Case studies: LUTS

Case 1 – history

A 49 year old male comes to see you – he has had gradual deterioration of his flow over the last few years - he saw a colleague of yours 6 weeks ago who recorded in the notes:

“Worsening stream last few years, long time to empty bladder. Nocturia x1. O/E – no palp bladder; PR – sl enlarged smooth prostate; Plan – trial of alpha blocker. Rx Tamsulosin 400mcg od, review 1 month.”

Treatment has had no effect

Case 1 – questions

What has your colleague failed to do in his/her assessment & management that is recommended in the NICE LUTS in men guideline?

What do you do now?

Case 1 – outcome

You decide to refer for specialist assessment

The urologist fully examines the patient and finds a tight urethral meatal stenosis on examination.

The patient undergoes surgical treatment with full resolution of his symptoms.

Case 1 – learning point

NICE recommends all men with LUTS have a focussed general examination, an examination of the external genitalia and digital rectal examination.

Meatal stenosis or phimosis of the foreskin is a commonly missed cause of voiding symptoms. Treatment is by meatoplasty or circumcision – not with alpha blockers.....

Case 2 – history

A 68 year old man presents following an episode of visible haematuria. He has no symptoms of a UTI but has had increasing LUTS (both storage & voiding) for the last 12 months.

Non-smoker

Otherwise fit & well
**Case 2 – examination & investigation**

Abdomen / external genitalia – normal  
DRE – large smooth prostate  
Urine dip – blood ++, no leucocytes / nitrites  
MSU – RBC++, no WBC, no growth  
eGFR normal, no proteinuria, BP 140/80

**Case 2 – specialist assessment**

Referred to haematuria clinic by 2 week wait  
Renal USS – normal  
Flexible cystoscopy report: “normal urethra, vascular occlusive prostate, bladder normal, no urothelial lesion”.  
Discharged – no other management plan in letter

**Case 2 – question**

He has a further episode of visible haematuria  
What should you do?

**Case 2 – management & learning points**

He needs a CT Urogram to complete assessment of the upper tracts – renal ultrasound can miss small renal tumours, small calculi, or urothelial tumours in the ureters.  
If this is normal, it is possible to use a 5-alpha reductase inhibitor both in the long term to control his LUTS and also in the short term to prevent further episodes of bleeding from his vascular prostate.

**Case 3 – history**

39 year old male  
6 month history of increased urgency, urinary frequency and nocturia x2  
Good stream, no hesitancy or intermittency.  
Fit and well previously.  
Drinks 5-6 cups of tea / coffee per day plus a beer or glass of wine in the evening

**Case 3 – examination & investigation**

Abdomen normal  
External genitalia normal  
DRE – small smooth prostate  
Urine dip NAD  
PSA / eGFR – not done  
Frequency volume chart – shows marked daytime frequency with highly variable voided volumes between 50 and 300mls. Total daily urine output 2300mls.
Case 3 - questions

What is your differential diagnosis?

How would you manage this patient?

Case 3 – diagnosis & management

Triad of frequency / urgency / nocturia = Overactive bladder syndrome (OAB)

Initial management: lifestyle advice – decrease intake of caffeinated / carbonated / alcoholic drinks: some improvement but still bothersome symptoms

Referred to continence advisor for supervised bladder training including male pelvic floor exercises

Consider treatment with an anti-cholinergic (e.g. Oxybutynin, tolterodine, solifenacin) if this fails

Case 3 – learning point

OAB is under-diagnosed in primary care – many men presenting with storage symptoms are labelled with ‘prostatism’ and unsuccessfully treated with alpha blockers etc.

An understanding of the distinction between storage and voiding symptoms, taking a good history and use of a frequency volume chart, will all enable the primary care physician to make a correct diagnosis.

Case 4 - presentation

71 year old male presents with increasingly bothersome LUTS: he has both voiding (slow flow, hesitancy) and storage (frequency & nocturia) symptoms which have been gradually worsening for the last 2-3 years.

He is otherwise fit – he takes simvastatin 40mg (primary prevention) and is on blood pressure medication (not on diuretic)

Case 4 – examination & investigation

Abdomen normal

External genitalia normal

DRE – large smooth prostate (unable to reach top of prostate with examining finger)

Urine dip NAD

Frequency volume chart – total daily voided volume approx 2l; increased daytime frequency, nocturia 1-3x per night.

PSA 1.9

IPSS (recommended by NICE guideline as commencing medical therapy) 25 / 35

Case 4 - questions

What do you feel is the most likely diagnosis?

According to the NICE LUTS guideline, how should this patient be managed?
**Case 4 - management**

He has moderate to severe bothersome LUTS with a large prostate (ie >30g) and a PSA>1.4

NICE LUTS guideline would therefore suggest consideration of combination therapy: Alpha blocker (e.g. Tamsulosin) plus 5-alpha reductase inhibitor (dutasteride / finasteride)

Review patient at 4-6 weeks (to check efficacy of alpha blocker), 3-6 months (to check efficacy of SARI) then every 6-12 months. Review is to assess symptoms, adverse effects of treatment, and effect of treatment on quality of life.

**Case 4 – learning point**

NICE recommends consideration of ‘combination therapy’ for men with moderate to severe LUTS (IPSS 8-19 = moderate, 20-35 = severe) who have a prostate estimated to be larger than 30g or a PSA > 1.4ng/ml.

A prostate that feels large on examination, or where it is not possible to reach the upper pole with the examining finger is highly likely to be >30g.

As well as being a tool for measuring prostate cancer risk, PSA is also a valuable indicator of the risk of progressive deterioration of LUTS / development if acute retention – men with PSA > 1.4 are at highest risk.

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**Case 5 - presentation**

78 year old male presents with a 6-9 month history of mild LUTS, predominantly a slow intermittent flow with nocturia x3.

He is otherwise fit and well, on no regular medication.

**Case 5 - examination & investigation**

- Abdomen and external genitalia normal
- DRE – large smooth prostate
- Urine dip NAD
- Frequency volume chart – normal fluid output, nocturia 2-3x per night
- PSA discussed & offered – result 8.6 ng/ml (age specific normal would be <4.0 ng/ml)

**Case 5 - questions**

Given this history, what is your main differential diagnosis?

What would be recommended by the NICE LUTS guideline (& NICE referral for suspected cancer guideline)?

**Case 5 – management**

Given raised PSA referred for specialist assessment

- Transrectal ultrasound – 75cc (ie significantly enlarged prostate)
- Multiple prostate biopsies showed BPH only

NICE guidance: LUTS with prostate >30g and/or PSA >1.4ng/ml – i.e. at risk of progression – offer a 5-alpha reductase inhibitor.

PSA monitored in primary care noting that after 6 months on SARI result needs to be approximately doubled for comparison; patient reviewed at 6 months and annually thereafter.
Case 5 – learning point

In most men with LUTS, the decision to treat is based on the severity of symptoms and their impact on quality of life.

Research has identified risk factors for progression i.e. Worsening symptoms, acute retention or surgery, and these include a large prostate, PSA>1.4, increasing age & increasing severity of symptoms.

Despite this patient’s mild symptoms, given his age & PSA he is at risk and NICE would recommend use of a 5-alpha reductase inhibitor to lower this risk.

Case 6 - presentation

76 year old male patient. Presented with LUTS to his GP 4 years ago – assessed and commenced on alpha blocker (tamsulosin 400mcg once daily) with significant improvement in LUTS – patient initially satisfied with result.

Last 6-12 months has noticed a gradual return of his LUTS, flow slowing, more frequent during the day and getting up at night again

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Case 6 – examination & investigation

Abdomen / external genitalia normal
DRE – large smooth prostate

Urine dip NAD
PSA 1.7

IPSS 20 (had been 22 when commenced treatment, dropping to 13 when repeated 6 months after commencing tamsulosin)

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Case 6 – question

What management options are available?

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Case 6 – management options

3 options presented to patient
- Persevere with symptoms as they are but significant risk they will continue to worsen [plus risk of urinary retention]
- Add SARI (dutasteride, finasteride) in combination with tamsulosin – warning patient that this will take approximately 6 months before symptoms are noticeably improved, but this is optimal medical management with decreased risk of retention / surgery
- Refer for surgical intervention

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Case 6 – outcome

Patient chooses trial of combination therapy (alpha blocker plus SARI)

At 6 months patient pleased that symptoms have improved – IPSS has decreased to 15

Symptoms and PSA monitored annually – IPSS continues to improve for the following 12 months, dropping to 11 after 18 months of combination therapy
Case 6 – learning points

Research has shown that for patients with risk factors for progression use of an alpha blocker gives an initial significant improvement in symptoms but this improvement may not be sustained in the longer term i.e. beyond 3-4 years.

These patients can either have a 5-alpha reductase inhibitor added when symptoms begin to deteriorate, or combination therapy can be used from the outset in higher risk patients to avoid this complication.

Case 7 - history

59 year old male presents having just completed treatment for his third urinary tract infection in 6 months.

He has noticed gradually progressive lower urinary tract symptoms over the last 12-18 months – his flow has slowed and he has hesitancy. He is passing urine twice at night and more frequently during the day – he also describes that he feels he is not completely emptying his bladder. He has occasional episodes of nocturnal enuresis.

Case 7 – examination

Abdominal examination – you suspect he is dull to percussion above his pubic symphysis to just below the umbilicus.

External genitalia are normal.

Digital rectal examination – large smooth prostate.

Case 7 – question

What investigations would you carry out (as recommended by NICE LUTS guideline)?

Case 7 - investigation

Investigations recommended by NICE:
- Urine dip NAD
- Serum creatinine / eGFR normal
- PSA (n.b. do not measure PSA for at least 4-6 weeks after UTI as may give false positive result) 1.1
- Referred for specialist assessment given recurrent UTI with LUTS and possible chronic retention

Case 7 – specialist assessment

Urine flows – slow flow rate (Qmax 13ml/sec
Post micturition residual (on ultrasound) 1050mls.
Normal kidneys on ultrasound – no hydronephrosis

Patient undergoes urgent TURP – given moderate symptoms, no hydronephrosis and stable renal function he is not catheterised pre-operatively
Case 7 – learning points

Always examine the abdomen for a palpable / percussable bladder.
Nocturnal enuresis is a ‘red flag’ symptom which should raise suspicion of chronic retention.
NICE recommends all patients with chronic retention have a serum creatinine and renal ultrasound – if impaired renal function or hydronephrosis they should be catheterised prior to surgery.
If renal function and ultrasound normal then can proceed to surgery without prior catheterisation.
Intermittent self-catheterisation is an option for patients prior to surgery or for those in whom surgery is inappropriate.

Case 8 - history

A 76 year old man comes to see you. He has been taking ‘combination therapy’ (combined alpha blocker and 5-alpha reductase inhibitor) for the last 3 years for LUTS secondary to BPH.
His LUTS are well controlled on treatment.
His PSA prior to treatment was 2.1, but this dropped to 0.8 after 6 months on treatment.
Over the last 6 months his PSA has increased from 0.9 to 2.4 – this needs to be doubled as he has been on SARI for >6 months. (n.b. age-specific normal range <5.0 for a man >70 years old).

Case 8 - question

His PSA remains in normal range – what would you do now?

Case 8 - outcome

You examine his prostate but don’t detect anything worrying on DRE.
Given the rise in his PSA you refer for a specialist opinion.
The urologist notes a slightly firm left lobe and carries out a TRUS and biopsy of the prostate.
A Gleason 8 i.e. Moderately aggressive prostate cancer is diagnosed and he is treated with radical radiotherapy.

Case 8 – learning point

Prostate cancer can be present in a patient with a normal PSA.
PSA results for men on 5-alpha reductase inhibitors (treated for >6 months) need to be doubled to compare with age-specific ranges.
PSA will slowly rise in men with BPH, but generally at a velocity of less than 0.5 or 0.75 ng/ml per year.
This patient had a rise of 1.5ng/ml in 6 months which is highly suspicious, despite remaining within the age-specific range.

Case 9 - history

An 80 year old man presents in great distress – he has been unable to pass urine all day and is now in pain. He has had gradually deteriorating LUTS for the last few years but has not discussed this as he felt it was normal for an ageing male.
He has a palpable bladder and a large smooth prostate on DRE.
Case 9 - questions

What are your options?

What is recommended in the NICE LUTS guideline?

Case 9 - outcome

He needs immediate catheterisation

This can either be performed in the community or he will need emergency hospital admission.

If catheterised in the community he can be offered a trial without catheter (TWOC) in approximately 2 weeks – NICE recommends he is commenced on an alpha-blocker prior to TWOC.

Following removal of catheter he will need to continue his alpha blocker and a full assessment made to determine optimal ongoing medical management – e.g. combination therapy.

Case 9 – learning point

Acute retention of urine is a highly distressing condition for patients.

Studies suggest increased all-cause mortality in men who experience acute retention: in the 75-84 year age band a one-year mortality rate of almost 30% in men with co-morbidities.

Optimal medical management including risk stratification and therapy targeted at those most at risk of retention can decrease rates of retention, the high costs associated with treatment and the subsequent increased mortality rates.

Case 10 - history

A 60 year old man presents with progressive deterioration of LUTS over the last 6-12 months. His symptoms are causing significant bother and he is keen to embark on investigation and treatment.

When examining him you find you are unable to reach his prostate on digital rectal examination.

Case 10 - question

How can you assess his prostate fully if you are unable to feel it on DRE?

Case 10 – management & learning point

You have 2 priorities – firstly to assess for the risk of prostate cancer, and secondly to determine prostate size to help guide treatment for BPH.

PSA can be used for both these purposes – it’s well understood role is for prostate cancer screening.

PSA is also a surrogate marker for prostate volume and risk of progressive symptoms – a PSA >1.4ng/ml correlates with a prostate volume of >30cc (i.e. significantly enlarged) and is the strongest risk factor for clinical progression in BPH.