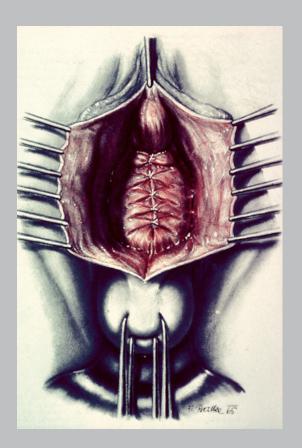
Pubocervical fascia is folded and stitched

* Fascial Plication:

* Colporrhaphy:

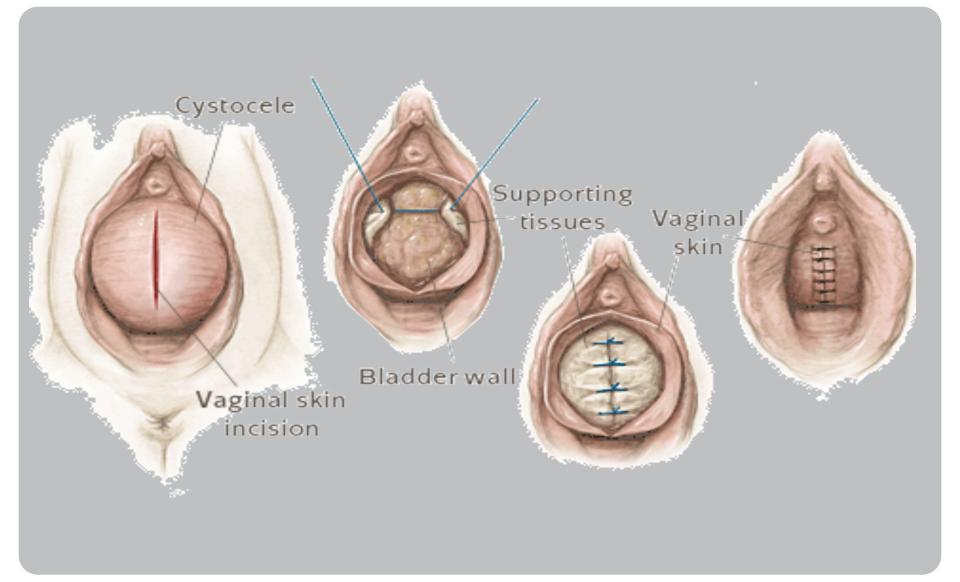






Colporrhaphy

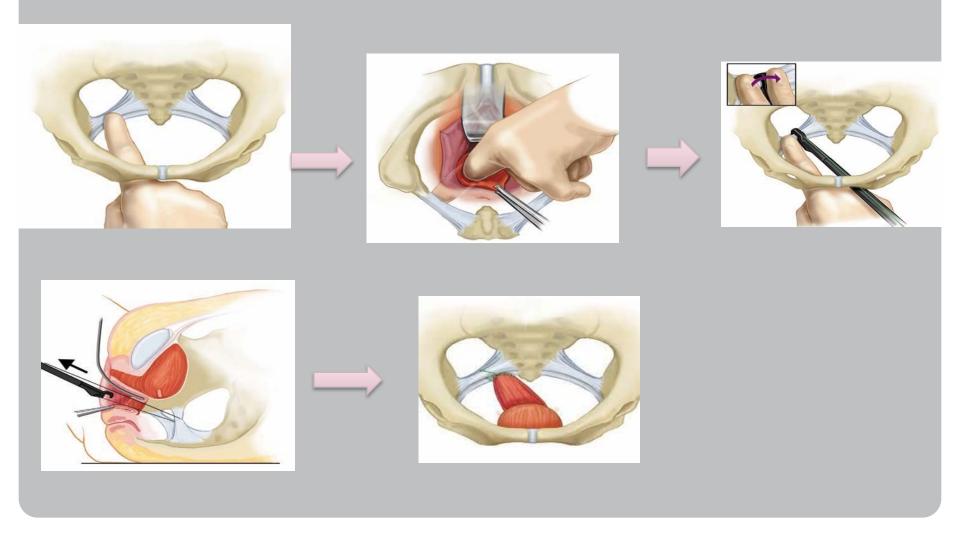




Uterine conservation surgery:



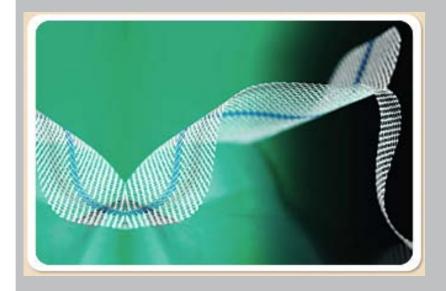
Vaginal approach: Sacrospinous Hysteropexy



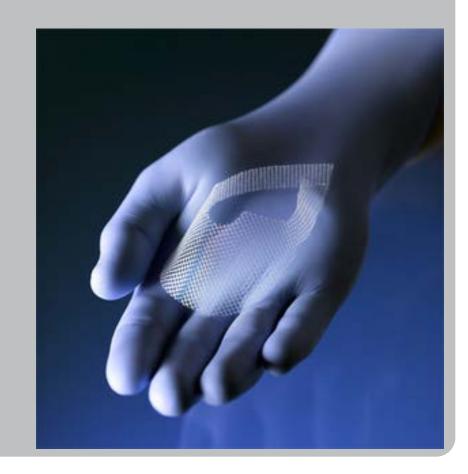
Mesh Reinforcement:



Pinnacle Posterior



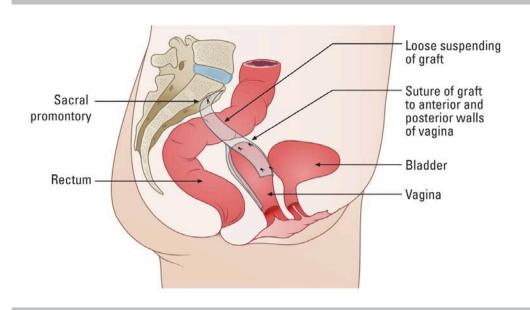
Uphold Anterior



Pinnacle Pelvic Floor Repair Kit Devices the women's the royal women's hospital victoria australia Reach Level I & II Support Scientific Delivering what's next."



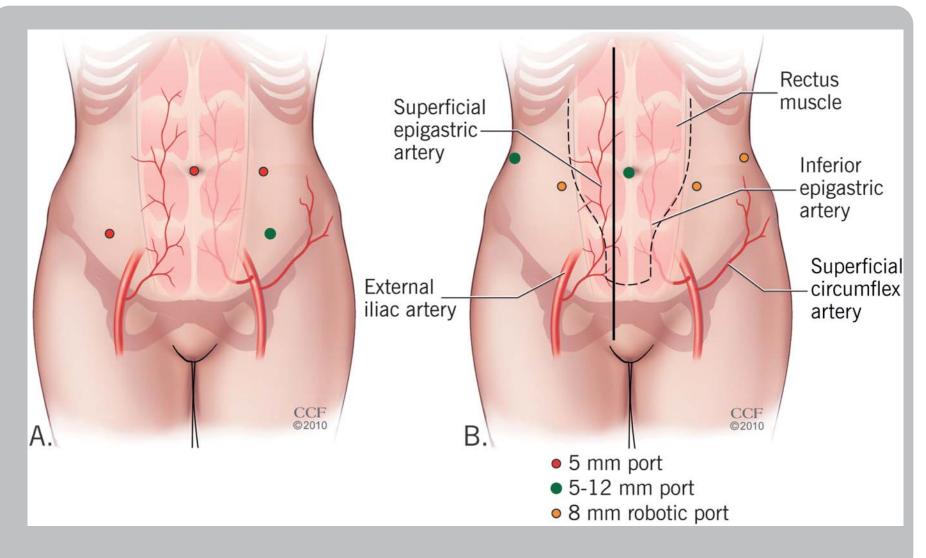






Sacrocolpopexy:

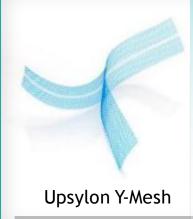




Upsylon™ Y-Mesh and the Colpassist™ Vaginal Positioning Device www.pelvic-floor-institute.com

Upsylon™ Y-Mesh and Colpassist™ Vaginal Positioning Device: *Product Information*





The Upsylon Y-Mesh:

- •Provides the long term benefits of a lightweight, low surface area mesh
- •The mesh handling characteristics, large pores and blue color are designed to ease positioning and fixation to assist with placement
- Has an indication for use in robotic procedures



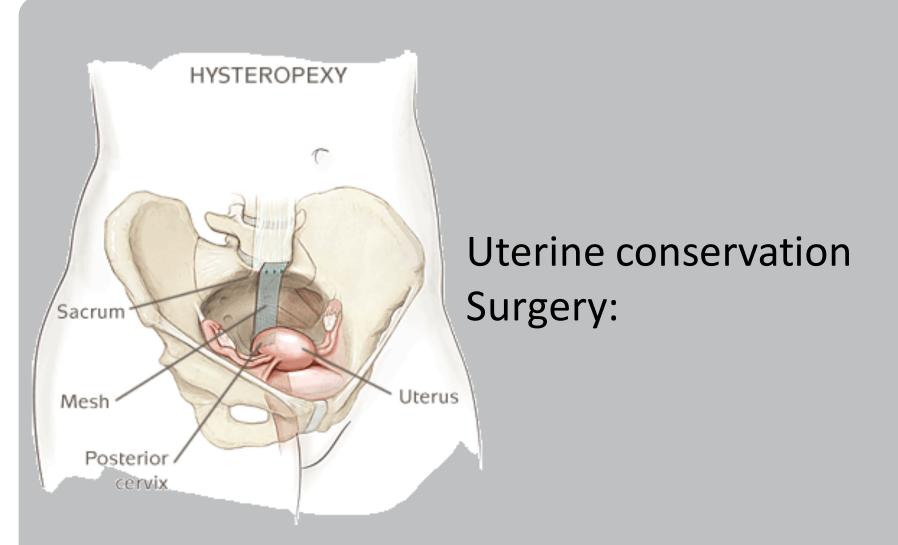
Colpassist Vaginal Positioning Device

The Colpassist Vaginal Positioning Device:

- •Is the first device specifically designed for:
 - Vaginal positioning in gynecologic procedures and as a suturing platform for vaginal wall fixation during sacrocolpopexy
- •Has 2 unique size end options to create a flat suturing surface
- •Allows for multi-direction vaginal manipulation

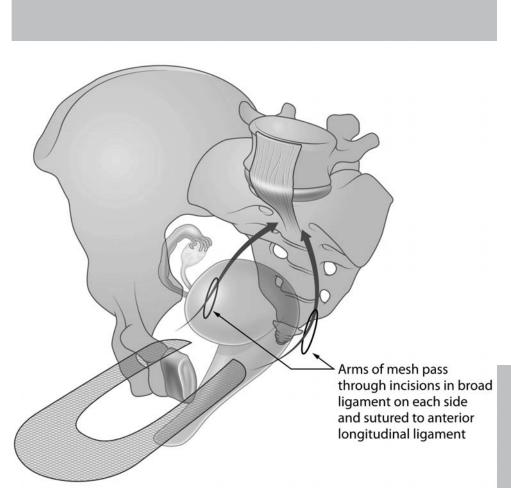


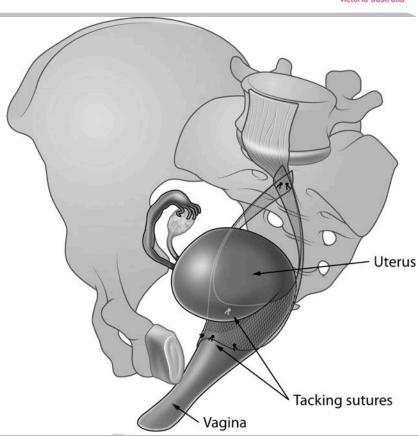
Abdominal: Laparoscopic sacral Hysteropexy



Uterosacral Sling:



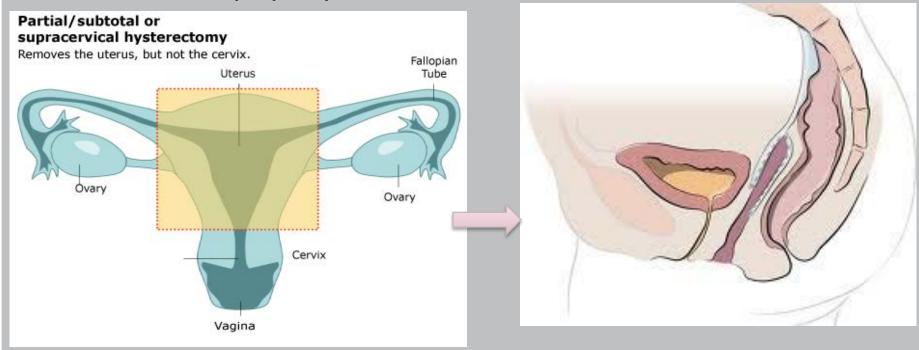




Cervical conservation surgery:



Laparoscopic / Robotic Subtotal Hysterectomy and Sacro-Colpopexy:



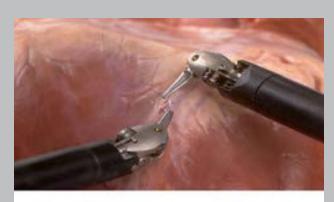
❖ Da Vinci surgery: Less invasive. More precise. Faster recoveryal men's hospital victoria australia



*Da Vinci Technology



Pneumoperitoneum
"Docking" the Robot
Cabled "EndoWrist" Tech.







Da Vinci Xi

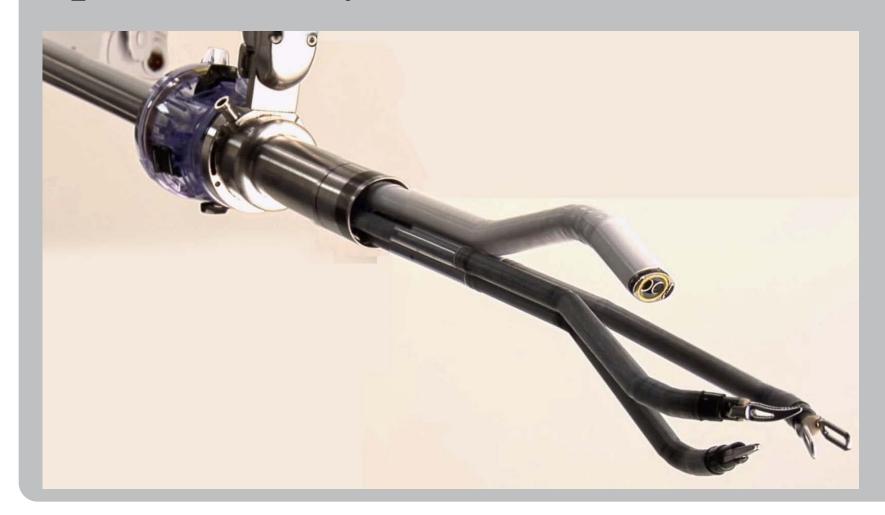






The new Da Vinci Sp single

port robot system



Difference between laparoscopy and Robotic:





Robotic Surgery





Keyhole surgery







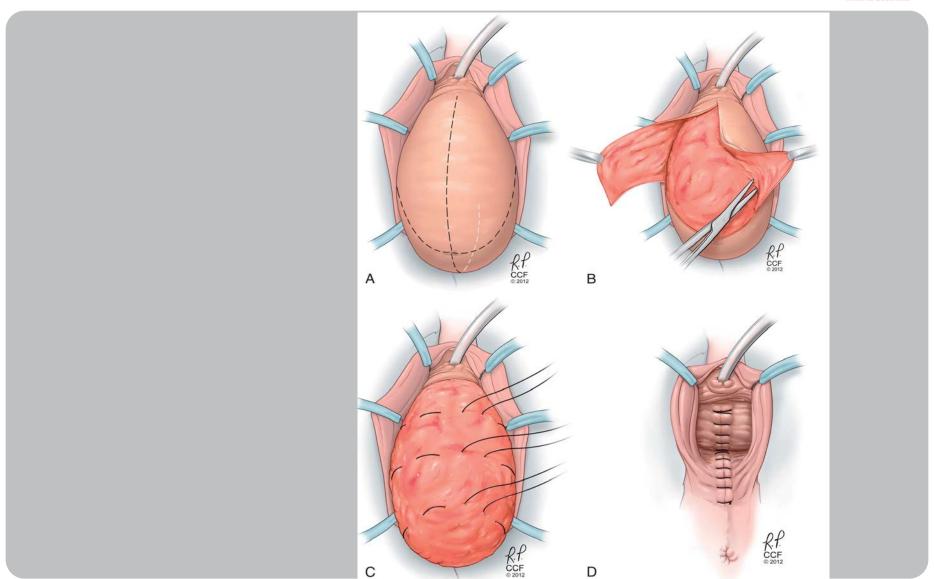
Colpocliesis:



- Le Fort Nouveau first described the procedure 1887
- Colpocleisis: Colopocleisis = (Col-po-clei-sis) surgical closure of the vaginal canal. (Dorland's Medical Dictionary for Health Consumers 2007)
- For women with complicated medical history who do not desire future vaginal intercourse may consider obliterative procedure, that is highly effective with low morbidity, to correct apical vaginal prolapse.







PFMT: Evidence:



In women undergoing vaginal surgery for pelvic organ prolapse and stress urinary incontinence, neither ULS nor SSLF was significantly superior to the other for anatomic, functional, or adverse event outcomes two years after surgery. Perioperative BPMT in these women did not improve urinary symptoms at 6 months or prolapse outcomes two **Vears after surgery**.(Comparison of 2 transvaginal surgical approaches and perioperative behavioral therapy for apical vaginal prolapse: the OPTIMAL randomized trial. JAMA. 2014 Mar 12;311(10):1023-34. doi: 10.1001/jama.2014.1719.)







Types of Urinary Incontinence:

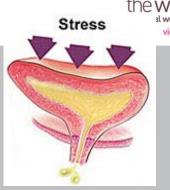
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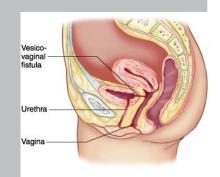
Urodynamic stress incontinence.

- Detrusor over activity.
- Mixed.

- Overflow incontinence.
- Temporary (UTI).
- Functional disorder (mobility, cognitive).
- Extra urethral (ectopic ureter or Fistula).





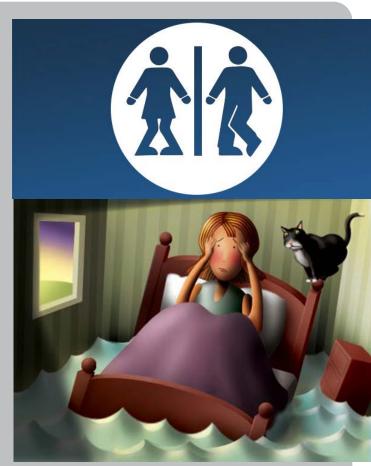


Clinical evaluation:



❖ Presenting Symptoms:
☎ type :SI, UI, insensible leakage
☎ onset, frequency, duration, severity.

❖ Associated Symptoms:
 ℧Urinary frequency, nocturia
 ℧ysuria, bladder pain, haematuria
 ℧Voiding dysfunction
 ℧Bowel symptoms: constipation, AI
 ℂ Effect on sexual function



Urge Incontinence



Components of overactive bladder

International Continence Society (ICS) definition of overactive bladder¹

Urgency with or without urge incontinence, generally usually with increased frequency and nocturia

Urgency

The complaint of a sudden compelling desire to pass urine that is difficult to defer

pre

The need to void more than 8 times in a 24-hour period

Urgency Urinary Incontinence

The complaint of involuntary loss of urine that is accompanied by or immediately preceded by urgency

Nocturia

The complaint of having to void more than once per night



Differential diagnosis of symptoms suggestive of overactive bladder in women¹



- Urinary tract infection
- Prolapse
- Urethral obstruction
- Atrophic vaginitis
- Bladder cancer
- Interstitial cystitis
- Postsurgical incontinence
- Diabetes
- Congestive heart failure
- Multiple sclerosis
- Medications/diuretics
- Neurogenic bladder
- Recent pelvic surgery
- Stress urinary incontinence



Management of DOA:



- Lifestyle changes therapy.
 - Physiotherapy.

Pharmacological therapy.



Lifestyle changes:



- Dietary: some foods and beverages are thought to contribute to bladder leak (not been proven it may be reasonable to see if eliminating one or all of them helps):
- Alcohol.
- Carbonated (+/- Caffeine).
- Coffee and tea (+/- Caffeine).
- Citrus juice and fruits.















Pharmacotherapy



- Decrease detrusor contractility
 - Increase urethral resistance
 - Dual effects
 - Reduce fluid out put (Minirin)
 - Neurotoxins



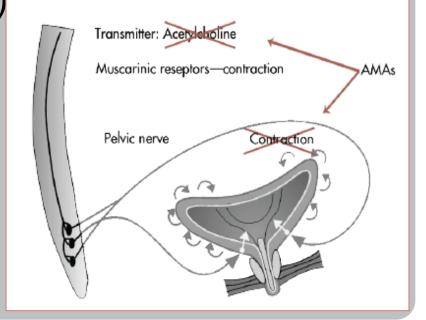
Pharmacological therapy:



™Decrease detrusor contractility:

- Oxybutynin (Ditropan)/(Oxytrol)
 - Tolterodine (Detrusitol)
 - Solafenacin (Vesicare)
 - Darifenacin (Enablex)

Figure 3: Parasympathetic innervation



Newer medication: Mirabegron

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β3-adrenoceptor agonist

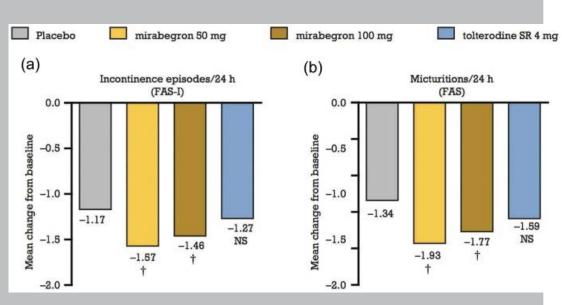


Myrbetriq may increase the bladder's ability to store urine.





Mirabegron has been studied extensively in more than 10,000 individuals over the last 10 years. The safety and efficacy in patients with OAB were evaluated in six global studies.



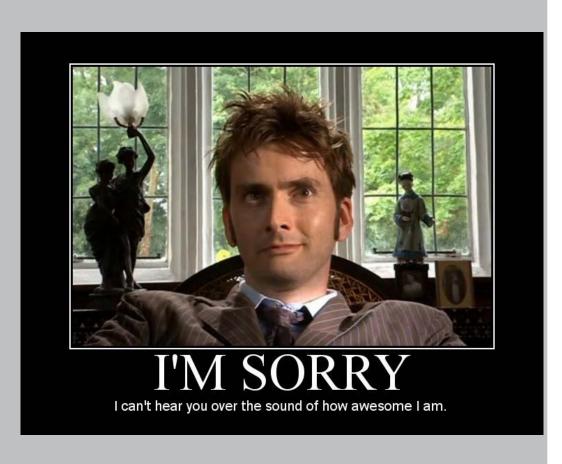
Chapple and colleagues reported the results of mirabegron in patients with OAB. Mirabegron was significantly superior than placebo with regard to mean volume voided per micturition, mean number of incontinence episodes, nocturia episodes, urgency incontinence episodes, and urgency episodes per

24 h.

When to refer? And "Who" do you refer to?



- Failed conservative Management.
- Pain, Haematuria or recurrent UTIs (>or=3 in 6/12)
- Voiding difficulty.
- Suspected fistula.
- Neuropathic bladder.
- Significant pelvic organ prolapse.
- Uncertain diagnosis.



Indications for Urodynamics:



- Failed to respond to empirical treatment.
 - Previous continence surgery.
- Prior to definitive continence procedure.
- Prior to prolapse repair accompanying stress incontinence.
- Symptoms suggesting of voiding difficulty.
- Presence of neurological disease.



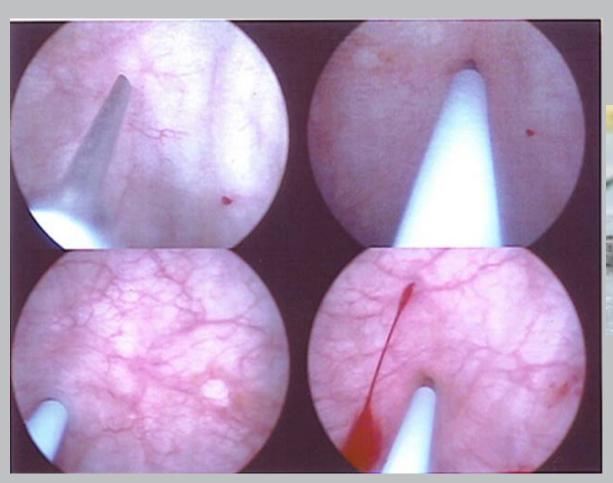
Aim of Uds:



- 1. Identify / eliminate detrusor overactivity (it influence treatment options).
- 2. Identify / eliminate voiding difficulty (complicate treatment outcome)
- 3. Confirm the presence of SI.
- 4. Identify the presence of prolapse and relation to the bladder dysfunction (Boney's test)
- 5. Assess severity (help triage patients).

Other treatment for OAB: Botulinum neurotoxin

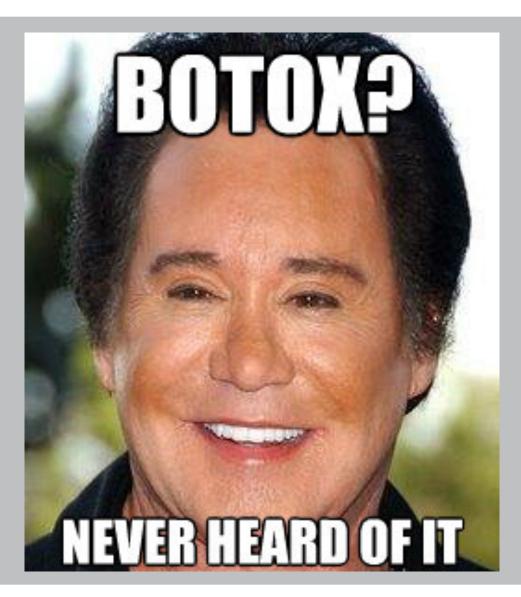






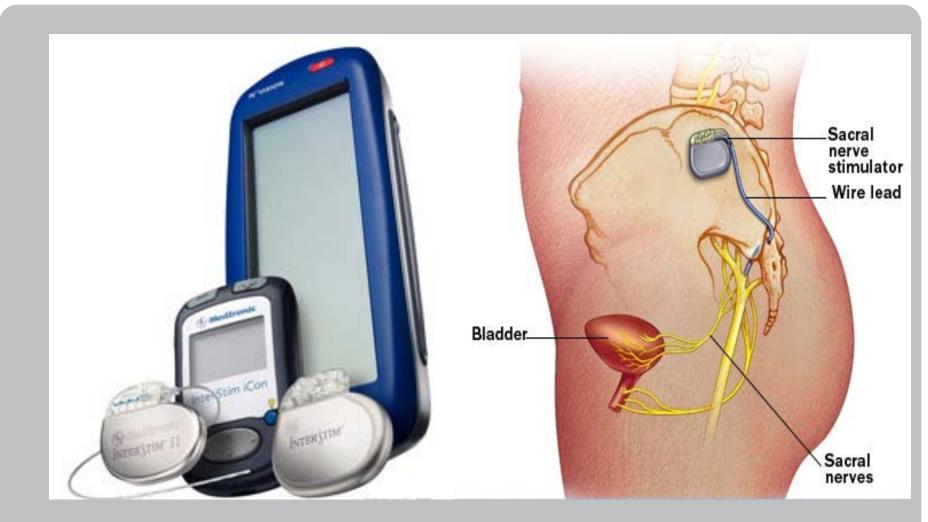






Sacral nerve Modulation (for refractory Bladder over activity)





Stress Incontinence



- Incontinence of urine when the intra-vesical pressure exceeds the maximum urethral pressure in the absence of detrusor activity.
- Presents as: involuntary leakage on effort or exertion, or on sneezing or coughing.
- During Urodynamics: the involuntary leakage of urine during increased abdominal pressure, in the absence of a detrusor contraction.







Stress incontinence:



Female stress urinary incontinence (SUI) is a common condition, with prevalence rates ranging from 12.8% to 46.0%.





This is not a Treatment!

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Treatment: Conservative



- Lifestyle changes: correct exacerbating factors
 - Physiotherapy
 - Bladder re-training
 - PFE / Kegel exercises
 - 30-50% improvement with supervised physio 3/12
- Less 1/3 may be unable to do PFE correctly even with physio
 - Vaginal cones
 - Pelvic floor contraction required to keep cone in position
- 70% improvement, need life-long use to maintain improvement
 - Vaginal oestrogen
 - ↑ subjective outcome in SI, no change in objective loss

Surgical treatment SI



- Retro pubic urethropexy (Burch)
- 2. Suburethrtal slings
- 3. Retropubic Rectus sheath sling (Pubovaginal Sling).
- 4. Periurethral Injection

Burch colposuspension

▶ Gold standard for many years (not now)!



Laparoscopic colposuspension:

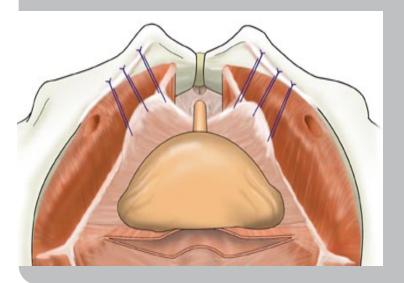
Long learning curve: 35-50 cases

No standardized technique

Suture type, placement and number identical to open

Expensive procedure

RCT's: LB to be as effective as OB for USI







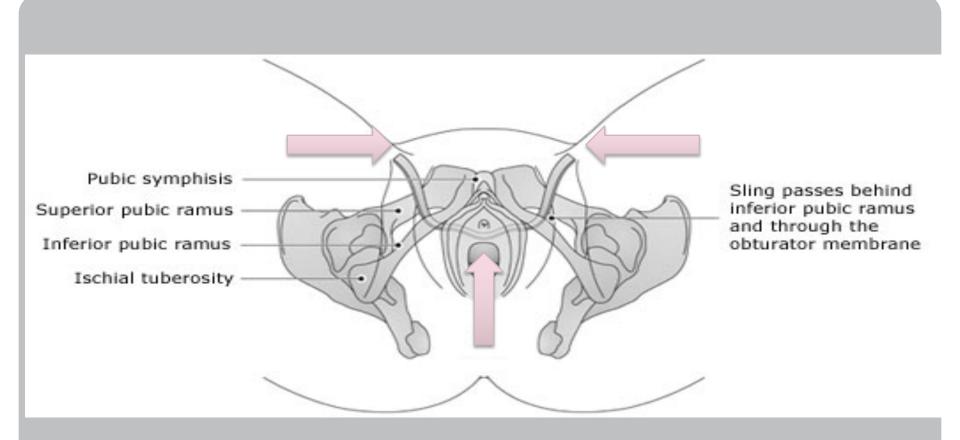
Surgical treatment SI



- 1. Retro pubic urethropexy (Burch)
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- **4. Periurethral Injection**

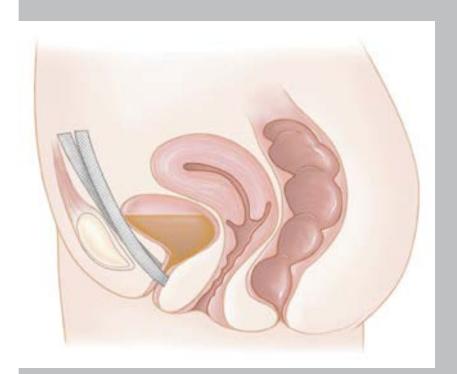
Mid-Urethral Sling





Mid-Urethral sling







Advantage Tape Fit



MUS: complications



- General: anaesth, DVT
- Bleeding (1 case of EIA perforation)
 - Infection
- Bladder perforation, injury to urethra
 - Bowel injury (uncommon)
- Voiding dysfunction (long-term catheter 1%, need to divide tape)

Generally Safe procedure

Mach avnocura

MUS



- The gold standard procedure of USI
 - Simple, safe and minimally invasive
 - Most efficient
 - Over 1,000,000 cases
 - 17 years data available now





Statement of

The American Urogynecologic Society and The Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction

Position Statement on Mesh Midurethral Slings for Stress Urinary Incontinence

The polypropylene mesh midurethral sling is the recognized worldwide standard of care for the surgical treatment of stress urinary incontinence. The procedure is safe, effective, and has improved the quality of life for millions of women.

This procedure is probably the most important advancement in the treatment of stress urinary incontinence in the last 50 years and has the full support of our organizations which are dedicated to improving the lives of women with urinary incontinence.

IUGA Statement June 2014:



- Surgery is generally a more effective treatment than PFMT.²
- The FDA publications clearly state that MUS were not the subject of their safety communication.
- ❖ There is robust evidence⁹⁻¹¹ to support the use of MUS from over 2,000 publications making this treatment the most extensively reviewed and evaluated procedure for female stress urinary incontinence now in use.
- the results of a recent large multicentre trial¹³ have again confirmed the excellent outcomes and low risks of complications to be expected after treatment with MUS. Additionally, long term effectiveness OF UP TO 80% has been demonstrated in studies following patients for up to 17 years.¹⁴⁻¹⁵





- In conclusion:
- IUGA supports the use of monofilament polypropylene mid-urethral slings for the surgical treatment of female stress urinary incontinence.

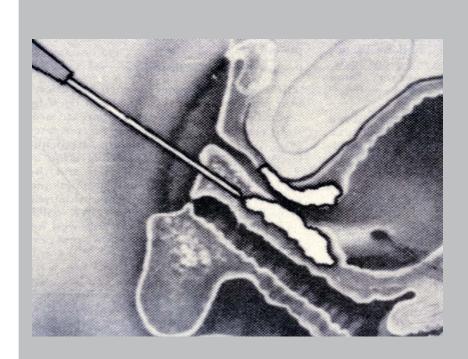
Periurethral bulking agents

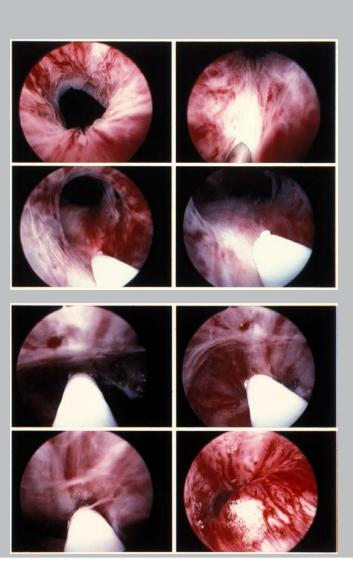


- Cure rate (defined as dry) at 12/12= 48% (RCOG 2003)
- Success rate (improvement) = 76%
- Pros: fewer voiding problems, repeatable procedure and its an out patient's procedure.
- Cons: expensive and less effective with repeat
- 7+ years data available now

Periurethral bulking agents







Bulking Agents



Macroplastique:





Bulkamid:



closing mechanism

Stress Urinary Incontinence can be the result of weakening in the tissue. Urine can pass unintended from bladder to urethra.



Bulkamid®deposits

Under local anesthesia three to four deposits of Bulkamid[®] gel are injected into the wall of the urethra.



The bulking effect prevents urine to pass.

Other Treatment options:







* A double-blind randomized controlled trial of electromagnetic stimulation of the pelvic floor vs sham therapy in the treatment of women with stress urinary incontinence. BJU Int. 2009 May;103(10):1386-90. Gilling PJ, Wilson LC, Westenberg AM, McAllister WJ, Kennett KM, Frampton CM, Bell DF, Wrigley PM, Fraundorfer MR.

Electro-magnetic: No evidence that it has more effect compared to placebo.

Other Treatment options: Laser



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Cosmetic Surgery

Laser Treatments

Platelet Treatments

Fat Reduction

Rejuvenation

Facial Enhancement

Urinary Incontinence

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Urinary Incontinence - Laser Treatment

The laser used is an Erbium Yag 2940nm. This has been widely used for facial skin resurfacing in the last 10-15 years and has been proven to be safe and effective.

How it works:

A special laser introducer is inserted into the vagina after the area has been sterilized with an antiseptic. A laser applicator is inserted into the introducer which lasers the front wall of the vagina. A different laser head is then used to laser the rest of the vagina. New collagen growth occurs over 1-3 months resulting in contraction of the vagina by 20-30%. This contraction results in the elevation and tightening of the pelvic floor reducing incontinence.



(+)	Office Hours			
MON	8.30am-9pm			
TUE	8,30am-9pm			
WED	8.30am-9pm			
THU	8.30am-9pm			
FRI	8.30am-9pm			
SAT	9am-5pm			
SUN	9am-5pm			
8	APPOINTMENT'S 03 93 981400			
0	EMAIL info@ely.net.au			

Minimally invasive laser procedure for early stages of stress urinary incontinence (SUI)

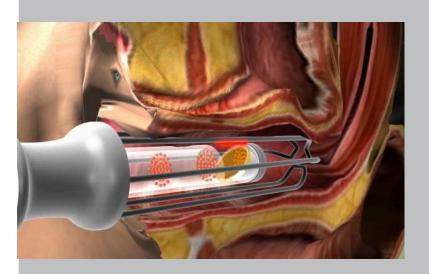


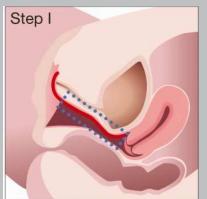
Fistonić Ivan¹, Findri-Guštek Štefica², Fistonić Nikola³

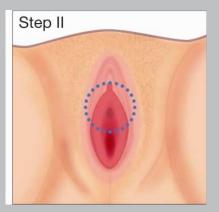
¹Gynecology clinic, Zagreb, Croatia

²Ob/ Gyn Office, Zagreb, Croatia

³Health Community Center, Zagreb, Croatia







Other Treatment options: Laser



- During pregnancy: recurrence of stress incontinence symptoms.
- Risks of urinary retention.
- The over- all incidence of persistent SUI after delivery, regardless of delivery mode, was (19%).
- There are no documented cases of fetal injury or death due to sling related complications in the literature to date.





Postpartum continence according to mode of delivery reported for the 36 women.^a

Mode of delivery	No. of women (n=36)		Postpartum continence (n=29) b	95% confidence interval
Vaginal	21		16 (76.2)	52.8–91.8
Cesarean	15		13 (86.6)	59.5–98.3

^a Values are given number (percentage) unless otherwise indicated.

^b P = 0.67 by the Fisher exact test.





- American Urogynecologic Society revealed that 40% of polled physicians would always perform a cesarean delivery following incontinence surgery.
- 251 obstetricians and gynecologists in the United Kingdom revealed that only 78% were prepared to perform a continence procedure on women who still wished to have children while 91% would offer a cesarean delivery to continent, pregnant women after surgery.





- There is no consensus on management of pregnancy and delivery in women who have undergone a surgical procedure for treatment of SUI.
- While many patients and clinicians assume that cesarean delivery is the only delivery option in these cases, this has not been established.



So, why is it that we are discussing female pelvic floor health?











• THANK YOU...