Urinary incontinence and Prolapse

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Definitions:

- IUGA/ICS standardized terminology

- Urinary incontinence (symptom): complaint of involuntary loss of urine
- Frequency-increased daytime frequency
- Urgency-sudden compelling desire to void which is difficult to defer
- Urgency incontinence
- Nocturia-interruption of sleep 1 or more times because of the need to micturate

- Stress urinary incontinence-complaint of involuntary loss of urine on effort or physical exertion (e.g. sporting activities), or on sneezing or coughing
- Overactive bladder- urinary urgency, usually accompanied by frequency and nocturia, with or without urgency urinary incontinence, in the absence of urinary tract infection or other obvious pathology
- Mixed urinary incontinence-complaint of involuntary loss of urine associated with urgency and also with effort or physical exertion or on sneezing or coughing

History:

- The history taking is one of the most important points in managing patients with incontinence. It should be taken carefully with special attention to:
- childhood history (e.g. enuresis, surgery of the urinary tract, recurrent urinary tract infections, etc)
- medical disorders such as asthma, spinal cord trauma, diabetes, heart disease when the incontinent episodes occur
- Medications such as diuretics, antidepressants
- Surgical history- previous surgeries to uterus (e.g. hysterectomy), spinal cord, back or urinary tract surgery
- Obstetric and gynaecological history- menstrual status, sexual activity, childbirth history with specific attention to duration of labour, use of assisted delivery instrument, perineal tears

Examination:

- Private
- Do not empty bladder (incontinence)
- General exam ffd by gynaecological
- Vulva and perineal exam
- Note presence of prolapse
- Cough-? Leak vs support ant vaginal wall ?leak (Bonney test)-? Sling
- Oxford grading system-0-5
- Empty bladder-do post void residual

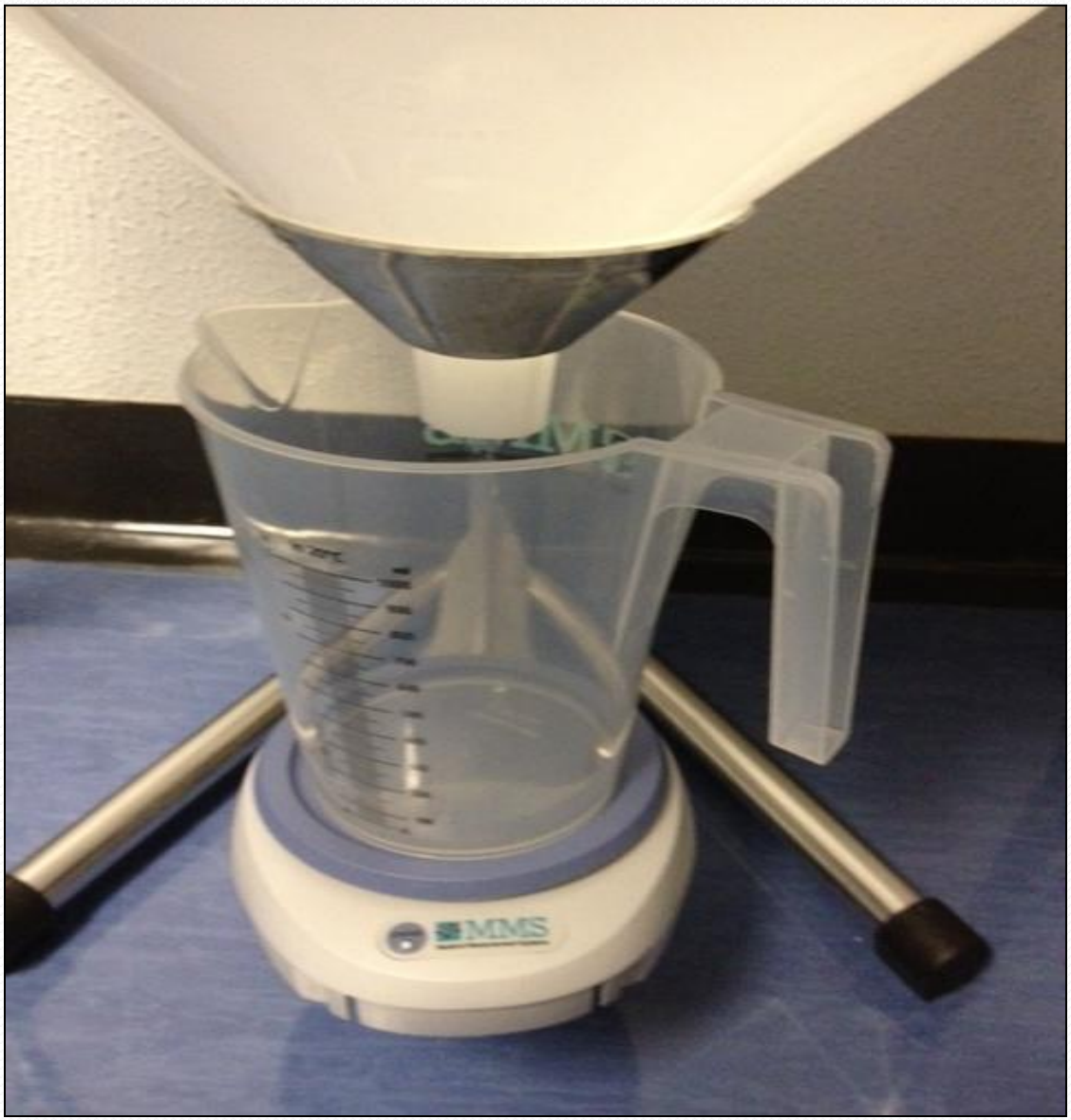
Tests:

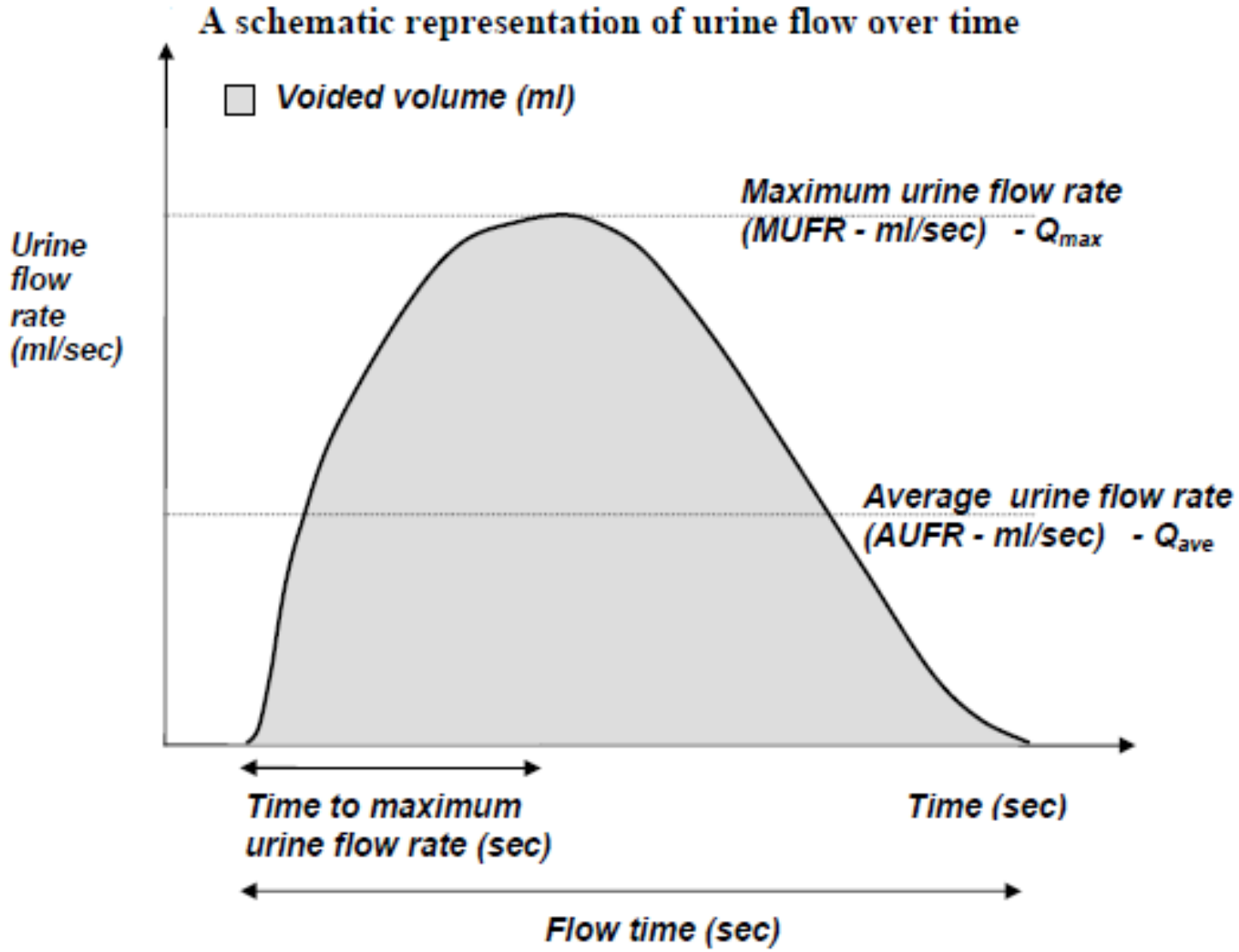
- F-glucose, U-MCS
- EUA, cystogram-fistula
- Pad testing
- Bladder diary-FVC
- Urodynamic studies-unclear history, previous failed surgery, planning surgery

  -uroflow

  -cystometry-pressure flow studies

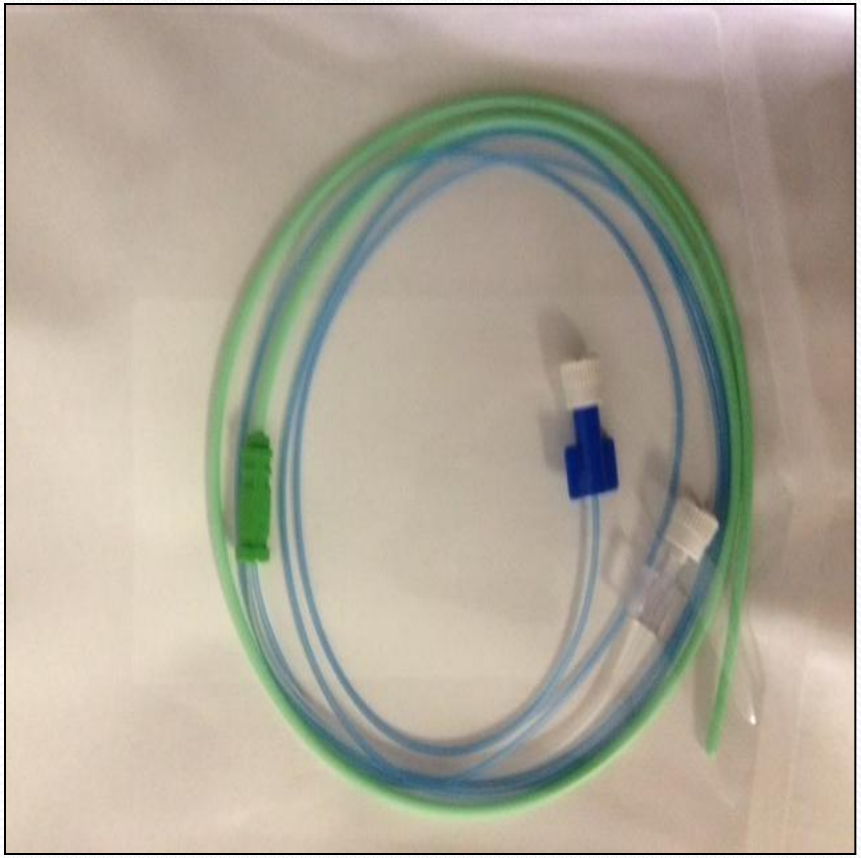
Commode:


MMS


A schematic representation of urine flow over time
Voided volume (ml)
Urine flow rate (ml/sec)
Maximum urine flow rate (MUFR - ml/sec) - Q_{max}
Average urine flow rate (AUFR - ml/sec) - Q_{ave}
Time to maximum urine flow rate (sec)
Time (sec)
Flow time (sec)

- Introduce catheters and fixed-supine
- Water or saline infused
- Room temperature-50-60mls/min- <20cmH20
- Filling-sitting position
- Flush bladder and rectal lines-then record
- Ask pt to cough-biphasic spike on detrusor line
- Continuous dialogue between investigator and pt

Double lumen 8 Fr



Rectal 8 Fr

- First sensatn-50% of cystometric capacity
- Normal desire to void-75%
- Strong desire to void-90%
- Urgency-sudden compelling desire
- Pain-abnormal during filling & voiding

Pretoria Academic hospital

Urology

012 354-1629

Patient Data:

Patient Name	[redacted]	Date of Birth	[redacted]
Patient ID		Sex	

Notes:

Referring Department	GYNAE	Examining Doctor	GYNAE
Referring Doctor			

Urine tested:- NAD, PHS-0

Main Results: Rate used 50ml/min. No leakage throughout the procedure.

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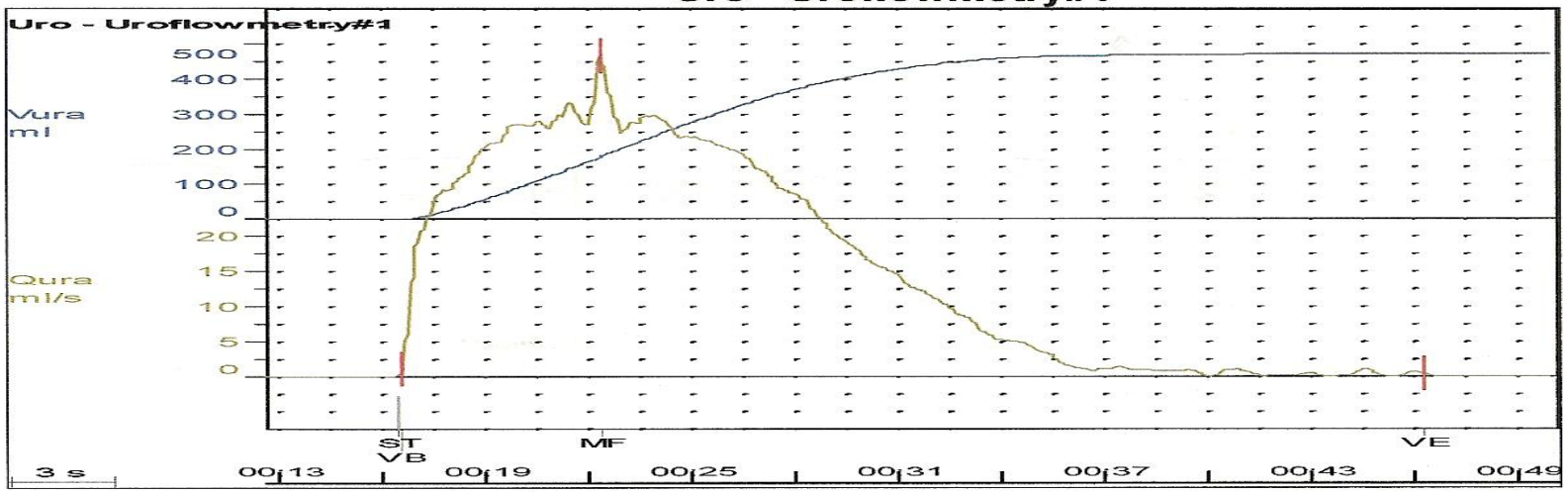
Uro - Uroflowmetry#1

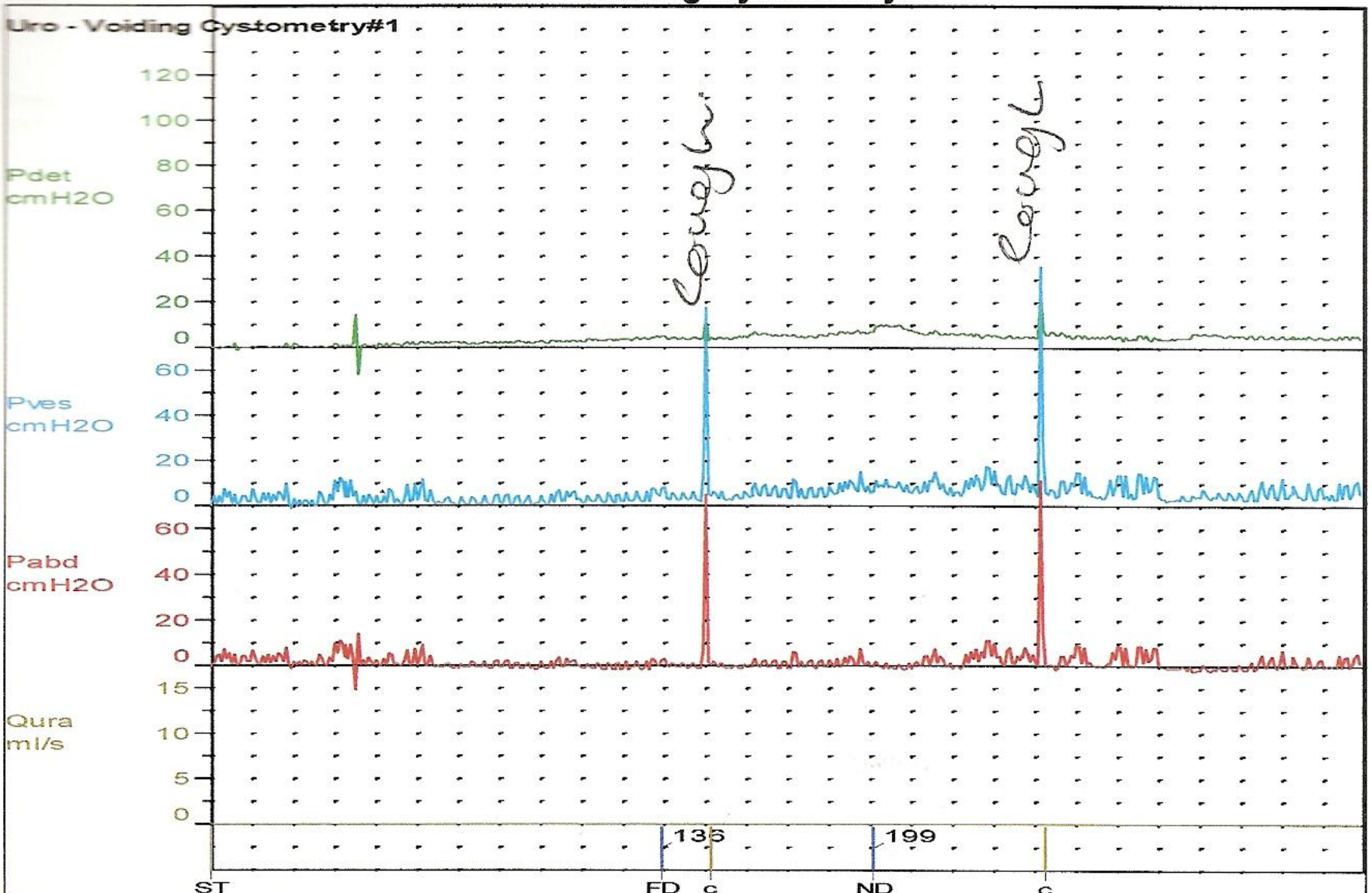


Max Flow Rate	46.1	ml/s	Flow Time	25	s
Voided Volume	474	ml	Average Flow Rate	18.8	ml/s
Delay Time	N.A.	s	Time to Max Flow	6	s
Voiding Time	30	s	Residual	0	

Patient Name [redacted]
Date of Birth

Patient ID [redacted]
Creation Date

Uro - Voiding Cystometry#1



Treatment for SUI:

- Mild-PFE-6 months
- 10 contractions 3 times a day
- Electrical stimulation
- Mod-severe- BURCH colposuspension, slings
- Slings -TVT-retropubic
- -TOT/TVT-O-obturator slings
- -Mini slings

Epidemiology-OAB

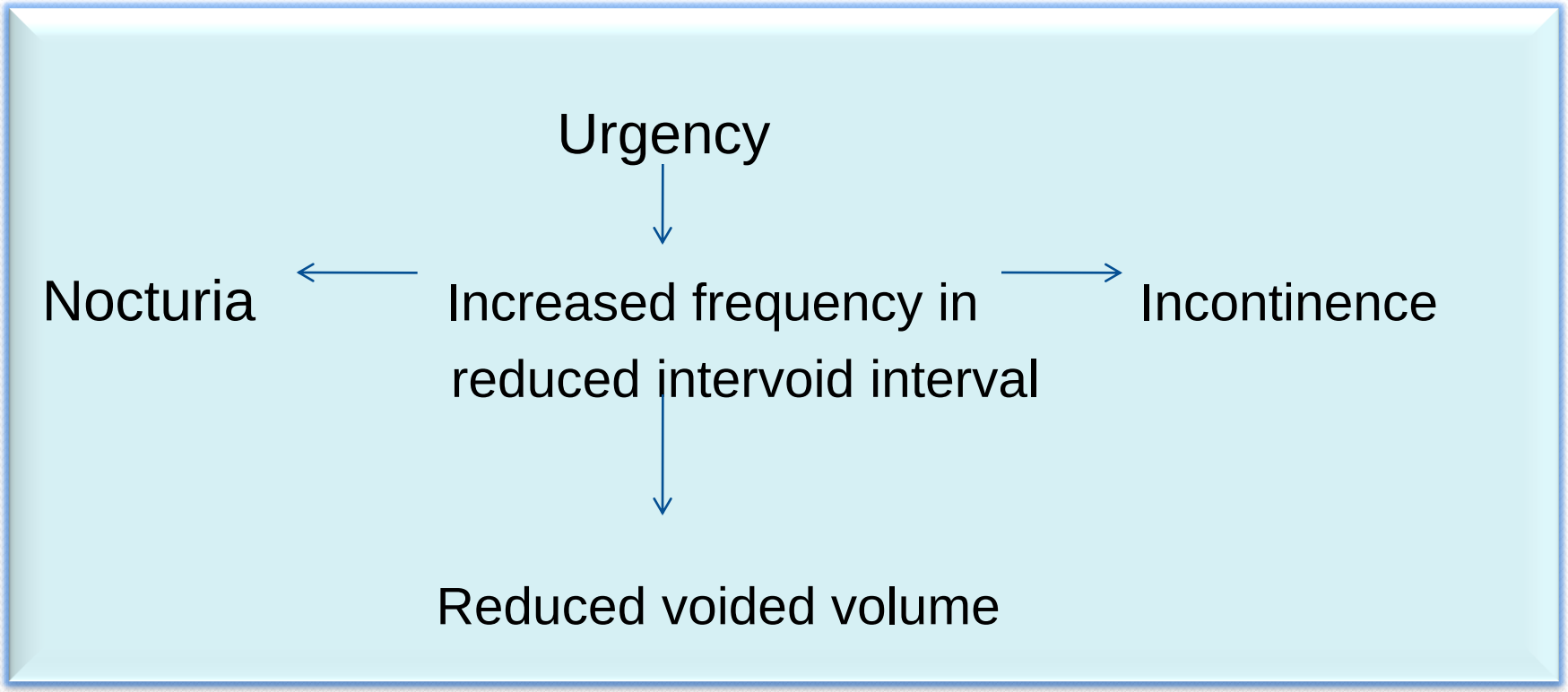
- Chronic medical condition
- Exact prevalence-unknown and underestimated
- Affecting 16.6% US citizens ; 61% elderly British women[1,2,3]
- Economic impact-estimated total costs 26 billion USD
- Negative impact on :physical & psychosocial wellbeing[4]
- Skin infections, depression, sleep disturbance, falls & fractures

1.Stewart WF, et al,World J Urol, 2003
2.Brocklehurst J, Geriatrics, 1972
3.Milsom I, et al, BJU Int, 2001
4.Burgio K, J Am Geriatr Soc, 1999

Theories

- CNS mechanism
- Myogenic
- Myofibroblast activity
- Urothelial afferent function
- Lack of defined relationship between pathophysiologic mechanism and perceived sensation of urgency

Adapted from Chapple et al: The role of urinary urgency & its measurement in OAB syndrome: current concepts and future prospects: BJU Int 2005;95:335-40



Assessing OAB

- Validated self-administered questionnaires[1]
- Validity (does the instrument measure what it intend to measure)
- Reliability (is the instrument reproducible in its measurement)
- Responsiveness (ability to detect a Rx effect or other clinically meaningful change)

1.Barber MD, Int Urogynecol J Pelvic Floor Dysfunct 2007

Questionnaires

- OAB-q- evaluates symptom bother with 8 questions & impact on health related QoL with 28 questions[1]
- OBSS-(OAB symptom score)-7 item Q
  - daytime frequency, nocturia, urgency and urgency incontinence[2]
- POSQ-(Primary OAB symptom Q)-5 item Q[3]
- Newly urgency specific scales developed[4]

1.Coyne KS, Qual Life Res, 2005
2.Homma Y, Urology 2006
3.Matza LS, Neurourol Urodyn 2005
4.Blaivas JG, J Urol 2007

Management

- First line Rx

  Lifestyle modification

  Behavioural modification

  Pelvic Floor Muscle Training

  Bladder training
- Anticholinergics
- Intravesical therapy
- Neuromodulation

Lifestyle modification:

- Fluid reduction
- Avoid water containing fruits
- Last drink 4 hrs before bedtime
- Empty bladder before bed
- Empty bladder before leaving house
- Stop smoking
- Weight reduction

Bladder training

- Aim is to increase voided volumes
- Based on a frequency volume chart
- Supplemented with pelvic floor muscle exercises

Antimuscarinics

OXYBUTYNIN

FESOTERODINE

TOLTERODINE

DARIFENACIN

PROPIVERINE

SOLIFENACIN

TROSPIUM

European Association of Urology European Urology 54(2008) 740-763
Review-Neuro-urology

A Systematic Review and Meta-Analysis of Randomized Controlled Trials with Antimuscarinic Drugs for Overactive Bladder

Giacomo Novara, Antonio Galfano, Silvia Secco, Caolina D'Elia, Stefano Cavalleri, Vincenzo Ficarra, Walter Artibani

Present Systematic Review

- 50 RCT's and 3 pooled analyses
- Efficacy, safety and different doses, formulations, routes of administration
- Peformed in August 2007-Medline, Embase and Web of Science
- Quality of retrieved RCT's were graded-Jadad score

Findings.....

- IR -Tolterodine > Oxybutynin
- ER -Tolterodine = Oxybutynin
- Solifenacin is noninferior to ER Tolterodine, similar rates of AE,

  Constipation > Solifenacin
- Fesoterodine > ER Tolterodine
- Transdermal route-no added advantage

Recommendation:

- Oxybutynin ER
- Tolterodine ER-4mg
- Solifenacin-5-10mg
- Darifenacin-15mg
- Fesoterodine-4mg

BUT

- Short term therapy-12 weeks/ 52 weeks
- Data on efficacy –bladder diaries
- Evidence derived from pharmaceutical companies

Intravesical therapy

- Intravesical oxybutynin-local anaesthetic effect

  Increases bladder capacity and improves symptoms

- Botox-A-selectively blocks Ach
- Neurogenic DO

  Reduction in UUI and allows to retain more urine

  6-9 months

  ??? Number and site of injections and optimal dose

Neuromodulation

- Intractable OAB
- Sacral nerve stim and PTNS
- Electrical impulses to sacral nerve
- Invasive
- Cost
- 5-10 years

Surgery

- Augmentation cystoplasty
- Detrusor myomectomy
- Bladder diversion
- Operative complications
- 10% require ISC

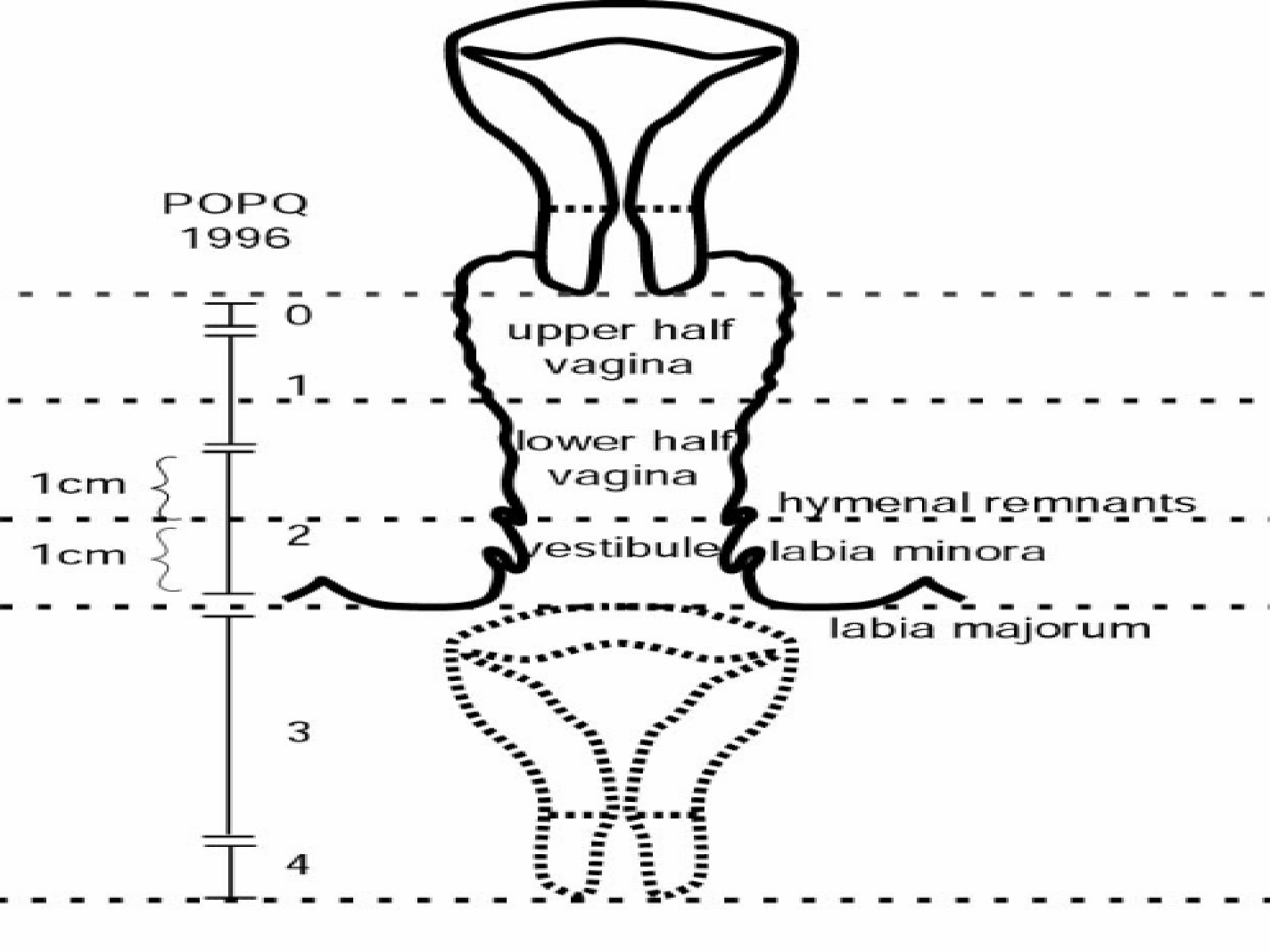
Pelvic organ prolapse:

Examination:

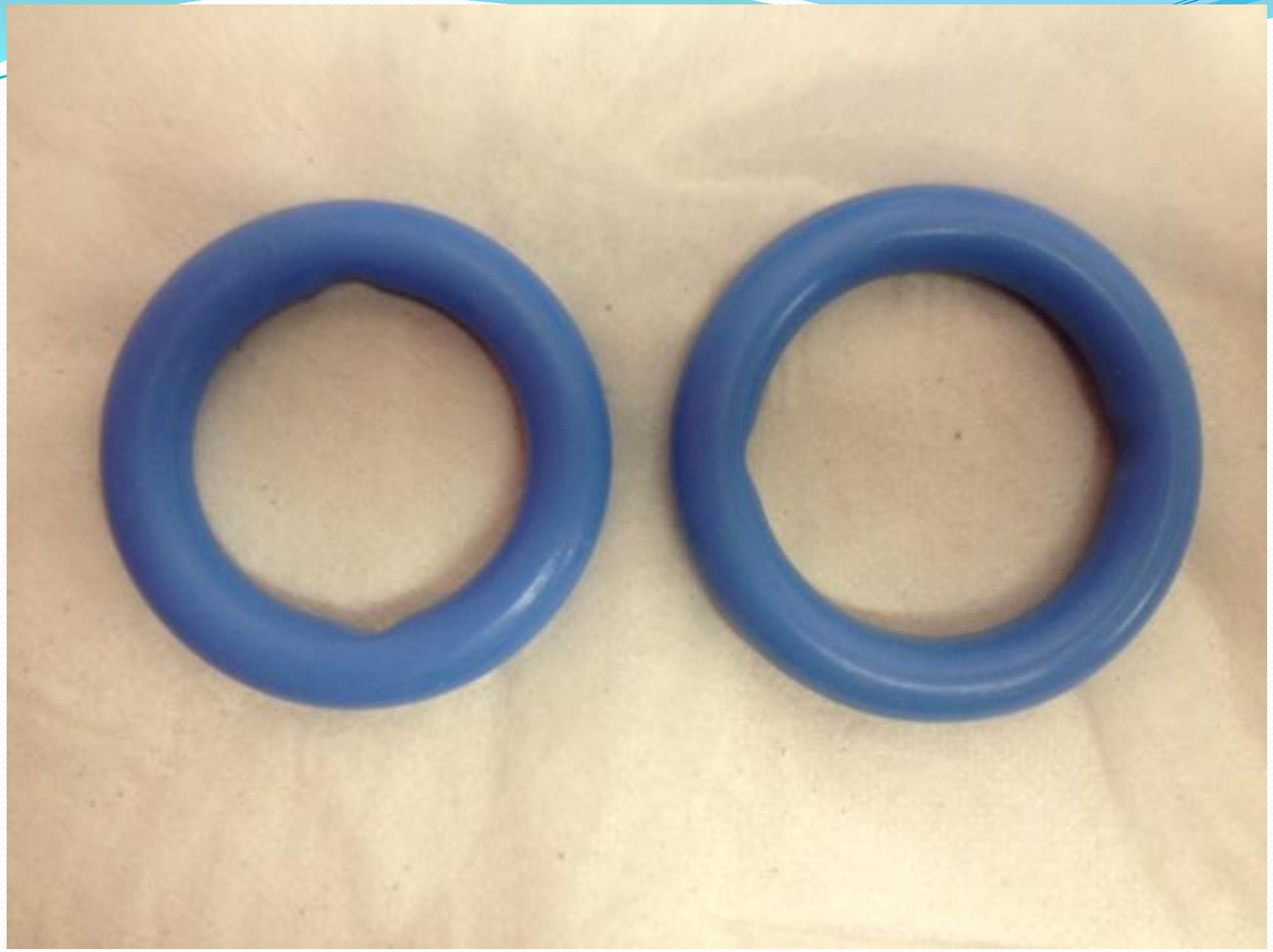
- Empty bladder
- Left lateral or lithotomy position
- When the patient is asked to cough or Valsalva, the perineum should show no downward movement
- Grade degree of prolapse-POP-Q
- Oxford grading for PF muscle strength
- Hymen –point of reference
- Rectal examination-sphincter tone and strength

POP-Q:

- *Stage 0:* No prolapse is demonstrated.
- *Stage I:* Most distal portion of the prolapse is more than 1cm above the level of the hymen.
- *Stage II:* Most distal portion of the prolapse is 1 cm or less proximal to or distal to the plane of the hymen.
- *Stage III:* The most distal portion of the prolapse is more than 1cm below the plane of the hymen.
- *Stage IV:* Complete eversion of the total length of the lower genital tract is demonstrated


POPQ
1996
0
1
2
3
4
1cm
1cm
upper half
vagina
lower half
vagina
hymenal remnants
vestibule
labia minora
labia majorum

Treatment:



Operation:

- Cystocoele-anterior repair
- Rectocoele-posterior repair
- Uterine prolapse- vaginal hysterectomy and Mc Calls
  - Richters procedure
- Vault prolapse-Sacrocolpopexy