Modern Management of Urological Emergencies

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Urologic Emergencies

• discuss some of the commonest emergencies

• tips for diagnosis and management

• what you can do at your surgery

• when to refer
Paraphimosis

• foreskin is retracted and trapped behind the coronal sulcus

• venous and lymphatic obstruction results in oedema of glans and foreskin

• oedema can occlude arterial inflow to the foreskin and glans

• symptoms - mainly pain, communication issues may just be irritable
  - extreme cases can have ischaemia
Paraphimosis

• who is at risk? - those with a phimosis, balanitis
• when does it occur? - after sexual activity
  - patients we examine – always advance the foreskin post exam
  - elderly - patients or caregivers who fail to advance foreskin

Look for it – it is not rare
Paraphimosis – How to reduce it

• ring block, 10-20 mls 1% lignocaine, no adrenaline!

• wait 5 mins
Paraphimosis

- Compress the glans with thumb and forefinger
- Push it through the narrow ring of the foreskin
- Advance the foreskin
- Success rates high
- Refer to outpatients for circumcision
Paraphimosis

• if the foreskin will not advance or it is too painful, send to hospital

• likely to need reduction under anaesthesia or dorsal slit

• elective circumcision gives the best cosmetic result

• emphasise that they have nothing to eat or drink
Priapsim

- persistent erection that continues beyond or is unrelated to sexual stimulation and lasts over 4 hours

- two types:  
  - ischaemic: high inflow but low outflow
  - non-ischaemic: high inflow and outflow

- ischaemic is the commonest by far
Priapsim - Ischaemic

- aetiology - intracavernosal injections, sickle cell, leukaemia
  
  - increased intracavernosal pressure reduces arterial inflow
    
  - causes hypoxia, acidosis and compartment syndrome
    
  - if lasts 12 hrs, 50% have long term ED; if it lasts 24 hours 90% ED
Priapsim - Ischaemic

• present with a painful erection

• the erection looks normal

• beware older patients with no history of
  of using an erectogenic agent
    - direct infiltration from
      bladder or prostate cancer
Priapsim

• investigation
  FBC
  if type of priapism uncertain blood gases

• treatment
  local anaesthetic
  19G butterfly + aspirate
  phenylephrine 10mg/ml, 1ml
  with 19 mls saline, use 1ml every 15-20 mins
Priapsim

- most are treated in hospital

- if fails to settle a shunt is created

  between corpora and glans
What is this?
Penile fracture

- rupture of the tunica albuginea

- usually occurs during intercourse

  commonest position is missionary – erect penis hits pubic bone

- history and exam will give the diagnosis
Penile Fracture

• man hears a ‘pop’, has pain, swelling and detumescence

• urethral injury can occur - look for blood at the meatus
  - ask if they have voided

• immediate surgical repair is the standard of care

• the patient is usually very embarrassed so encourage them to be seen
Penile fracture

- erectile dysfunction
- Peyronie’s disease
- suspensory ligament
- pain + palpable lump

• possible complications include

• pain without bruising is not a fracture
Fournier’s Gangrene

• a real urological emergency

• becoming more common

• patient presents with black areas on penis or scrotum

• may have bullae, crepitus or subcutaneous gas
Fournier’s Gangrene

• usually diabetics or older men

• can develop from insect bites, superficial abscesses

• usually have pain and a temperature

• rapidly progressive

• treatment is aggressive debridement and antibiotics and grafting
Macroscopic Haematuria

• initial stream haematuria     usually urethra or prostate

• full stream haematuria      anywhere

• terminal haematuria           usually bladder base
Haematuria

• bleeding can be from anywhere
  
  investigate both upper and lower urinary tracts

• useful numbers
  - microscopic 10% significant pathology
  - macroscopic 30% significant pathology
Haematuria

- tumours may bleed only once every few months
  everyone with haematuria needs investigating

- painful haematuria
  usually an infection or a stone
  every male infection needs investigating
  females with an infection do not need investigating unless their infections are frequent or there are signs of pyelonephritis
Haematuria

• painless haematuria
  - often BPH in males
  - tumours
    - bladder
    - kidney
    - prostate
Haematuria

- investigation
  - FBC
  - urine culture
  - microscopic U/S and cystoscopy
    protein/creatinine ratio
  - macroscopic CT IVU and cystoscopy
  - cytology or CX bladder
Haematuria

• admit those passing clots or in retention

• if managing at home advise
  - a high fluid intake if possible
  - no exercise until it clears

• most bleeding settles

• refer to outpatients for investigations
Haematuria

• if you need to catheterise use a 22F 3 way or the biggest one you can find
• small catheters do not drain the clots i.e 14 F
• use two syringes of lignocaine jelly
• the catheter will usually pass easily
• wash the bladder out with 500 mls saline, bleeding usually stops when the clots are removed
• refer to hospital for irrigation or if you don’t have the equipment
Acute Scrotal Pain
Testicular Torsion

- usually a brief history of significant pain
- may have happened before
- often have nausea and vomiting
- usually no history of fever
- only have 6 hours to salvage the testis
Testicular torsion

- **examination**
  - testis usually high and transverse but **NOT ALWAYS**
  - don’t rely on Prehn’s sign or cremasteric reflex
  - if testis is normal look for a hernia, referred pain

- **investigation?**
  - no it is a clinical diagnosis
  - it is preferable to operate on epididymitis than miss a torsion

- **treatment**
  - bilateral fixation, permanent suture
What is this?
Epididymitis

- history is helpful

  - how long: often 12 hours +
  - onset: usually gradual
  - sexual contact: unprotected sex, urethral discharge
  - urinary infection: background of BPH, prostate surgery, dysuria, retrograde spread along vas
  - lifting: reflux epididymitis
Epididymitis

- Often have a temperature
- May have a cellulitis
- Early on only the epididymis is tender and enlarged, but later the testis is also involved
- Familiarity with normal anatomy will make diagnosis much easier

- MSU, STI check if appropriate
- Ultrasound
Epididymitis

- Treatment
  - if temp > 38 or cellulitis hospitalise
  - usually need 10 days of antibiotics
  - cover Chlamydia if STI a possibility
  - resting vital to prevent abscess or readmission
  - it may take 6 weeks to return to normal size
  - refer to outpatients if UTI or LUTS
What is this?
Torsion of an Appendage
Torsion of an Appendage

• usually a child or teenager

• the torted appendage may be visible through the thin scrotal skin

• usually treated conservatively
  - the appendage will slough off
  - excise if persistent/severe pain
Urinary Retention

• around 1/3 of men in retention may not have a history of LUTS

• nocturnal incontinence in a man is almost always due to chronic retention

• 90% are men

• 10% are women
Urinary Retention

- occasionally retention precipitated by alcohol and constipation
- rarely cord compression
Urinary Retention

• women - gynaecology surgery, pregnancy, pelvic masses, constipation
Urinary Retention

- **examination**
  - always do a DRE and look at anal tone/sensation
  - prostate size - fingers
    - 2 - 30 cc (average)
    - 3 - 60 cc
    - 4 - 100 cc

- **investigation**
  - creatinine
  - urine if infection suspected
  - PSA if DRE suspicious - usually impractical before IDC
Urinary Retention

• catheterisation - what size to use?

  suspect BPH – start with 16F, increase size if not pass

  suspect stricture – 12F

  suspect clot retention – 22F 3 way

• tips 2 syringes of gel

  measure volume drained, if > 1000 mls TROC unlikely to succeed
Urinary Retention

- measure hourly urine, if > 250 mls/hr admit

  post obstructive diuresis

  - occurs with elevated creatinine

  - renal concentrating ability is slow to return when obstruction relieved

  - can void 10 litres in a day so need IV support
Renal Colic - Presentation

- typically - colicky
  - patient cannot get comfortable
  - nauseous or vomit

- unilateral

- beware - older patient – think AAA
Presentation

• Renal - loin or back pain

• Ureteric - loin to groin

• Distal - beware
  - may be just frequency, urgency
  - strangury
Examination

- **temperature** - medical emergency

- **abdominal exam** - often just tender, look for peritonism, AAA, Murphy’s, hernia, other pathology

- **back movements** - do they precipitate / aggravate the pain
Investigation

- MSU - microhaematuria (10% have no RBC’s)
  - infection

- Blood - creatinine
  - calcium hyperparathyroidism
  - urate uric acid stones or as a nidus for Ca stones
Radiology

• a number of options exist

• what is your local practice?

• Auckland  - diagnosis at local DHB

  - referral to Auckland if treatment needed
CT Urogram (C-)

- accuracy around 99%
- quick
- best modality for ureteric stones
- most information - size and position of stones
  - anatomy
CT Urogram (C-)

- type of stone
  - density of the stone (Hounsefield units)
  - uric acid < 500U
  - calcium >800

- associated pathology

- ultra low dose 1.2 mSv same as a CXR

- other MRI
  - stones not visible
Ultrasound

- accuracy around 80%
- ureteric stones can be missed
- hydronephrosis infers a PUJ/ureteric stone
- ureteric jet present?
- no radiation so preferred for pregnancy or follow-up of recurrent stone formers
Diagnosis – Plain X ray
Initial Management

• need to know
  - stone size and position
  - any signs of infection?
  - single kidney or raised Cr?
  - pregnant?
  - response to analgesia?
Management

- refer acutely if

- signs of infection
- ongoing pain
- significant dehydration
- renal impairment/single kidney
- pregnant
Infection is a Real Emergency

• infection coupled with obstruction

• patients can get sick very quickly - need urgent drainage

• REFER anyone with a stone and a temperature

• image all patients with a pyelonephritis early
Infection is a Real Emergency

Tabitha Mullings

- urosepsis
- delayed treatment
- gangrene of extremities
- 5 months rehab
- $USD18 million
Initial Management

what do you use for analgesia?
Initial Management

• Analgesia
  - NSAID Diclofenac 75 mg unless high Cr
  - Tramadol 100 mg
  - refer for Morphine if not settle

• Fluids
  - increasing fluids does not increase the chance of passing the stone
  - refer if dehydration an issue
Natural History of Ureteric Stones

- ureteric stones  - 80-90% ≤ 5mm pass
  - only 50% proximal stones ≤ 5mm pass
  - usually pass in 6 weeks
  - reimage at 6 weeks
  - refer for removal if not pass or ≥ 7 mm
Renal Stones

- If renal stones are ≥ 7 mm, refer to clinic.
- If smaller, monitor yearly until growth rate is known.
- If smaller, consider removing if travelling often.
- If the stone is peripheral, there may be another reason for the pain.

- If any stone is recurrent, multiple stones, or if the patient is young, refer for further investigation.
Most Expensive Stone?
Most Expensive Stone

William Shatner

Auctioned for $USD25000
Summary

• paraphimosis, epididymitis, retention, some haematuria and small stones may be managed at your surgery

• infected stones, Fournier’s and torsions are medical emergencies

• ultrasounds are contraindicated if you are considering a torsion

• look out for a paraphimosis, they are usually reducible with a penile block

• penile fracture will need surgery and may need encouraging to be referred
Summary

• epididymitis requires bed rest for a few days to avoid aggravating the infection
• all haematuria and male infections need investigating
• beware of nocturnal incontinence in males, often chronic retention
• older patient with flank pain – think AAA
• ultra low dose CT scan have the same radiation as a CXR