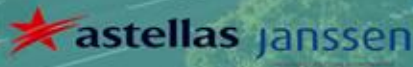


UROWEST^{II}.2026

GP Urological Education Meeting | Western Health

Saturday May 30th 2026 - Footscray Hospital



Oncology referral guidelines: Why, when and how?

Prof Niall Corcoran

Kidney stones for the GP – Metabolic evaluation & surgical treatment options

Ms Janice Cheng

Female urinary incontinence – Slings & neuromodulation: What the GP should know

A/Prof Johan Gani

Scrotal swellings and testicular cancer: When and how to refer

Miss Elaine Lee

LUNCH WITH EXHIBITORS

Tea room behind auditorium (terrace/patio)

Oncology referral guidelines: Why, when and how?

Prof. Niall Corcoran
Urologist

Outpatients

- 3 clinics a week (all at Footscray)
- 8300 appointments/year
- 25-30% new patients
- GU oncology clinic on Monday
 - Med Onc (Shirley Wong, John Lai, Michael Lam)
 - Rad Onc (Tristan Molden-Hauer, Jacki Doughton)
 - PCFA nurse (Olivia Toner)





It
depends

Prostate Cancer

State Referral Guidelines

- Prostate-specific antigen (PSA) greater than 10 nanogram per millilitre
- Age 50 to 69 years with a repeat PSA test is:
 - 5.5 nanogram per millilitre (regardless of the with a free-to-total ratio)
 - between 3.0 nanogram per millilitre and 5.5 nanogram per millilitre, with a free-to-total ratio less than 25 per cent
- Age 45 to 69 years with an increased risk of prostate cancer whose PSA is between 2.0 nanogram per millilitre and 3.0 nanogram per millilitre, with a free-to-total less than 25 per cent
- A significant PSA rise where the PSA has previously been low
- Palpable abnormality in the prostate on digital rectal examination
- Bone pain with suspected or confirmed prostate cancer.

Information that must be provided:

- Initial PSA result of concern
- Repeated PSA result 1 to 3 months after this initial test
- Midstream urine microscopy culture sensitivities.

Provide if available:

- Urinary tract ultrasound.

Workup of ePSA

- Standard referral to urology
- Not time critical but try to see within 30 days
- DRE with urologist
- MRI
- Prostate biopsy if significant PIRADS lesion
- Consider Bx if:
 - Positive FHx
 - PSA density >0.15 ng/ml
 - Abnormal DRE

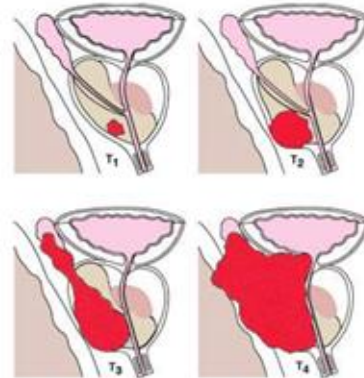
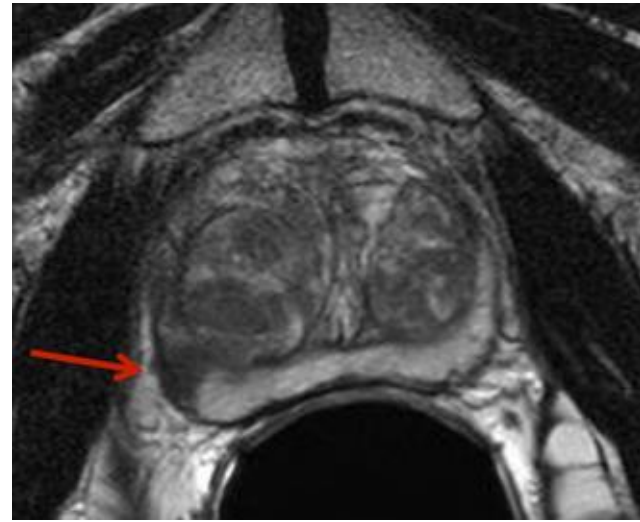
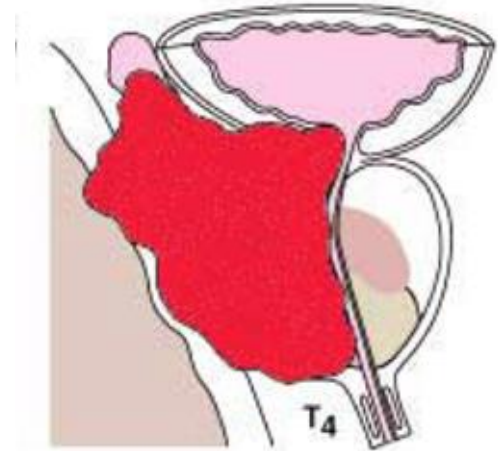


Figure 1.4: Schematic of staging in prostate cancer⁴⁰.

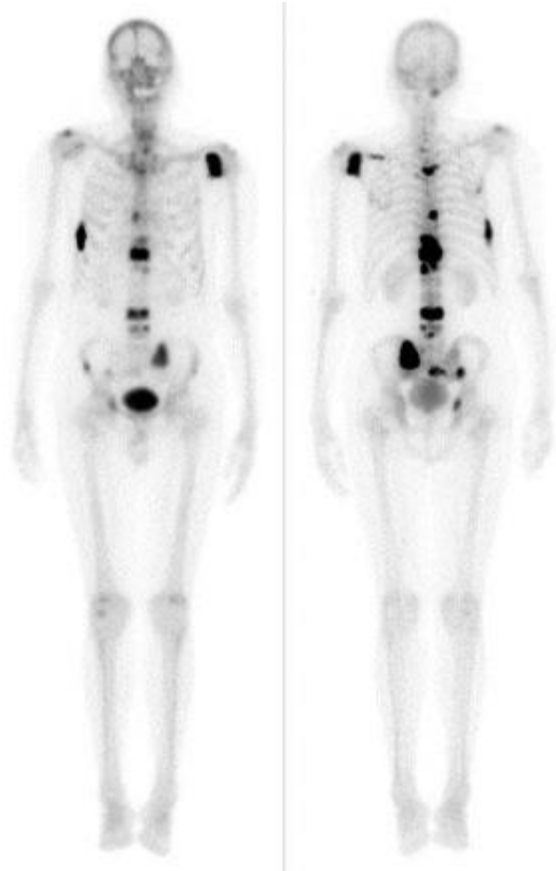
Locally Advanced Disease

- Sudden onset LUTS in young patient
- Perineal pain / Bowel Sx
- 'Rock hard' prostate on DRE
- Often low PSA
- ED if:
 - Pain control
 - Hydronephrosis/renal impairment
- Urgent clinic request



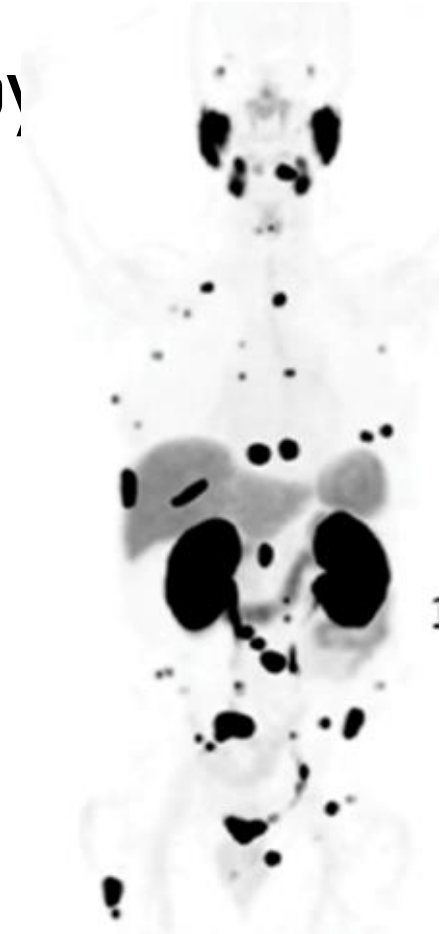
Metastatic Disease

- PSA > 50
- Consider WBBS
- ED if:
 - Uncontrolled pain
 - Neurology
- Urgent clinic referral
(review within 30 days)



Post Definitive Local Therapy

- Post surgery, any detectable PSA is abnormal
- Most not clinically meaningful
- Urgent referral
 - PSA recurrence and symptoms
- Post RT
 - Recurrence 'Nadir +2'
 - More specific for prostate cancer mortality
 - If life expectancy >10 yrs, semi-urgent referral for consideration of salvage Tx



Bladder Cancer

- 'Time to diagnosis' and 'time to definitive treatment' both impact overall survival
- Gross haematuria – 10-20% have cancer
- M/S haematuria – ~0.1%
- Direct triage to haematuria clinic - aim to fast-track workup (flexi cystoscopy)
- Need:
 - MSU
 - Upper tract imaging

Criteria for referral to public hospital specialist clinic services

- Any visible haematuria.
- Persistent microscopic haematuria: at least 2 episodes confirmed through midstream specimen of urine collected at least a week apart.
- Microscopic or macroscopic haematuria in the absence of a urinary tract infection.

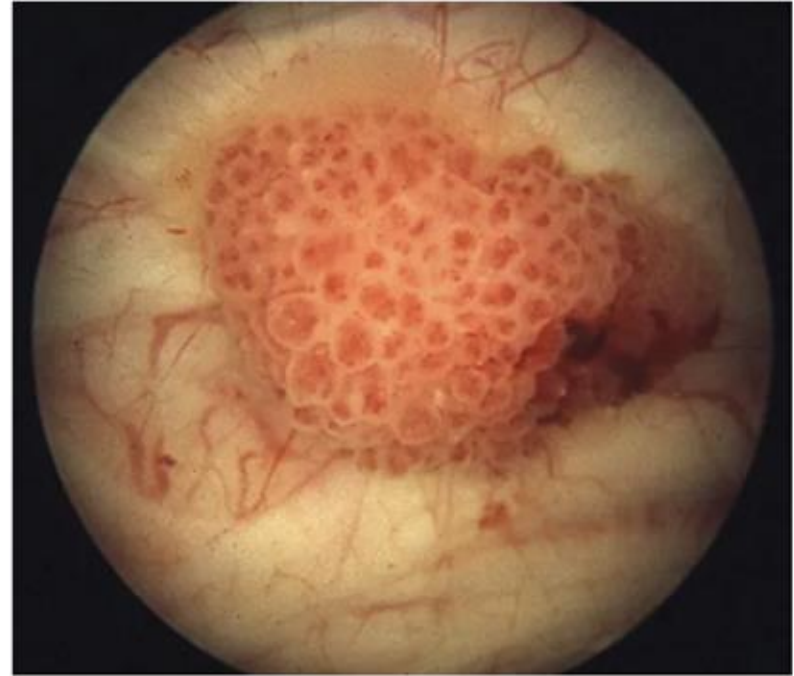
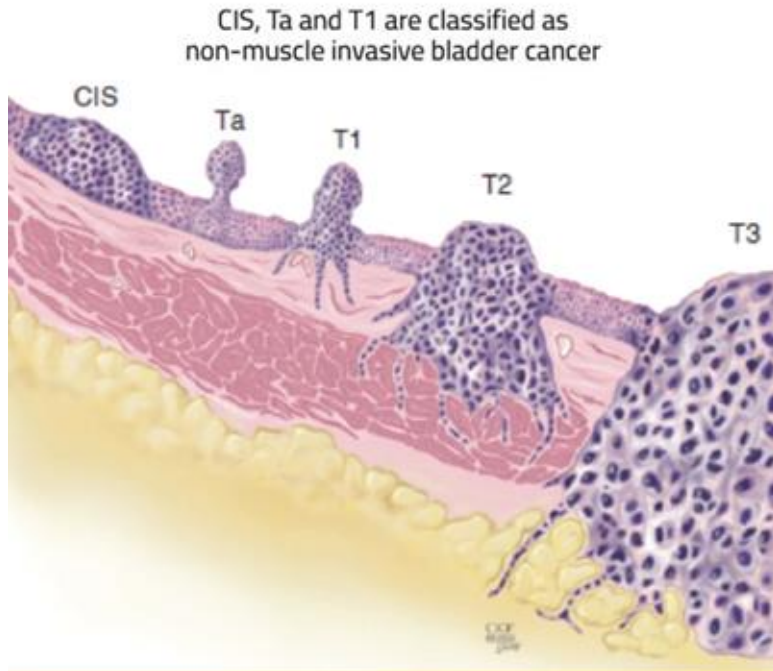
Information that must be provided:

- Midstream urine microscopy culture sensitivities.
- Creatinine and electrolytes.
- Urinary tract ultrasound or CT intravenous pyelogram results.

Provide if available:

- Urine cytology results.

If lesion on imaging -> GA cystoscopy



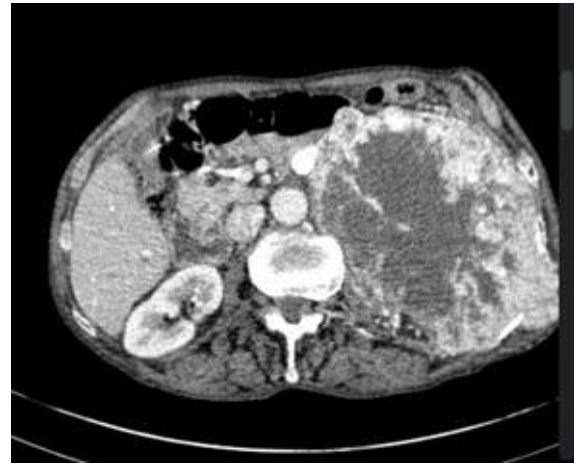
Renal Masses

- Most now found incidentally
- Most 'small renal masses' < 4cm
 - ~30% benign
 - ~70% malignant
- Metastatic potential very low
- Many undergo surveillance rather than treatment
- Non urgent referral



Urgent Referrals

- Symptomatic
 - Pain
 - Haematuria ?UC of upper tract
- Renal mass > 5 cm
- Invasion of renal vein or IVC
- Evidence of metastatic disease

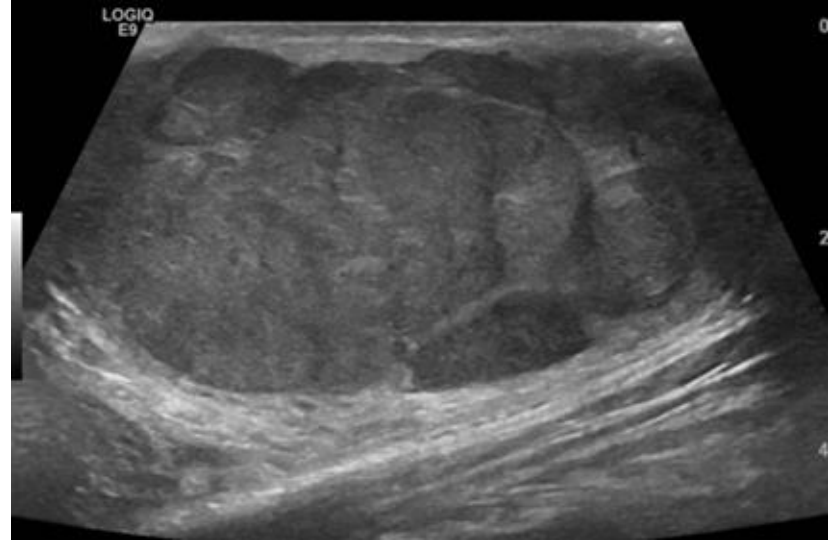


Testicular Cancer

Immediately contact the urology registrar to arrange an urgent urology assessment for:

- Suspected or confirmed testicular tumour.

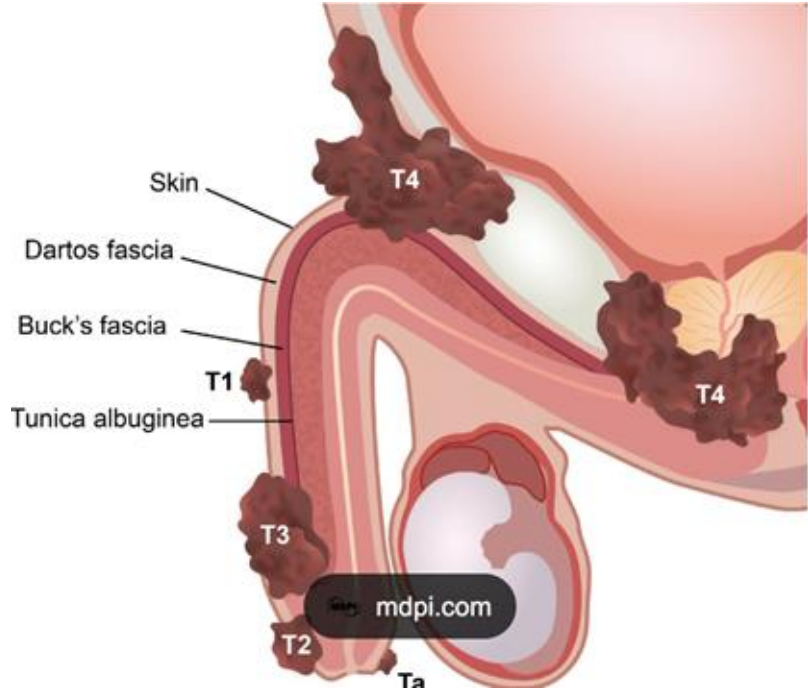
**Rapid doubling
time**



**Scrotal US
Tumour
Markers**

Penile Cancer

- Penile lesion
- Rash not responding to topical steroids
- Usually try to see quickly
 - Make a diagnosis
 - Accurately stage
 - Plan definitive treatment



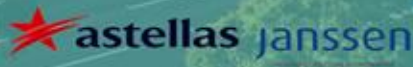
To escalate:

- Non-critical: email (niall.corcoran@wh.org.au)
- Critical – call via switch

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Kidney stones for the GP – Metabolic evaluation and surgical treatment options

Janice Cheng

MBBS BMedSci FRACS (Urol) CCPU

0421865513

Overview

- ▶ Develop an understanding of the metabolic considerations when a patient presents with stone(s)
 - Conditions to consider
 - Possible investigatory pathways
 - Examples of treatment considerations in specific conditions
- ▶ Recognize the different surgical treatment options and some pointers regarding what you could offer patients presenting with stent symptoms

Why have I formed a stone and how do I prevent another one?



- ▶ Dehydration/
Warm environments
- ▶ Obesity/
Metabolic syndrome
- ▶ Salt

Initial evaluations

- ▶ Urine MCS - pH
 - organism(s)
- ▶ Uric acid / serum urate
- ▶ Serum Calcium
- ▶ Stone analysis
- ▶ CTKUB >> Additional Xray can help evaluate stone density / gauge stone type

Why evaluate?

- ▶ 25% risk of having another one in 5yrs, after their first stone presentation
- ▶ 50% risk of recurrence in those with previous stones

Ferraro PM et al. Risk of recurrence of idiopathic calcium kidney stones: analysis of data from the literature. J Nephrol. 2017;30:227-233. [PMID: [26969574](#)]
doi: [10.1007/s40620-016-0283-8](#)

Who to evaluate further?

- ▶ Young
- ▶ Solitary kidney
- ▶ Staghorn(s)
- ▶ Significant fHx
- ▶ Recurrent urolithiasis
- ▶ Stone types - calcium oxalate dihydrate
 - calcium phosphate (brushite or non-infective apatite stones)

24hr urinary...

- ▶ Volume
- ▶ pH
- ▶ Calcium
- ▶ Oxalate
- ▶ Urate
- ▶ Citrate

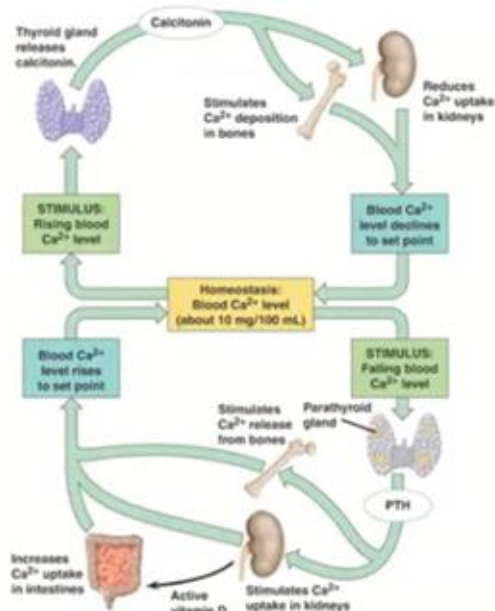
- ▶ Cystine

+/- serum PTH/VitD etc.

What existing/new conditions might we find?

- ▶ GI issues - bypass; IBD etc
- ▶ Hyperparathyroidism
- ▶ VitD excess
- ▶ PCKD
- ▶ MSK
- ▶ Sarcoidosis
- ▶ Nephrocalcinosis
- ▶ Cystinuria (rare)
- ▶ dRTA (rare)
- ▶ Primary hyperoxalouria (rare)

Calcium



- ▶ Regulated by PTH and Calcitriol (think of this in granulomatous diseases)
- ▶ Acidosis, high salt intake, and animal protein intake increases hypercalciuria
- ▶ Loop diuretics increases, while thiazides decreases calcium excretion
- ▶ Stone types to watch out for
 - calcium oxalate dihydrate
 - calcium phosphate (brushite or non-infective apatite stones)

Uric acid stones, gout, and dissolution?

- ▶ Stones composed of uric acid (not sodium or ammonium urate) can be dissolved by alkalinisation
- Potassium citrate or sodium bicarbonate
- pH adjusted to 7.0–7.2 (higher pH promotes calcium phosphate stone formation)
- Complete or partial dissolution in 80.5%, a discontinuation rate of 10.2% and 15.7% requiring further intervention*

***Ong, A., et al.** Selection and Outcomes for Dissolution Therapy in Uric Acid Stones: A Systematic Review of Literature. Curr Urol Rep, 2023. 24: 355. <https://www.ncbi.nlm.nih.gov/pubmed/37079196>

Most important species of urease-producing bacteria

Obligate urease-producing bacteria (> 98%)

- *Proteus spp.*
- *Providencia rettgeri*
- *Morganella morganii*
- *Corynebacterium urealyticum*
- *Ureaplasma urealyticum*

Facultative urease-producing bacteria

- *Enterobacter gergoviae*
- *Klebsiella spp.*
- *Providencia stuartii*
- *Serratia marcescens*
- *Staphylococcus spp.*

CAUTION: 0–5% of *Escherichia coli*, *Enterococcus spp.* and *Pseudomonas aeruginosa* strains may produce urease.

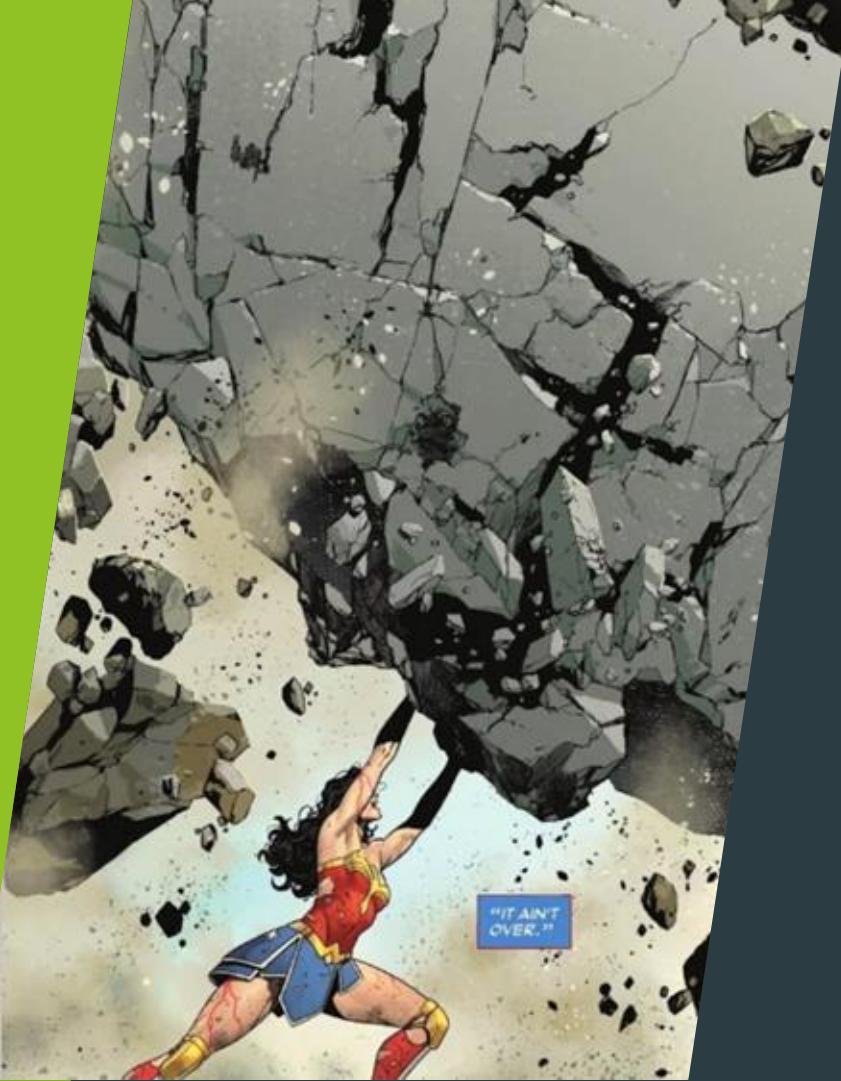
Cystine stones

- ▶ Frequently recurrent stone formations
- ▶ Siblings should be investigated for cystinuria
- ▶ Alkalinisation to a pH of 7.5-8
- ▶ Hyperhydration of > 3.5L/d (aim for >3L urine production per day)



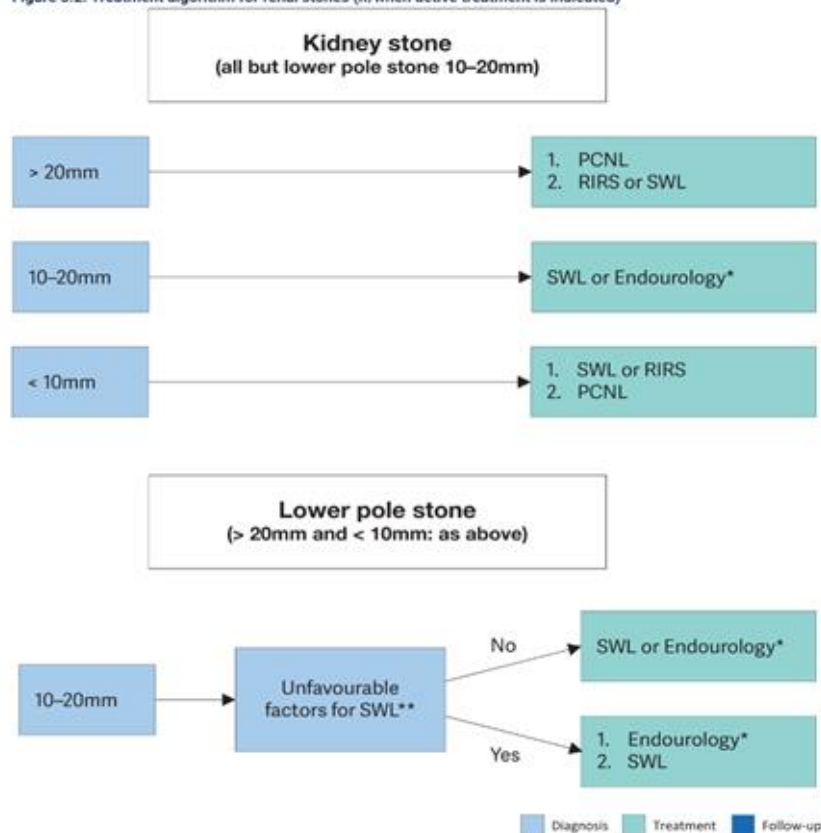
Medications to consider

Active compounds crystallising in urine	Substances impairing urine composition
• Allopurinol/oxypurinol • Amoxicillin/ampicillin • Ceftriaxone • Quinolones • Ephedrine • Indinavir and other HIV-protease inhibitors • Magnesium trisilicate • Sulphonamides • Triamterene	• Acetazolamide • Aluminium magnesium hydroxide • Ascorbic acid • Calcium • Laxatives • Losartan • Methoxyflurane • Orlistat • Vitamin D • Topiramate • Zonisamide



Now the
fun stuff!

Figure 3.2: Treatment algorithm for renal stones (if/when active treatment is indicated)



* The term 'Endourology' encompasses all PCNL and URS interventions.

PCNL = percutaneous nephrolithotomy; RIRS = retrograde intrarenal surgery; SWL = shock wave lithotripsy;

URS = ureteroscopy.



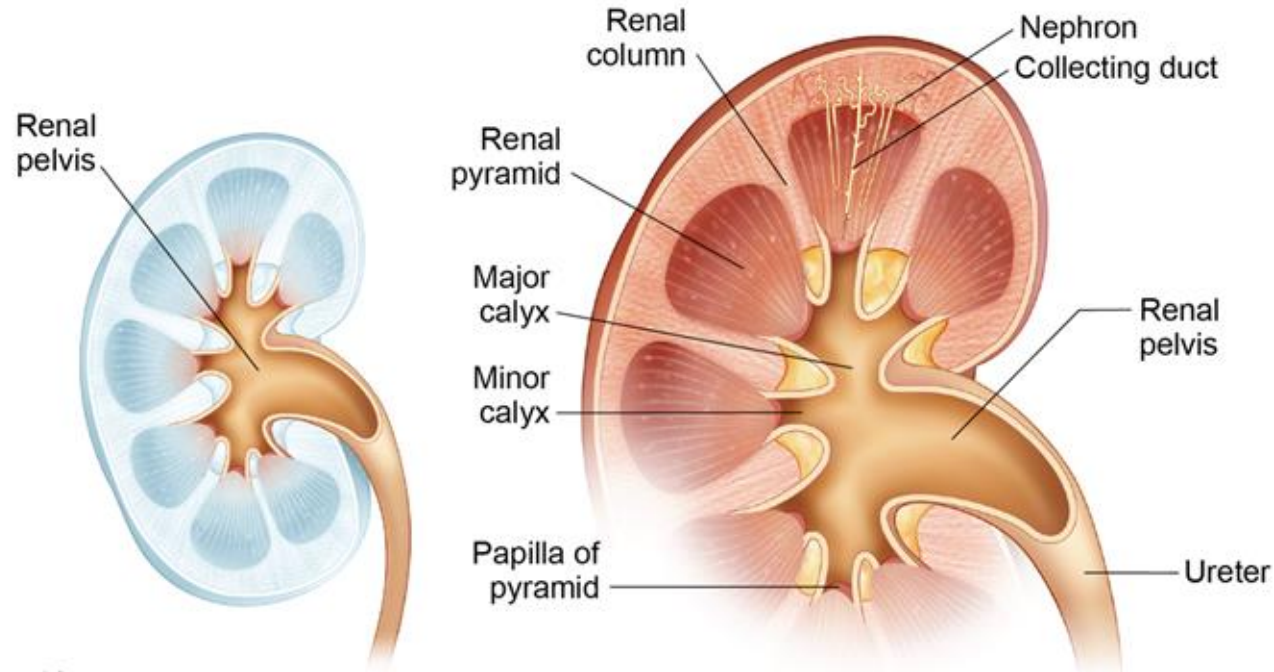
ESWL

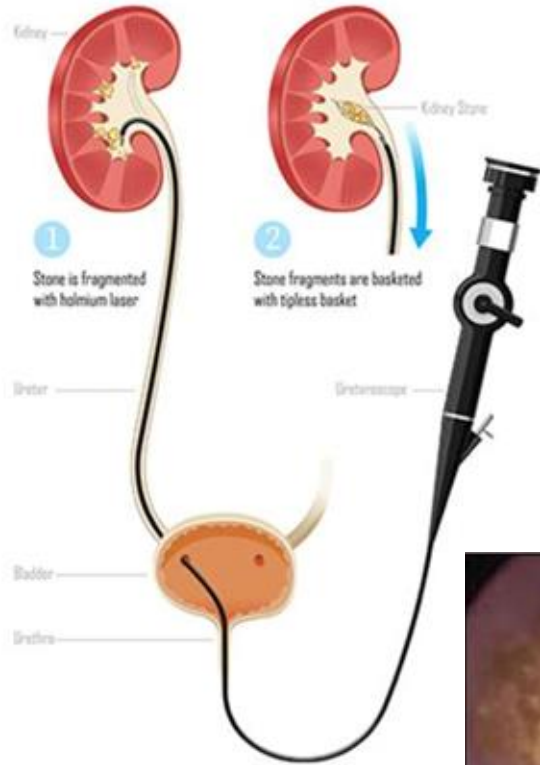
► Contraindications

- Pregnancy
- Coagulopathy
- Aortic aneurysms
- Severe untreated hypertension
- Infection
- Distal obstruction

*Note there's a limitation due to pt body habitus too

Location location location





Retrograde Intrarenal Surgery (RIRS)

Flexible Ureteroscopy



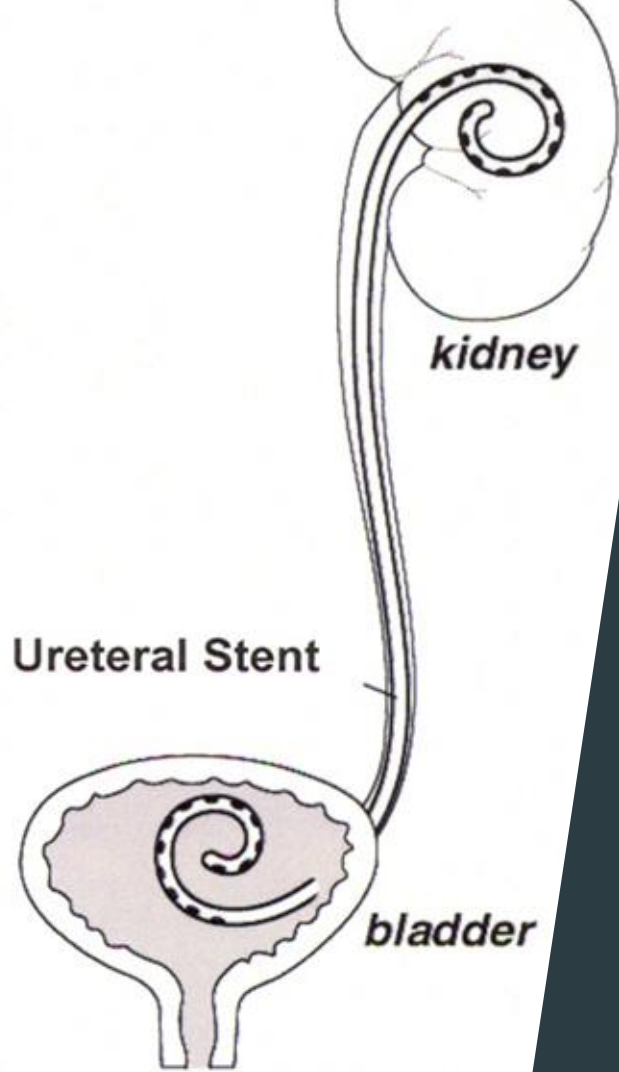
And now we can apply suction!



PCNLs

- ▶ Mini and standard equipments available
- ▶ Variety of energy sources
- ▶ Combined approaches also possible





What about stents?

- ▶ Pain?
- ▶ OAB?
- ▶ Strings?



Other surgical options

- ▶ Open, lap or robotic approaches to stones
 - Pyelolithotomies and nephrolithotomies
 - Stone extraction concurrent to pyeloplasties
 - Nephrectomy

Thank you

Janice Cheng

MBBS/BMedSci FRACS (Urol) CCPU



Enteric hyperoxalouria

- ▶ Ca supp
- ▶ Reduce fat intake
- ▶ Reduce oxalate intake

Western Health

Boston
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GP360
GENERAL PRACTICE
EDUCATION

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mayne pharma

DEVICE
TECHNOLOGIES



Bayer



LTR Pharma



immunotek



IPSEN
Innovation for patient care



astellas

janssen



Pacific Edge
CANCER DIAGNOSTICS



Cipla

U R O W E S T ^{II} • 2 0 2 6

Presented by the Department of Urology, Western Health

Slings and Neuromodulation for Urinary Incontinence

A/Prof Johan Gani

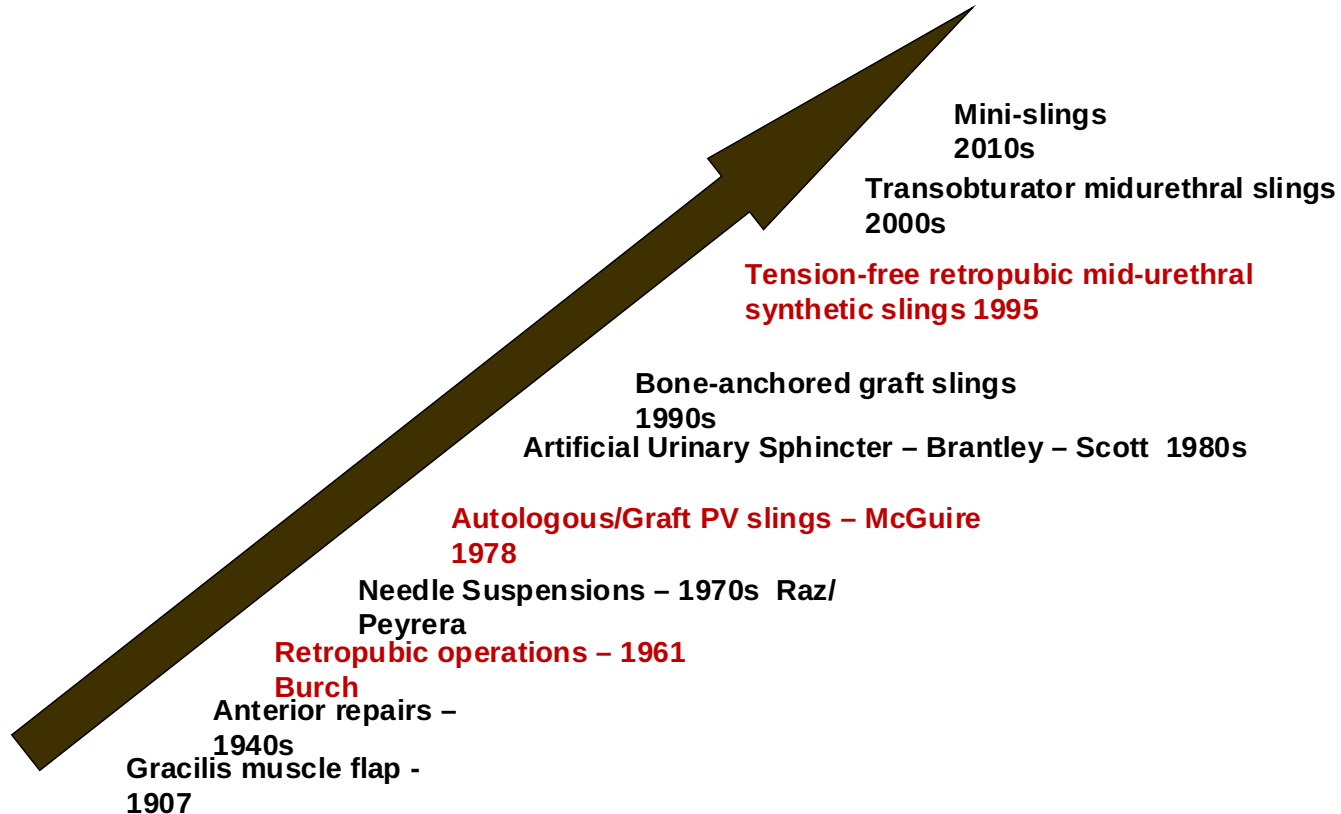


Western Health

- Slings – stress urinary incontinence
 - Australia trends
 - Treatment options
 - Results
- Neuromodulation – overactive bladder and urinary retention
 - Sacral neuromodulation (SNM)
 - Percutaneous Tibial nerve stimulation (PTNS)
 - Transcutaneous Tibial nerve stimulation (TTNS)

SUI Surgery

Historical Perspectives 1907 – 2010s



History of synthetic MUS surgery

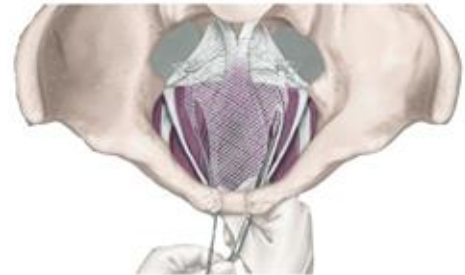
- 1995: modern mesh mid urethral sling (MUS)
 - Tension free vaginal tape (TVT, Ulmsten)
 - Gold standard
- Mid 2000s:
 - Rapid uptake of various synthetic MUS
 - US-FDA classification as Class II (demonstrate new device is comparable to existing devices)
- 2010:
 - 75,000 POP mesh repair and 208,000 mesh for SUI surgeries¹



1. U.S. Food & Drug Administration. FDA safety communication: update on serious complications associated with transvaginal placement of surgical mesh for pelvic organ prolapse. July. 2011; 13:2011.

FDA warnings

- 2008, 2011:
 - FDA warning: regarding the “serious complications associated with transvaginal placement of surgical mesh in repair of POP and stress urinary incontinence”
- Early 2016:
 - FDA reclassified transvaginal mesh for POP as Class III device
 - This reclassification did not include mesh for SUI
- April 2019:
 - FDA banned all transvaginal POP mesh



Media

- Big payouts and sensationalization in the media:
 - Damning image for all TVM whether they are used for POP or SUI
 - More patients became aware of the issues
- But media is **not always accurate**:
 - Study¹ on top 30 TVM videos on YouTube™
 - Majority had marketing info, very few had reliable sources of info
 - Median rating of 'poorly understandable' and 'unlikely to recommend to patients'
- **Patients have poor understanding**:
 - Only 25% of pts had in depth education by a medical professional²
 - Only 12% understood difference in mesh use in SUI vs POP repair³
 - 33% stated that legal ads influenced their opinion³

Surgical mesh information on YouTube™: Evaluating the usage and reliability of videos for patient education
CUAJ • July 2022 • Volume 16, Issue 7
© 2022 Canadian Urological Association

Garson Chan^{1,2*}, Emma Yanko², Liang Qu^{2,4}, Ariel Zilberlicht⁶, Deb Karmakar⁶, Athina Pirpiris⁷, Johan Gani^{7,8}

1. Chan G, Yanko E, Qu L, Zilberlicht A, Karmakar D, Pirpiris A, Gani J. Surgical mesh information on YouTube™: Evaluating the usage and reliability of videos for patient education. *awaiting review*

2. Brown LK, Fenner DE, Berger MB, et al. Defining patients' knowledge and perceptions of vaginal mesh surgery. *Female Pelvic Med Reconstr Surg* 2013;19:282-7

Impact on sling use

- In Australia, 3 phases¹:

- Uptake Phase (2000 – 2006):**

- 2002: MUS had become the most common SUI procedure

- Stable Phase (2006 – 2017)**

- 2009: MUS made up 85.5% of all SUI surgeries²

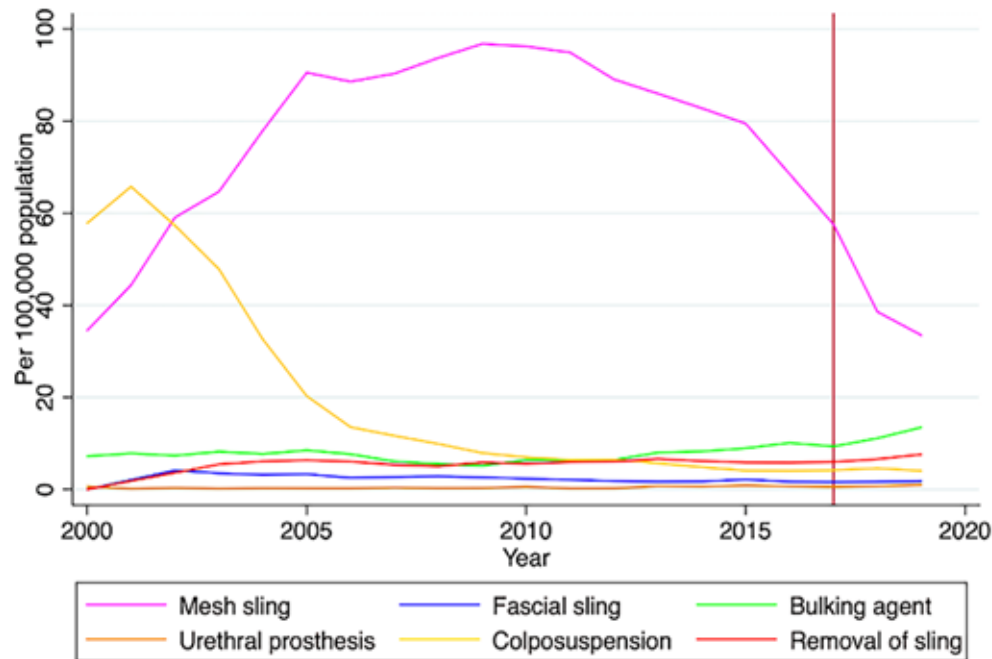
- Post-Class Action Phase (2017 – 2019)**

- 2017:
 - Senate Inquiry into safety of TVM
 - Class Action Lawsuit against J&J

What a mesh! An Australian experience using national female continence surgery trends over 20 years

Aoife McVey¹ · Liang G. Qu¹ · Garson Chan^{1,2} · Marlon Perera^{1,3} · Janelle Brennan⁴ · Eric Chung³ · Johan Gani¹

Fig. 1 Time series of continence procedures in Australia. The rates of continence-related procedures throughout Australia from 2000 to 2019 have been demonstrated, according to rate per 100,000 persons. Year 2017 has been indicated (vertical red line) to represent time of class action



- McVey A, Qu L, Chan G, Perera M, Brennan J, Chung E, Gani J. What a mesh! An Australian experience using national female continence surgery trends over 20 years. World Journal of Urology, Apr 2021.
- Lee J, Dwyer PL. Age-related trends in female stress urinary incontinence surgery in Australia - Medicare data for 1994-2009. Aust N Z J Obstet Gynaecol 2010;50:543-9.

SUI surgery in Australia

- From 2008 to 2018¹:
 - MUS use decreased from 5729 to 3127 per year
 - Bulking agent doubled from 304 to 698 per year
 - Total no. of SUI surgery decreased from 6812 to 4279
 - Age specific peak rate for MUS and Burch changed from 55-64 to 65-74 (patients are deferring surgery to later in life)

1. Mathieson et al. Stress urinary incontinence in the mesh complication era: current Australian trends. BJUj July 2021;128(1);95-102

Treatments for Female SUI

• Conservative

- Pelvic Floor Exercises
 - improved in up to 75%
- Lifestyle changes
 - Weight loss
 - Treat constipation
 - Reduce caffeine intake
 - Stop smoking

• Surgical

- Urethral bulking agent
- Midurethral Slings
 - Minimally invasive
 - Day-only setting
- Pubovaginal fascial sling (PVS)
- Artificial urinary sphincter
- Colposuspension



- **MUS is the recommended** surgical treatment for SUI:
 - Effective in the short and medium term
 - Recurrence rate is 1 in 10
 - **Serious complications are rare**
 - **Long term pain can be difficult to treat**
- PVS:
 - Recurrence rate is 1 in 10
- Colposuspension:
 - Recurrence rate is up to 3 in 10
- Bulking agent:
 - Not a first line option
 - Success rate 4 in 10 after 2 years
 - May need repeat injections

Making a choice: Patient and clinician factors

- Patient factors:

- Severity and degree of bother of SUI
- Pt expectations, surgical outcomes
- Recovery
- Complications
- Risk acceptance

- Clinician factors:

- Personal training and experience
- Patient's choice
- Patient factors (BMI, anatomy, UDS, severity)
- Published outcomes

Treatment options

- Role for MUS:

- Older pts
 - Faster recovery, minimally invasive
- Morbidly obese
 - Less operative time, less morbidity
- Battle scarred abdomen

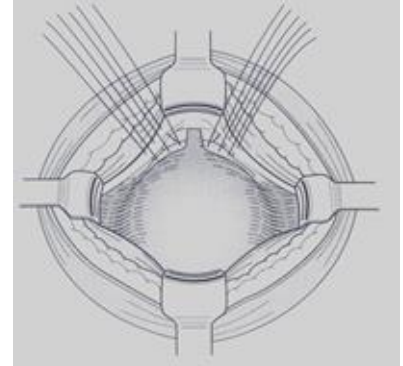
- Role for bulking agents

- Frail patients
- Mild SUI
- SUI treatment failures
- Irradiated
- Those who want fast recovery, minimal complications
- Willing to accept lower success rates and need for repeat injection



- Role for Burch Colposuspension

- Slightly higher failure rate
- Complications can be hard to treat
 - Bladder obstruction
 - Salvage surgery's risk of bladder damage
- Immunocompromised¹



1. Medina et al. Evaluation and Surgery for Stress Urinary Incontinence: A FIGO Working Group Report. Neurourology and Urodynamics 36:518–528 (2017)

The case for Fascial sling (PVS)

- PVS has similar excellent outcomes to MUS:
 - Primary and salvage SUI
 - Urethral hypermobility and ISD
- Patients are asking about mesh complications:
 - Pts are more willing to accept longer recovery from PVS
 - 'Short term pain, long term gain'
- Bulking agent and Colposuspension have inferior results to PVS/MUS

Optimising the tension of an autologous fascia pubovaginal sling to minimize retentive complications

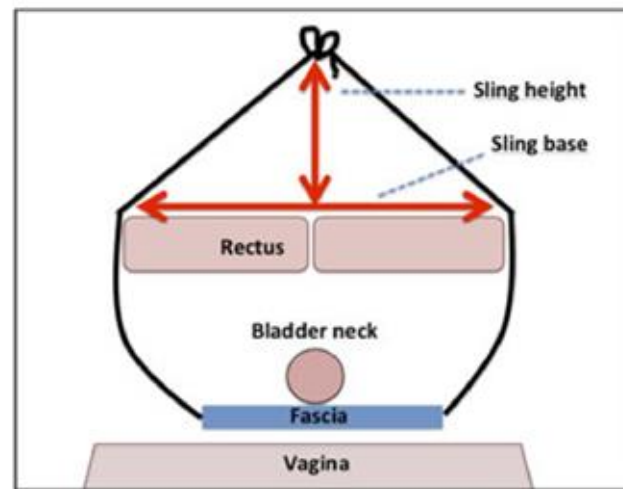
Patrick D. Preece¹ | Garson Chan² | Helen E. O'Connell¹ | Johan Gani^{1,2}

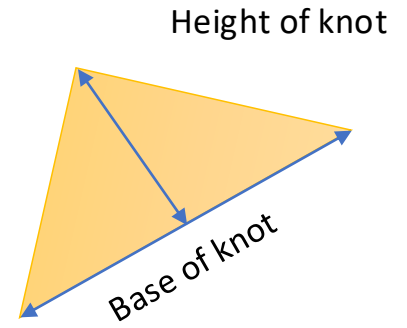
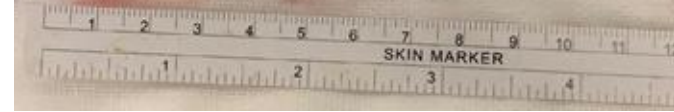
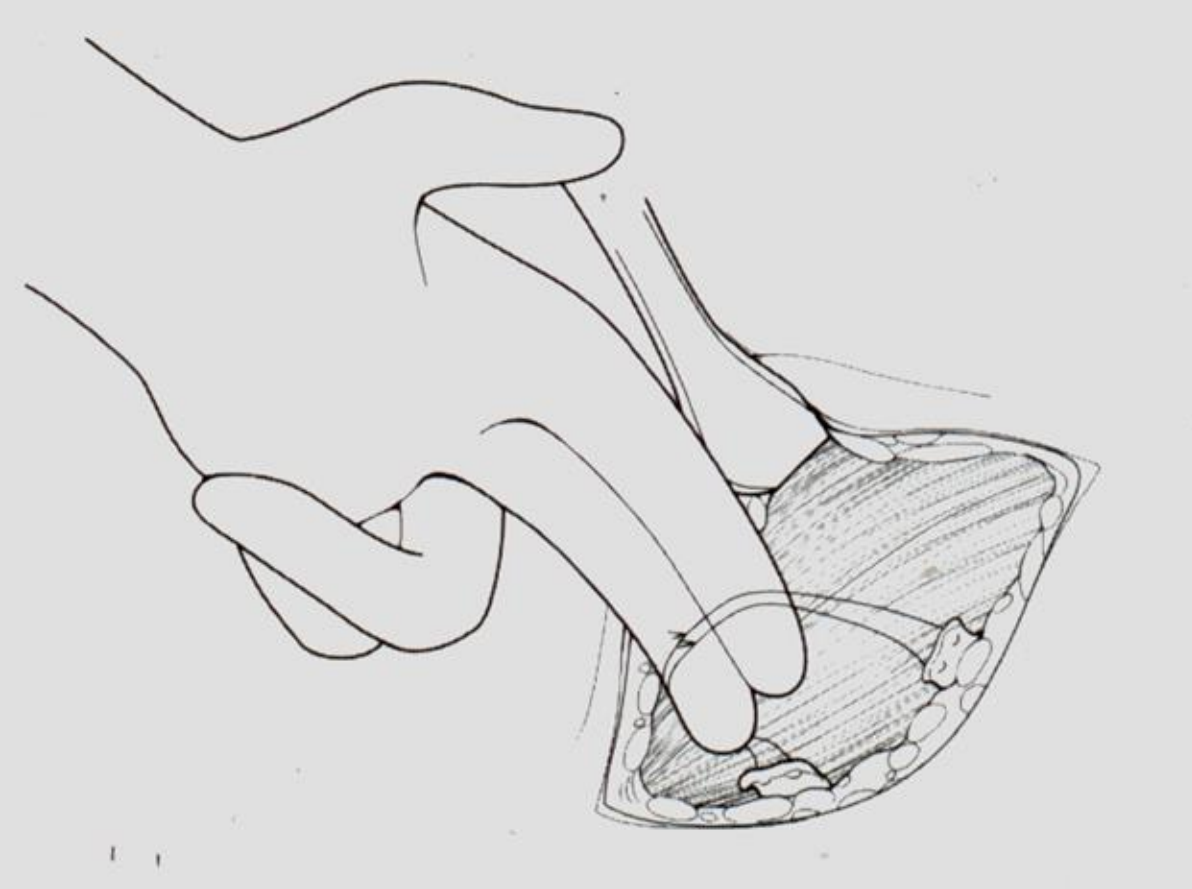
- Prospective study over 24 months (Jan 16 – Jan 18):

- 51 patients – 2 surgeons
- Lax sling dimensions (height and base) tented over rectus measured intra-op
- Other variables: BMI, VLPP, Age, PdetQmax

- Correlated to retentive complications:

- Need for ongoing ISC
- Sling division / loosening





HEIGHT OF KNOT correlates to retentive complications

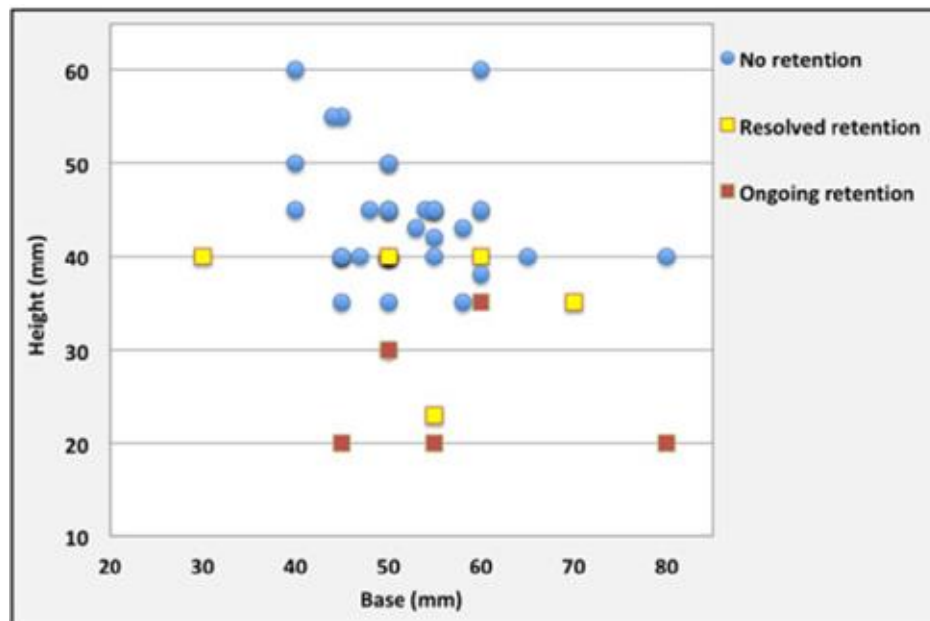


FIGURE 3 Distribution of measured sling dimensions

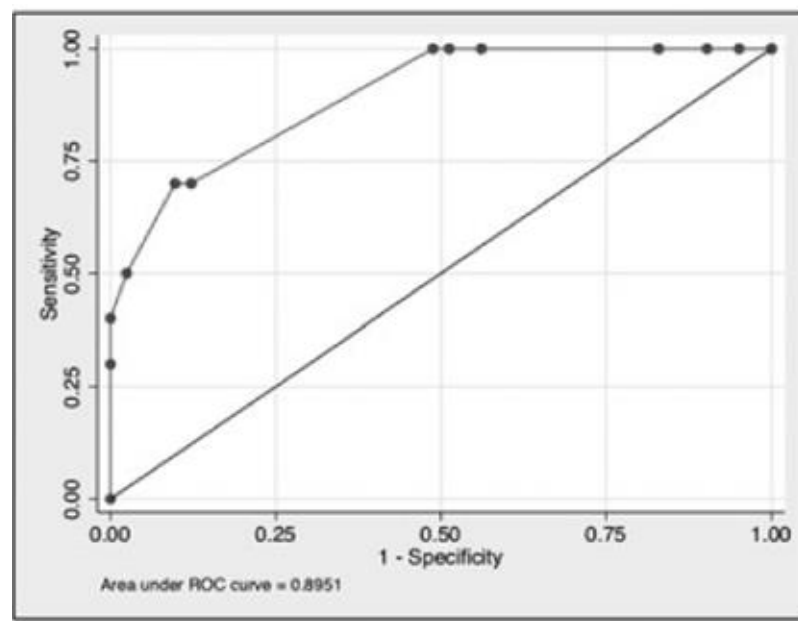
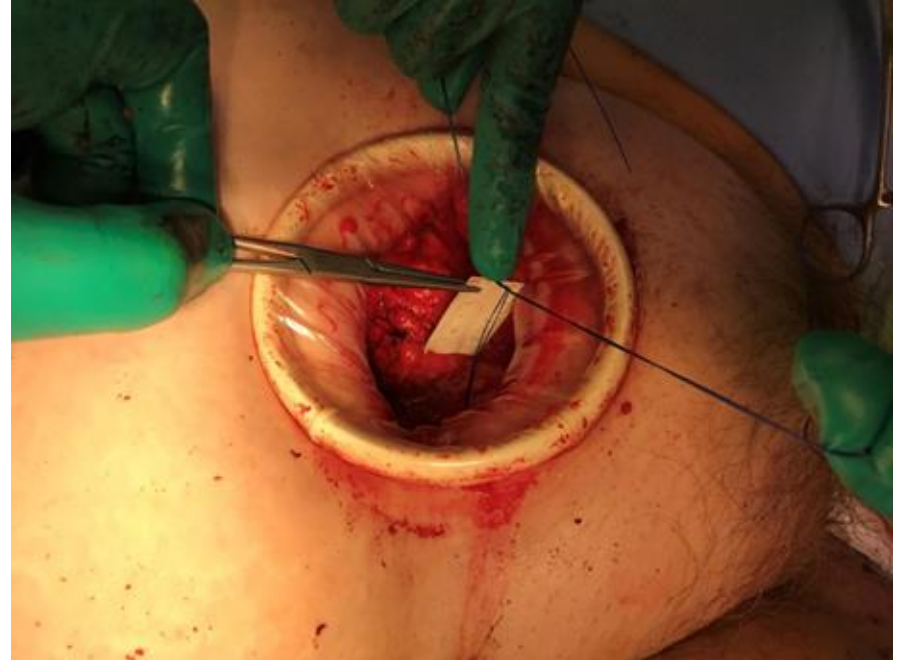


FIGURE 4 ROC Curve of lax sling height and urinary retention

PVS Tensioning technique

- A wide range of sling heights between 20 to 60mm were observed, using the traditional method of tensioning
 - This demonstrates the inherent difficulty of producing consistent tension with this method
- Sling height of up to 60mm did not compromise the success rate of the surgery
- So now we tie our knot between 40mm and 60mm for most of our patients



Summary re: Slings

- Women are worried about mesh complications, and delaying treatment
- Synthetic MUS have been driven mostly out of the market
- Safe, non mesh treatments are available for women with SUI
- The pubovaginal fascial sling is effective and durable

Sacral Neuromodulation

Case 1

- 49 yo woman
 - Urinary frequency, urgency+++, urge leakage, nocturia x3
 - Duration 5 years
- Vesicare 10mg – tried for 6m, partially worked
- Failed Betmiga 50mg/d
- PH: HTN, 2x C section

Case 1

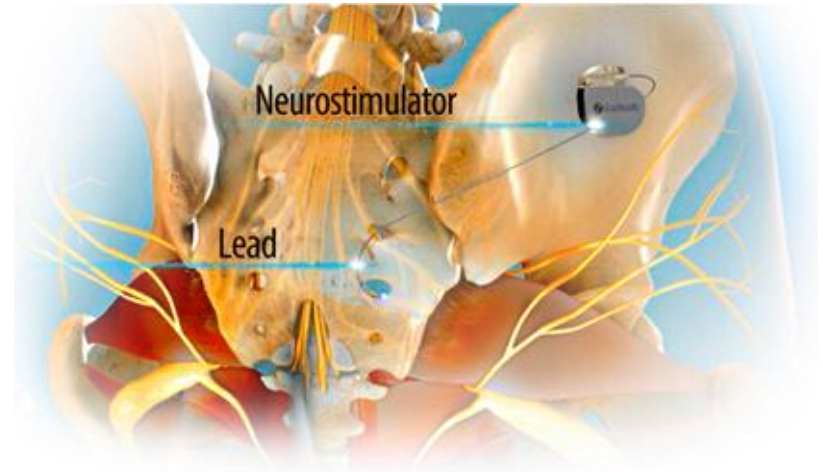
- Urodynamics:
 - Filling phase: Detrusor overactivity (DO) with leak
 - Voiding phase: Normal
- Trial of sacral neuromodulation vs Botox bladder injection

Sacral Neuromodulation - bladder

- Under the Medicare Benefits Schedule (MBS), patients with:
 - Overactive bladder or
 - Non obstructive urinary retention
- that has not improved with medical or conservative treatment for at least 12 months, are eligible

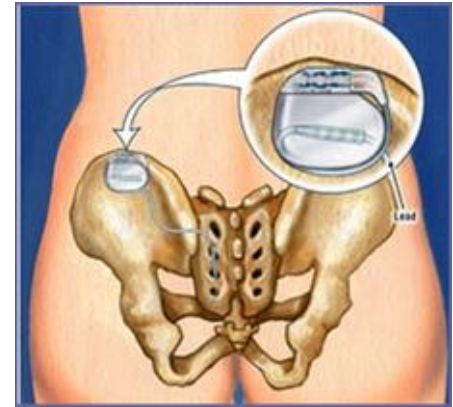
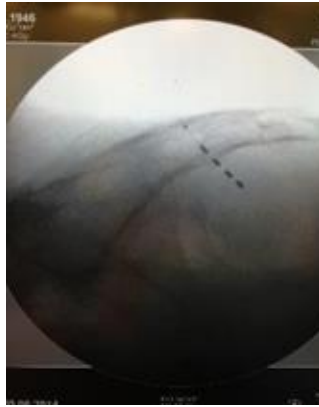
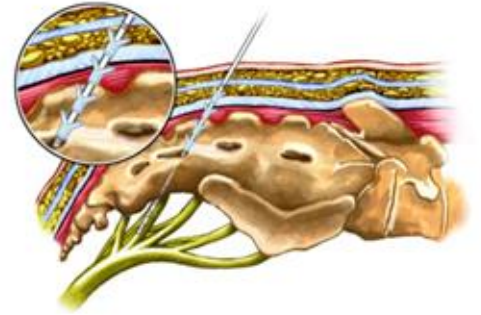
Sacral Neuromodulation – Mechanisms of Action

- Overactive bladder:
 - Modulates central afferent pathways from bladder to brain
 - Dampens down abnormal sensory input from bladder
 - Efferent pathways not affected – does not suppress voluntary voiding ie no risk of retention
- Non obstructive urinary retention:
 - Inhibition of inappropriate activation of the 'guarding reflex'
 - facilitates voiding by interrupting the excitatory outflow to the urethral sphincter



Sacral Neuromodulation – what is it?

- 'Bladder pacemaker'
- 2 stages:
 - Stage 1: Trial stage (2 weeks), insertion of lead into S3 foramen
 - Stage 2: implantation of permanent battery vs removal of lead



Sacral Neuromodulation

- Staged trial:
 - Small incisions only – minimal pain
 - Day case for most pts
 - Keep dressings dry for 2 weeks
- Overactive bladder:
 - About 75% response rate during staged trial
- Underactive bladder:
 - Response rate better for those with preserved bladder contractility
 - Younger age has better response

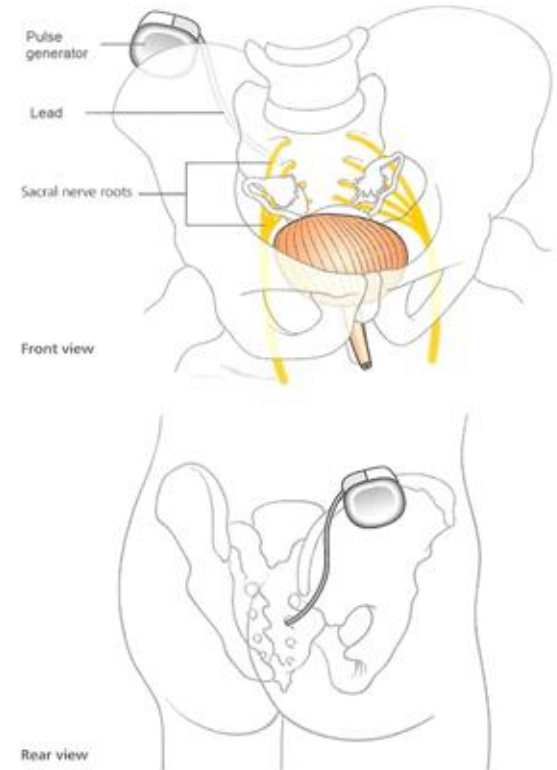
Evaluation of pre-operative bladder contractility as a predictor of improved response rate to a staged trial of sacral neuromodulation in patients with detrusor underactivity

Garson Chan^{1,2}  · Liang G Qu¹ · Johan Gani^{1,3}

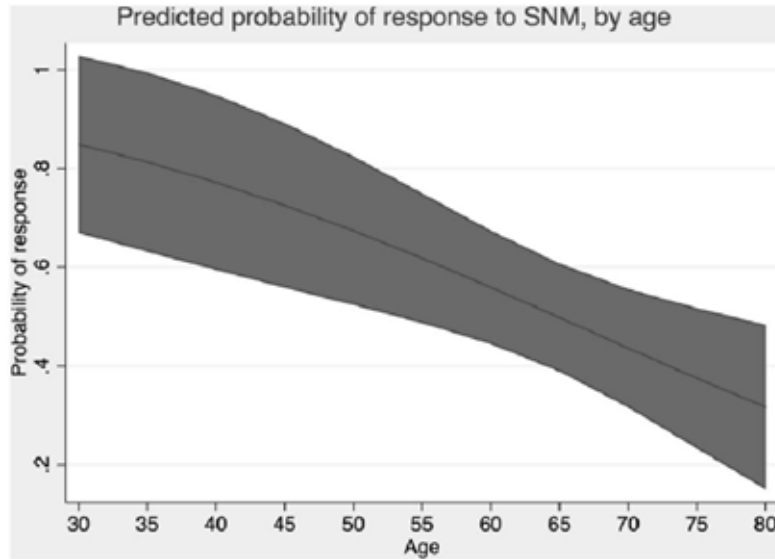
Received: 19 May 2020 / Accepted: 21 July 2020 World Journal of Urology

OBJECTIVES

- To identify predictive factors in patients with DU prior to SNM implantation:
 - Preserved detrusor contractility
 - Age
 - Neurogenic history
 - Voiders vs non voiders



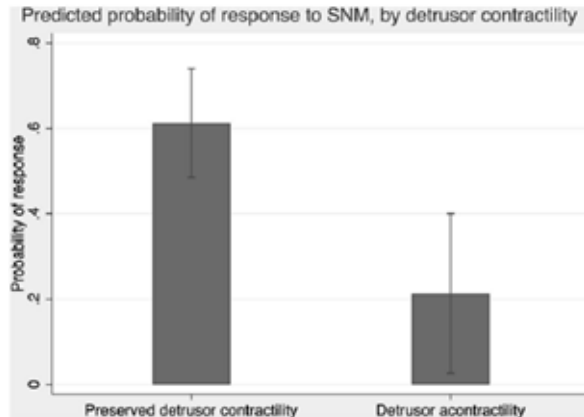
Results: age



Younger age was a predictive factor for SNM response, p value 0.02.

Patients aged 50 were roughly twice as likely to respond to SNM trial, as someone aged 80

Results: detrusor contractility



- DAC = UDS finding of absent contractility with failure to empty, in the absence of EMG abnormality

- 33% of patients (n = 6) with detrusor acontractility (DAC) responded, compared to 57% of patients (n=29) with BCI > 0, p value 0.03

Table 3 DAC patients

	N
Total patients with DAC	18
Non-voiding	13 (72%)
Valsalva voiding	5 (28%)
Median PVR (IQR) for voiders	300 mL (300–200)
Neurological history	10 (56%)
DAC patients who had response to stage 1 trial	6 (33%)

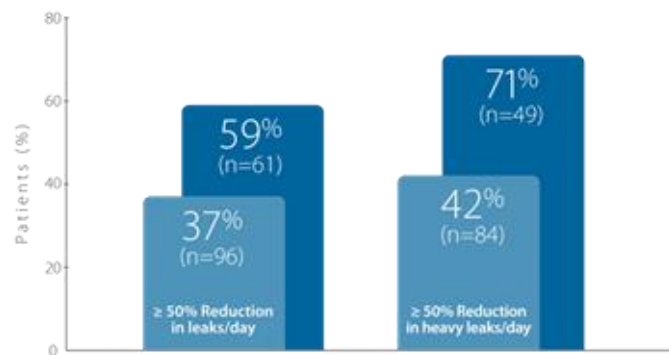
DAC detrusor acontractility, IQR interquartile range, PVR post void residual

- 18 patients had DAC
 - 13 were non-voiders, 5 were Valsalva-voiders
 - 10 (56%) had neurological history
- SNM requires intact afferent pathways to improve LUTS, which may not be present in those with DAC

Sacral neuromodulation – Clinical results at 5 years

- Overactive bladder:
 - **59%** of **urge incontinent** patients achieved $\geq 50\%$ reduction in leaks/day*
 - **71%** of those **urge incontinent** patients who reported **heavy leaks** at baseline achieved $\geq 50\%$ reduction in leaks per day†

5-year Clinical Trial



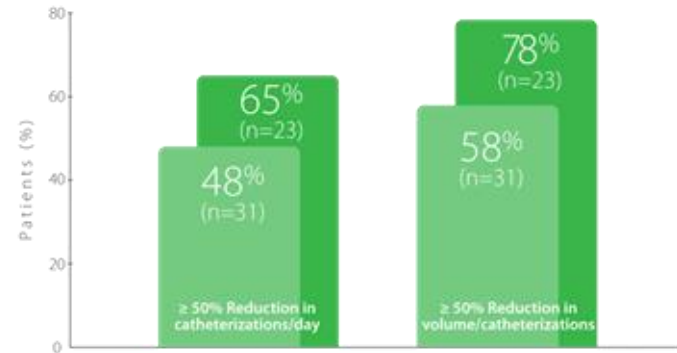
Evaluable Patients – the subset of subjects for whom both baseline and 5-year data were available

Intent-to-Treat Patients – all implanted subjects, including those who dropped out and were imputed as no change from baseline

Sacral neuromodulation – Clinical results

- Urinary retention:
 - **65%** of patients achieved > 50% reduction in catheterizations/day
 - **78%** of **urinary retention** patients achieved $\geq 50\%$ reduction in volume/catheterization*

5-year Clinical Trial



- Evaluable Patients** – the subset of subjects for whom both baseline and 5-year data were available
- Intent-to-Treat Patients** – all implanted subjects, including those who dropped out and were imputed as no change from baseline

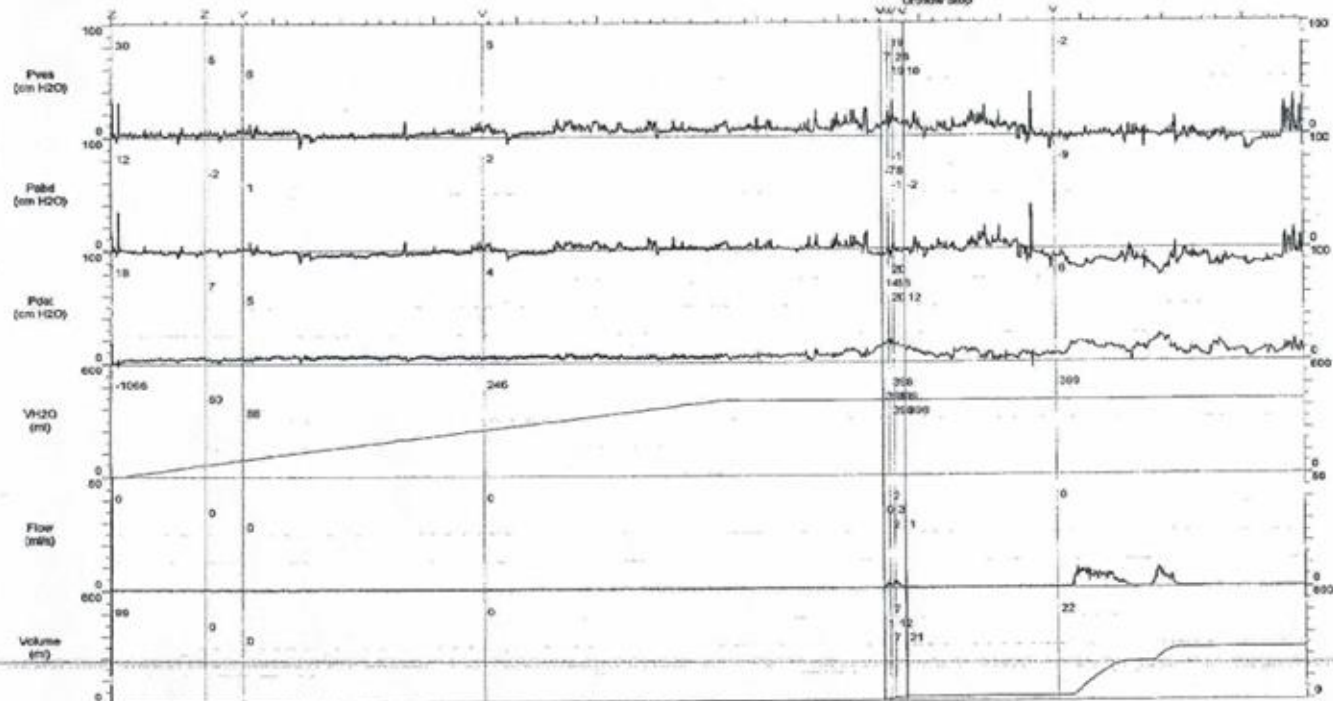
Case 2

- 70 yo woman with recurrent UTIs
 - 4-5 UTIs per year
 - When voiding, has to lean forward and strain
 - No urinary frequency, urgency, incontinence
 - Renal US: normal upper tracts, PVR 140ml
- PH: NIDDM
- Flexible cystoscopy: NAD



LAEBRIE

0 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 11:00 12:00 13:00 14:00
ZAE Zphd First Sensation First Dese Unflow Start Unflow Peak Pressure Max Filling Debraser Pressure Peak Flow Unflow Stop Permission to Void



CMG

CMG

Case

- Urodynamics:
 - Filling phase: stable bladder
 - Voiding phase: reduced bladder contractility
 - Voided 280ml, PVR 120ml
 - Qmax: 9ml/sec
 - BCI: 67 (hypocontractile range)
 - NIDDM causing hypocontractility
 - High PVRs causing recurrent UTIs

Case 2

- Trial of SNM:
 - Bladder diary showed big improvement in voiding
 - PVRs consistently <50ml
 - Permanent battery implanted
- Now 18 months since implant
 - No further UTIs
 - No need to do intermittent self catheterisation

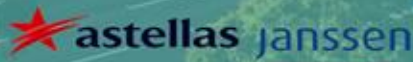
Conclusion

- Sacral neuromodulation is effective in treating:
 - Refractory overactive bladder
 - Non obstructive urinary retention
- Safe, minimally invasive
- 'Try before you buy'
- Offers long term clinical benefits

UROWEST^{II}.2026

GP Urological Education Meeting | Western Health

Saturday May 30th 2026 - Footscray Hospital



Scrotal Swellings and Testicular Cancer When and How to Refer

Miss Elaine Lee, FRACS, FRCS, MA (Cantab)

Urologist

Western Health and Werribee Mercy Hospital

UroWest Meeting, 30th May 2026

Learning Objectives

Define the GP role in assessment of scrotal swellings

Basic scrotal anatomy

Common causes and their presentation

Testicular cancer

When and how to refer to Urologist

- Victorian Statewide Referral Guidelines
- Urgent referrals

Clinical cases

Introduction – Role of the GP

Scrotal
swellings/pain are
common

1st point of contact

Initial assessment
Investigations

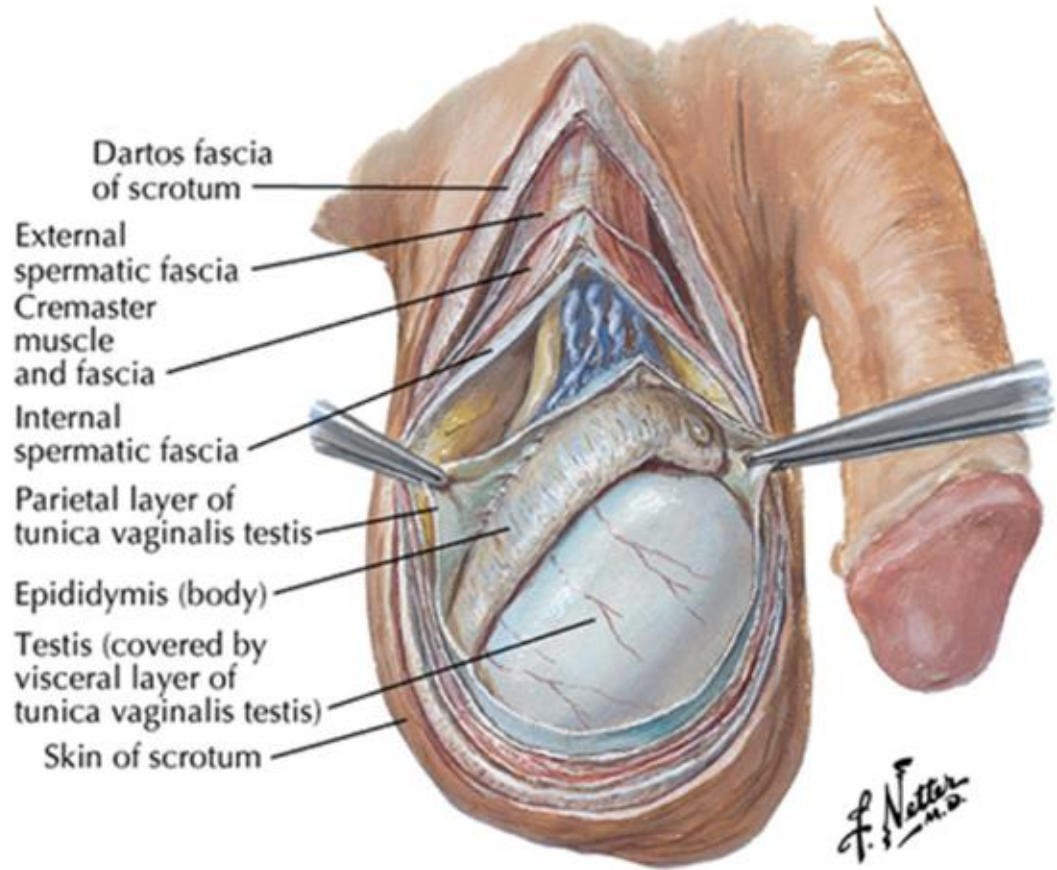
‘Gatekeeper’

Reassurance/Support

Referral to Urologist

Follow up/post-op
care

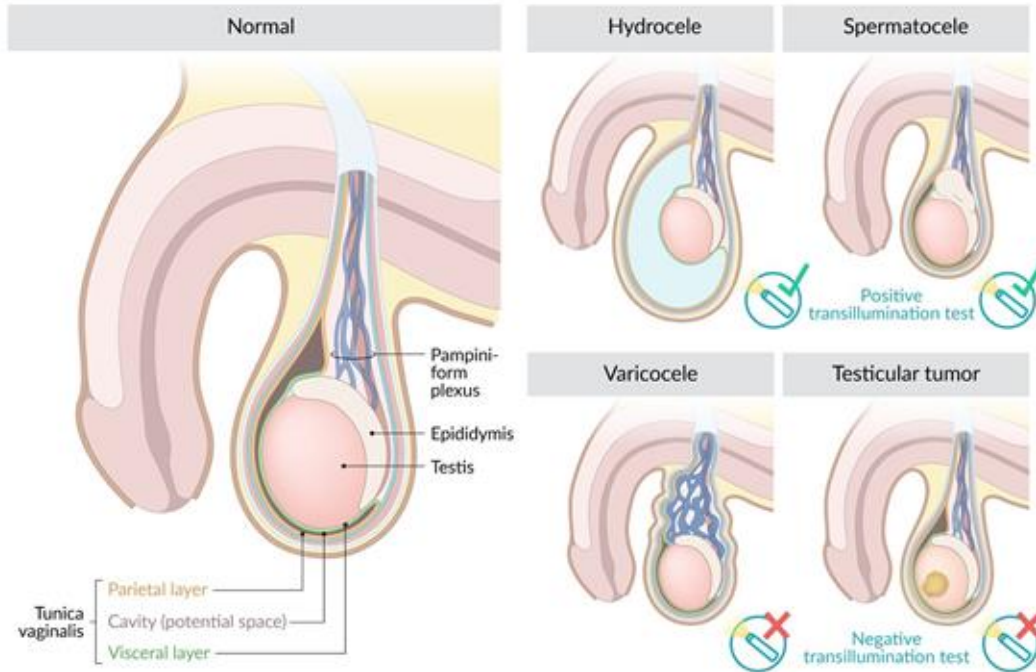
Scrotal Anatomy



What scrotal
swellings
have you
seen in your
practice?



Scrotal swellings for GPs

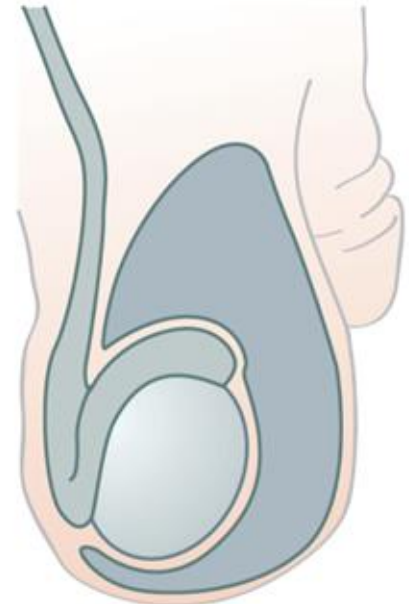


Hydrocele

Abnormal collection of peritoneal fluid between tunica vaginalis layers

- Benign
- Cystic swelling, transilluminates
- Testicle difficult/not palpable if large/tense
- Variable size
- Communicating (congenital, PPV)
- Non-communicating (acquired, imbalance of production/absorption, testicular
 - Infection/inflammation
 - Trauma
 - Torsion
 - Tumour
 - Post-varicocele repair

No treatment unless symptomatic



Hydrocele

Epididymal cyst and Spermatoceles

- Benign
- Cystic swelling, transilluminates
- Separate to testis, usually within head
- Asymptomatic or incidental on USS (30%)
- Peak incidence 65 years
- Can be removed, avoid in younger men – infertility risk
- Differential diagnosis (rare):
 - Papillary cystadenoma (b/l, multiple, younger, VHL)
 - Cystadenocarcinomas

No treatment unless symptomatic



Varicocele

Abnormal dilatation of pampiniform plexus of spermatic veins

- Common: 15-25% normal post-pubertal males, 35-60% men with infertility
- Do not cause infertility in most men
- Benign, but underlying cause may be malignant
- Incompetent venous valves, increased intravascular back pressure and reflux
- >75% occur on left side (enters more superior and at right angle)
- External compression
 - 'Nutcracker phenomenon' – left renal vein compression between SMA and aorta
 - Retroperitoneal mass

Varicocele - clinical presentation

- 'Bag of worms'
- Pain/ache reduces on lying down,
- Worse after prolonged standing
- Infertility
- Testicular atrophy /size discrepancy
- Asymptomatic

Grade	Clinical finding
Subclinical*	Ultrasound only
I	Palpable only with Valsalva
II	Palpable when standing, not visible
III	Visible and palpable

*Subclinical varicoceles have no impact on fertility

If right-sided, acute onset, consider abdominal imaging for renal or retroperitoneal mass causing obstruction

Testicular Mass

- **Cancer** until proven otherwise
- Hard/irregular mass of/within testis
- Does not transilluminate
- Younger men <40years

Needs urgent assessment including ultrasound scrotum and urological referral

Other causes

- Acute or Chronic epididymitis +/- orchitis
 - TB
 - Syphilis
- Scrotal oedema
- Inguinoscrotal hernia
- Testicular torsion
- Testicular trauma (haematocele/rupture)
- Para-testicular mass
- (Penile prosthesis pump)



Testicular Cancer

Relatively rare - 1% male cancers

Most common cancer in men 20-40 years

Age-standardized incidence rate 7/100,000 men (Australia 2021)

Estimated 1040 cases in 2025

Right > Left

1-2% bilateral

One of the most curable genitourinary malignancies >95% 5-year overall survival

Clinical features

**Painless
testis mass***

Asymptomatic

Heaviness or
discomfort in
scrotum

History of
trauma

Acute pain

Advanced disease (10-20%)

- Abdominal/supraclavicular mass
- Back pain
- Shortness of breath/cough/haemoptysis
- Weight loss

Gynaecomasti
a (2%)

Risk Factors for Testis Cancer

Factor	Relative Risk
Cryptorchidism	4-6
Early orchidopexy	2-3
Family history 1 st degree relative - Brother - Father	8-12 2-4
Personal history	12 (cumulative incidence 2% in 15 years)
Caucasian	5
Infertility	3
Germ cell neoplasia in situ (GCNIS)	50% in 5 years

Classification

Germ cell tumours (GCTs) ~95%

- Seminoma ~54% - most common adults
- Non-seminomatous germ cell tumour (NSCGT) ~46%
 - Embryonal carcinoma
 - Yolk sac tumour
 - Teratoma
 - Choriocarcinoma
 - Most are mixed
- If both seminoma and NSCGT classified as NSCGT

Non-GCTs ~5%

- Rare
- Sex cord stromal tumours
 - Leydig cell
 - Sertoli cell
 - Granulosa cell
- Lymphoma
- **GCNIS-derived** (majority)
 - Seminoma and NSGCT
- **Non-GCNIS derived**
 - Pre-pubertal type teratoma and yolk sac
 - Spermatocytic seminoma

Seminoma (most common adult GCT)

Classic type (95%)

- Age 35-40 (older)
- <10% BHCG
(Syncytiotrophoblasts)
- **Never AFP**
- USS homogenous, hypoechoic
- Confined to testis usually at dx
- *Chemo and radiosensitive*

Spermatocytic seminoma (5%)

- Not associated with cryptorchidism
- Age >50s
- Very low malignant potential
- Rarely metastasizes

Embryonal Carcinoma

Aggressive with high rate progression and metastasis

Age 25-35 years

Most undifferentiated with potential to differentiate into other NSGCT (primary and metastasis)

May secrete BHCG or AFP

Present in ~80% mixed GCT

Chemosensitive

Yolk Sac Tumour

AKA *endodermal sinus tumours*

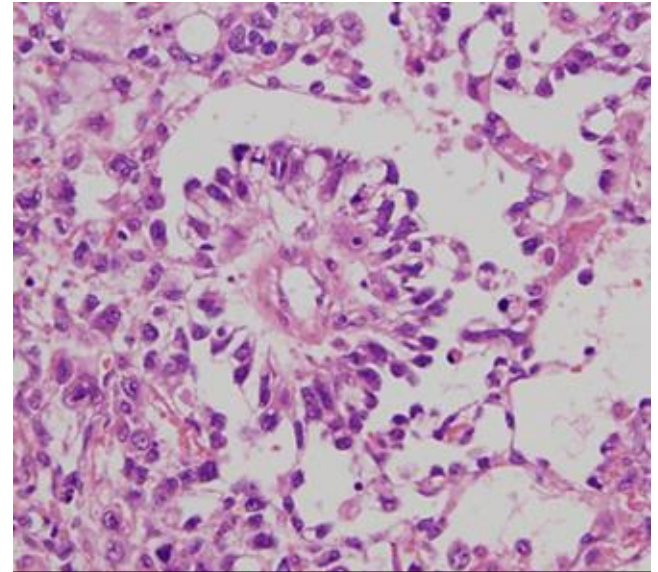
Most common in children and infants <10
yrs

Adults 40% mixed NSGCT

90% AFP not HCG

Haematogenous spread

Chemosensitive



Schiller-Duval bodies (central vessel surrounded by tumour cells in a cystic space)

Choriocarcinoma

Rare (<1%) and aggressive – worst prognosis

Age 20-30

Metastatic disease and **very high BHCG**, never AFP

Early haematogenous dissemination to lung, liver and brain

10% mixed GCT

Vascular with areas of haemorrhage and necrosis

4-10% risk brain haemorrhage during chemotherapy

Chemosensitive

Teratoma

Age 25-35

Contain well (mature) or incompletely (immature) differentiated elements of at least 2 germ cell layers

Pure rare, 50% mixed GCT

Pre-pubertal usually benign

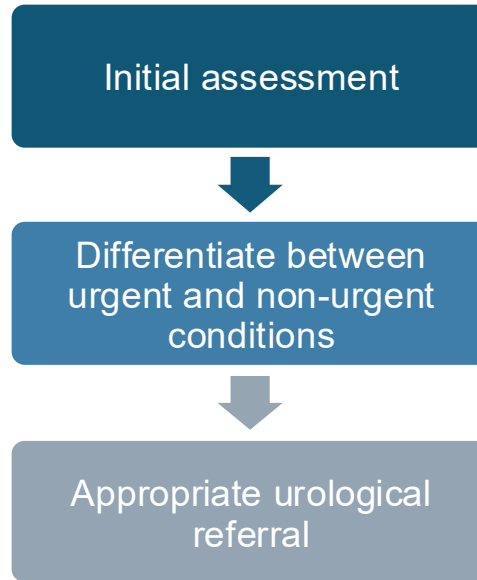
Post-pubertal potential malignant transformation into somatic malignancy

Teratoma growth syndrome

Pure do not produce AFP/BHCG

Chemo/radioresistant – surgical excision

The GP Assessment



Focused History

Swelling

- Presentation
- Onset
- Duration
- Change
- Trauma/injury
- Painful or painless

Pain

- Acute/chronic
- Severity
- Exacerbating/relieving factors

Associated symptoms

- LUTS
- UTI/STI
- Constitutional symptoms

PMH

- Scrotal/testicular surgery
- Undescended testis
- Testicular pathology
- STIs/TB

Other

- Family history of testis cancer
- Social history

Focused Examination (chaperoned)

General

- Cachectic
- Unwell

Scrotum

- Testis
- Epididymis
- Spermatic cord
- Inguinal

Others

- Supraclavicular lymph node
- Chest
- Gynaecomastia
- Abdominal mass

Scrotal mass examination key questions

Can you get above the mass?

Solid or cystic?

Can you identify the testis and epididymis?

Is it arising from the testicle or epididymis?

Transilluminate?

Tender?

Investigations for GPs

Urinalysis +/- urine MCS

Scrotal ultrasound scan most important

- Confirm presence of mass
- Intra- or extra-testicular
- Cystic or solid
- Size and location
- Assess contralateral testis
- Hydrocele, epididymal cyst, varicocele

Tumour markers if concern testicular tumour

- AFP / BHCG / LDH

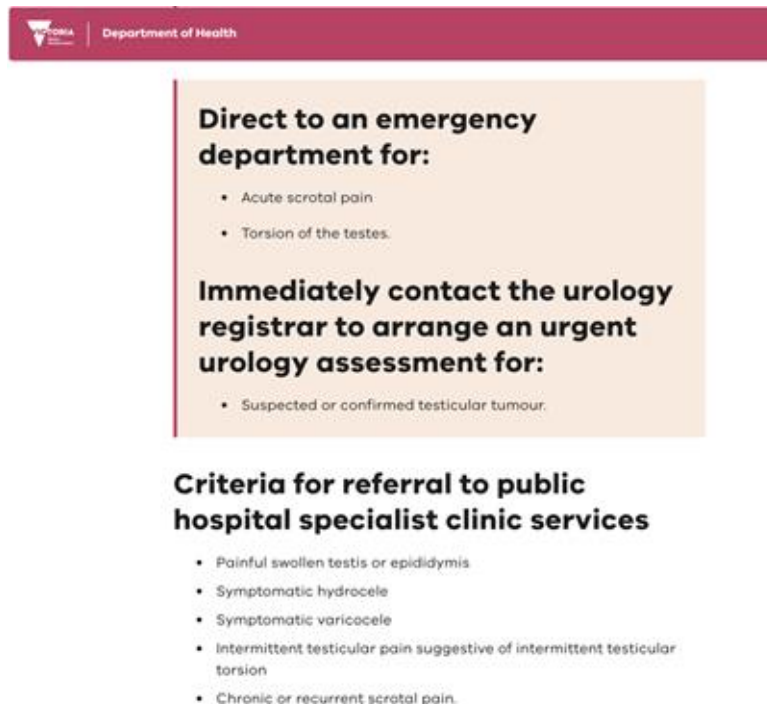
Indications for referral to Urologist

1. Symptomatic
 - Hydrocele
 - Epididymal cyst
 - Varicocele
2. Suspected or confirmed testicular tumour
 1. Scrotal swelling/chronic painful swollen testis or epididymis

As per Victorian Statewide Referral Guidelines

Victorian Statewide Referral Guidelines

- Standardised, consensus on when to refer to public hospital
- Mandatory information
- Urology specific guidelines available at <https://www.health.vic.gov.au/statewide-referral-criteria/urology>
- Reduces rejection of your referral
- Improving patient care (and your frustration!)



The image is a screenshot of a webpage from the Victorian Department of Health. It features a pink header with the Victoria logo and the text 'Department of Health'. The main content is on a light orange background and is divided into two sections. The first section, titled 'Direct to an emergency department for:', lists 'Acute scrotal pain' and 'Torsion of the testes'. The second section, titled 'Immediately contact the urology registrar to arrange an urgent urology assessment for:', lists 'Suspected or confirmed testicular tumour'. Below this, a section titled 'Criteria for referral to public hospital specialist clinic services' lists five conditions: 'Painful swollen testis or epididymis', 'Symptomatic hydrocele', 'Symptomatic varicocele', 'Intermittent testicular pain suggestive of intermittent testicular torsion', and 'Chronic or recurrent scrotal pain'.

Department of Health

Direct to an emergency department for:

- Acute scrotal pain
- Torsion of the testes.

Immediately contact the urology registrar to arrange an urgent urology assessment for:

- Suspected or confirmed testicular tumour.

Criteria for referral to public hospital specialist clinic services

- Painful swollen testis or epididymis
- Symptomatic hydrocele
- Symptomatic varicocele
- Intermittent testicular pain suggestive of intermittent testicular torsion
- Chronic or recurrent scrotal pain.

How to refer to Western Health

Western Health referral form

E-referrals with HealthLink SmartForms

- Incorporates statewide referral criteria

Urology registrar on call (urgent referrals only)

Information to include:

- Reason for referral
- Relevant history and examination findings
- Scrotal ultrasound report
- +/- MSU / Bloods

Emergency/Urgent referrals

- Call the **On Call Urology Registrar** if suspected or confirmed testicular cancer
 - Urgent clinic appointment +/- additional investigations
- Refer to **Emergency Department** if:
 - Acute testicular pain
 - Suspected metastatic testicular cancer



Case study 1

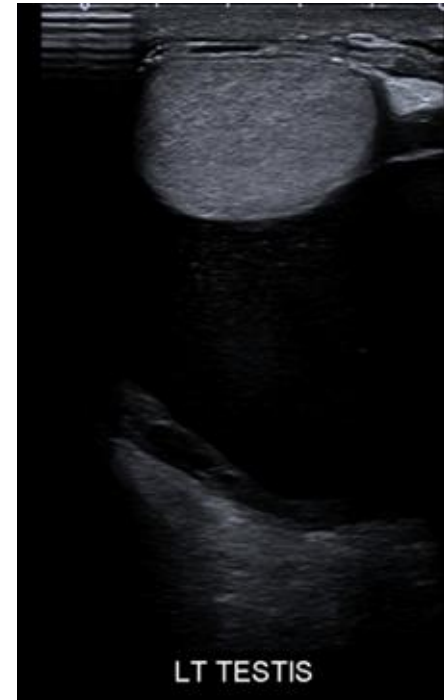
- Andrew 56M
- Left scrotal swelling for 12 months
- Slowly increasing in size
- Discomfort when wearing jeans and as HGV driver
- No trauma, LUTS, UTIs
- Fit and well

Examination findings



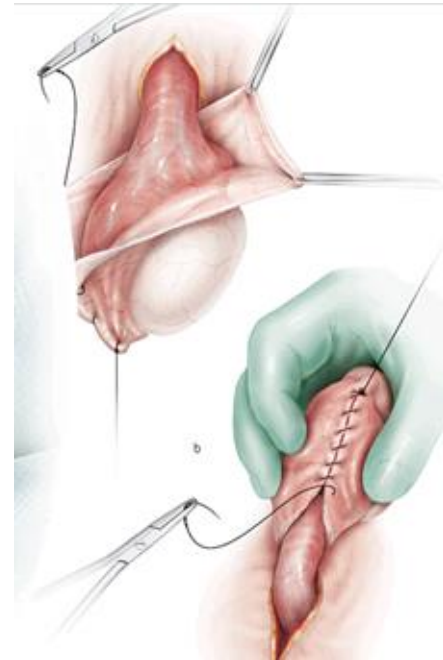
What is the diagnosis?

- Investigations?
- Scrotal Ultrasound scan
 - Normal left testis
 - Large left simple hydrocele
- Management?
 - Reassure
 - Refer routine urology clinic



What will the Urologist do?

- Hydrocele repair
- Jaboulay procedure
 - Incision median raphe/transverse
 - Incise sac and drain fluid
 - Evert sac and close
- Lord's plication
- Aspiration



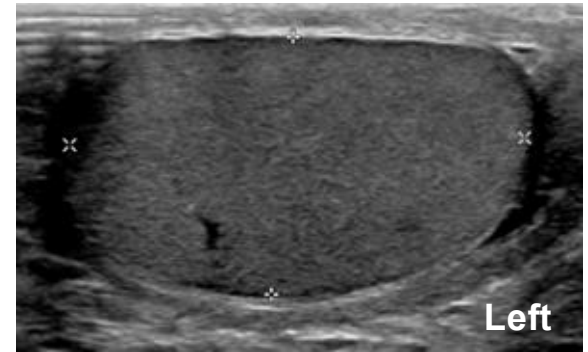
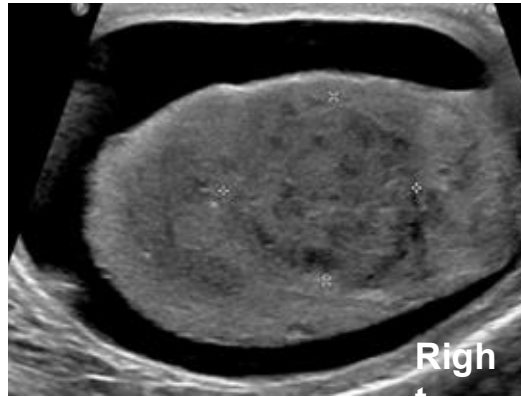
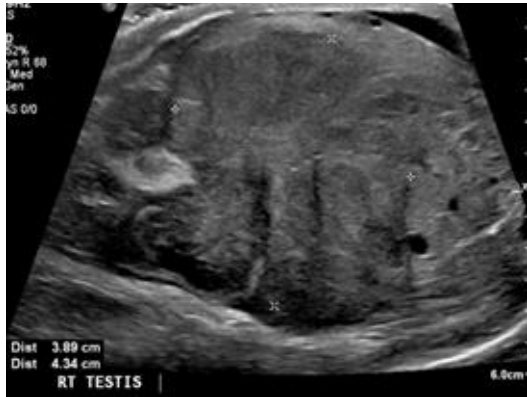
Case study 2

- 22M right painless testicular swelling for 1 year
- Generally unwell for 3 months
- 20kg weight loss in 3 months
- Cough, dyspnoea and haemoptysis
- Fit and well, no history of undescended testes
- No FH

Examination findings

- Cachectic
 - Normal scrotal skin
 - Enlarged right hard nodular, non-tender testis
 - Normal left testis
-
- Diagnosis?
 - What do you do?

Scrotal Ultrasound



Grossly enlarged heterogeneous hypervascular right testis with 2 heterogeneous mass lesions within. Mild right hydrocele. Normal left testis. Appearances favour right primary testicular malignancy.

CXR



What do you do next?



**Urgent referral to Emergency
Department**



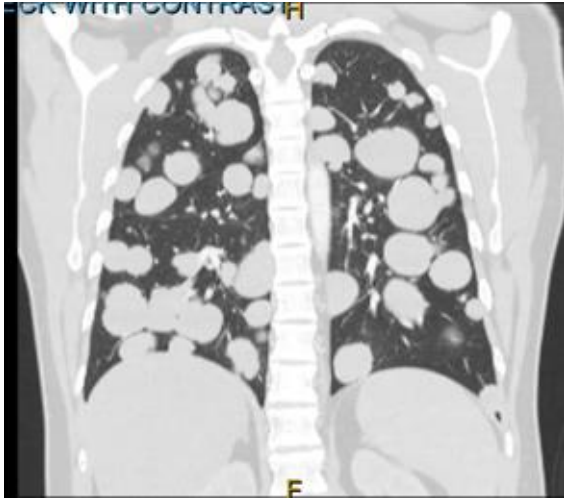
Tumour markers

AFP 931 – yolk sac
BHCG 8400 - choriocarcinoma
LDH 3727



**CT Brain, Chest, Abdomen and
Pelvis**

CT chest, abdomen and pelvis



Urgent inpatient chemotherapy



Take Home Messages

Scrotal swellings are common and GP assessment is pivotal

Scrotal ultrasound scan should always be performed

Most causes are benign

- Patient reassurance
- Routine urology referral

Testicular mass = cancer until proven otherwise

Testicular cancer is rare but highly curable

Urgent referral to urology registrar on call or Emergency Department if concerns metastatic disease

Refer to Victorian statewide referral guidelines

Thank you for listening!

Questions?