

Fex Net Collated Answers:

Urology

1. Flank Pain
2. Flank Pain
3. Flank Pain
4. Paeds- Scrotal Swelling
5. Paeds- Foreskin Swelling
6. Priapism
7. Priapism
8. Post Prostate Biopsy
9. Testicular Swelling
10. Testicular Swelling
11. Paeds- Testicular Swelling
12. Urinary Retention

Question 1:

1- List 4 likely Diagnoses and the 2 features on examination that would lead to you to that diagnosis: (12 Marks)

Diagnosis	Exam feature 1	Exam feature 2
Renal Colic	renal angle tenderness, tachycardia	Colicky pain, Absence of fever or low grade only
Pyelonephritis/ abscess	fever, hypotension,	renal angle tenderness tachycardia, tachypnoea
AAA	pulsatile mass, bruit	hypotension
L1-L2 radicular pain,	midline back pain	neurological deficits
Basal pneumonia-	fever, crackles	hypoxia
Renal artery embolism/aneurysm	Atrial Fibrillation (irregularly irregular pulse) in renal art embolism	Hypotension or mild Hypertension- in renal aneurysm or

2- List 3 potential imaging modalities for this patient and Weigh up 2 pro's and con's of each (15 Marks)

Imaging modality	Pro's (2)	Cons(2)
CTKUB	1. no contrast, 2. allows non-renal causes to be identified (AAA)	1. radiation, cumulative as likely to have recurrent stones 2. If pt unstable with AAA not suitable for scan
USS	1. No radiation, 2.No contrast 3. Safe in pregnancy. 4. non-invasive	1.sometimes cannot see the stone therefore unable to measure the size/ Poor detection of calculi in the distal urethra, 2.lack of availability out of hours

Xray KUB	1. readily available 2. lower radiation than CTKUB 3. good additional test to allow x-ray follow up if radiopaque	1. difficult to differentiate calculi from phleboliths 2. some stones not radiopaque
IVP	1. historically the gold standard 2. can detect non-functioning kidney (AAA, renal art embolism, renal art thrombosis) as well as delayed filling (distal obstruction, extravasation, renal mass, bladder or ureteric tumour or filling defect of radiolucent stone)	1. Contrast allergy, 2. renal injury from contrast 3. contraindicated in multiple myeloma 4. time consuming
MRI	1. no radiation	1. availability 2. usually not in ED accessibility to pt, risk of taking pt with AAA not renal colic to the scanner

3- He is diagnosed with a renal calculi, State 5 criteria that would determine his disposition: (5 Marks)

1. If this is a sole kidney
2. ongoing pain despite adequate analgesia- failure to settle
3. Suspicion of urinary infection
4. High degree of obstruction
5. Size of stone if large urology may elect early surgical management
6. Social considerations, time of day, coping at home

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Question 2

1.

Left small VUJ ureteric stone

Mild hydroureter / hydronephrosis

2.

Fat stranding around left kidney

Enlarged left renal pelvis / ureter

Small stone at left VUJ / bladder wall

3.

Investigation	Justification
Urine dipstick or M/C/S	Exclude urinary infection which would require urgent stent
Urea / creat	Exclude significant renal impairment especially in someone with chronic renal failure (as a complication)

4.

Pain well controlled

No urinary infection

Tolerating oral intake

Follow up arranged

(probably also renal function acceptable)

Question 3(7 /11)

1.

R hydronephrosis

R perinephric fat stranding

Small stone R VUJ

2.

Urine micro – to exclude UTI which would require a stent

Urea, creatinine – determine whether significant renal failure

x-ray KUB – determine whether radio-opaque for surveillance

serum urate – may point to hyperuricaemia as cause for urate stones

3.

- plan to be used when patient presents with symptoms of renal colic

- provide adequate analgesia eg IV morphine 2.5mg aliquots

- check urine to exclude UTI

- check renal function to exclude significant ARF

- manage symptomatically initially:

 If pain settles with above management and no UTI / ARF then discharge no imaging

 If pain not settling then USS first choice to exclude hydronephrosis

- CT unlikely to be indicated in the absence of hydronephrosis
- Involve Urology team prior to ordering CT scan

Question 4 7/12

1

Indirect inguinal hernia – extends from inguinal canal (can't get above it), may contain bowel sounds
– urgent surgery if incarcerated, semi-urgent if reducible

Hydrocele – transillumination, soft, non-tender swelling, normal testis – conservative, most resolve by age 2

Testicular torsion – irritable child, tender testicle, high riding, no cremasteric reflex – urgent surgical correction

Question 5

A 2 year old boy is brought to a suburban emergency department. The mother reports that the child has been increasingly distressed due to pain after the foreskin was retracted that morning. She has been unable to return the foreskin to its normal position.

I. List 2 abnormalities in this photograph.

(2 marks)

- Paraphimosis (Essential)
- Grossly oedematous foreskin
- Plethoric and engorged glans, suggestive of obstructed venous return. High risk of ischaemia. (Essential)

II. Describe three (3) methods for the reduction of the foreskin.

(6 marks, 2 marks for each method)

- Manual traction:
 - Circumferential pressure, to reduce swelling, and distal traction.
 - Consider use of osmotic agents (i.e. sugar) to reduce swelling.
- Aspiration of paraphimosis:
 - Requires penile block or sedation
 - Multiple needle pricks to allow drainage of oedematous foreskin.
- Surgical:
 - Dorsal slit (Cosmetically undesirable)
 - Circumcision.

III. Describe the technique for a penile block.

(4 marks)

- Consent
- Sterile technique
- Local anaesthetic: Bupivacaine 0.25% 0.1ml/kg
- Injection site:
 - Dorsal nerves of penis
 - Pull penis downwards
 - Inject perpendicular to the skin at 10:30 & 01:30 0.5-1cm lateral to and caudal to the pubic symphysis.
 - Caution with regards to dorsal penile vessels

Ref: Smith's anaesthesia for infants and children

QUESTION 6 (11 marks)

A 56 year old man presents to the ED with priapism. He states he has had an erection without arousal for the past 7 hours.

- i. What complications can occur if this condition is untreated [2 marks]

- Erectile dysfunction
- Dysfiguration of penis

- ii. Describe the role of cavernosal blood gas analysis in determining the cause of priapism (2 marks)

- Gas analysis on cavernosal blood aspirated from the corpus cavernosum differentiates ischaemic from non-ischaemic forms of priapism. Ischaemic type needs urgent intervention. Typical pH cut-off is 7.25

- iii. List 2 other investigations that might be indicated. Provide a brief justification for each (4 marks)

- FBC/film - haematological causes - myeloma, sickle cell disease, leukaemia, thalassaemia
- Biochemistry – to seek causes like CKI/dialysis, gout, hyperlipidaemia, diabetes
- Malaria films
- Doppler ultrasound – as an alternative to gas analysis to differentiate ischaemic/non-ischaemic

- iv. You are in a small hospital with no urological service. Outline your emergency department management of this condition [3 marks]

- Ice blocks/local pressure
- Analgesia: perform penile block
- Aspirate up to 50mL blood from each corpus cavernosum via butterfly needle and syringe
- Injection with phenylephrine (1ml/1000mcg in 9ml normal saline), inject 0.5ml into corpus cavernosa and apply pressure
- Other sympathomimetic/alpha-agonist drugs acceptable – must be in a dilute solution
- Oral terbutaline 5-10mg
- Consult and transfer for urological care

Question 7 -

Priapism

Answers

Answers History of perineal trauma (penile #, coital injury), spinal cord injury

Prior episodes

PMH_x – sickle cell disease, thalassaemia, multiple myeloma, malignancy

Prior urologic surgery / prostheses

Medications (anticoagulants, impotence agents, illicit drugs, anti-hypertensives, anti-psychotics)

(b) IV opioids

Dorsal penile nerve block / circumferential penile block

(c) Aspiration of corpus cavernosum

Cold saline irrigation

Injection of α -agonist (eg phenylephrine, adrenaline)

Urologic consult for surgical penile decompression if above measures fail

Question 8

1. E. coli – 1 mark

Issues

- ♦ Easy question
- ♦ NB commonest infection in this setting is urosepsis NOT prostatitis Pitfalls:
 - ♦ Not specifying the ORGANISM eg just a comment eg “sepsis”, prostatitis

2. Initial ED management

- ♦ Scope to display knowledge and high level considerations
 - ♦ Eg special situations:
 - ♦ Impaired renal function
 - ♦ Penicillin allergy
 - ♦ Multi-drug resistance suspected
- ♦ PASS
- ♦ IV
- ♦ G/M 4-5mg/kg modify if reduced Cr Cl
- ♦ Ampicillin 2g 6/24
- ♦ Extra marks:
- ♦ G/M as single agent if allergic to penicillin
- ♦ If can't use G/M: ceftriaxone
- ♦ If multi-drug resistance: meropenem

2+2 marks

Issues

- ♦ Not done as well as expected
- ♦ Only one candidate did very well

Pitfalls:

- ♦ Doses G/M 12mg/kg
- ♦ Oral antibiotics only
- ♦ No consultant level considerations eg renal impairment, allergy, multi-drug resistance

3. In critically ill patients presenting to the emergency department with early septic shock, EGDT did not reduce all-cause mortality at 90 days.

- ♦ (noted in the study: early antibiotics of benefit)
- ♦ **2 marks**

Issues

- ♦ Big Australian study
- ♦ Responding to a controversial issue
- ♦ NEJM
- ♦ Many of the hospitals you work in will have been involved
- ♦ Can't read any journal at present without seeing something about this study!

4. PASS:

- ♦ IV access (peripheral / central)
- ♦ +1 other sensible use
- ♦ IVC measurement: intravascular volume status
- ♦ Cardiac function: sepsis
- ♦ Hydronephrosis

Question 9

Questions:

Answer 1:

Diagnosis	Features
Testicular torsion (Pass/fail)	History: sudden onset Exam: Transverse lie, loss of cremasteric reflex
Epididymo-orchitis	History: Known STD, dysuria, discharge Exam: Warm hemiscrotum, temp
Torted appendix testis	History: may have local trauma Exam: Blue dot sign
Direct inguinal hernia	History: Known hernia, post valsava Exam: Cough impulse, bowel sounds on auscultation

2- You phone the surgical registrar on call to request that he review the patient urgently in ED. The surgical registrar states he will not come to review the patient until you have the results of an ultrasound of the testes.

Briefly describe your approach to this situation.

(5 marks) 3/5

This is a time critical clinical event.

USS assessment is secondary to clinical assessment by a surgeon for suspected torsion of testis and need for urgent de-torsion in theatre +/- orchidopexy.

USS is reserved for cases where the surgeon does not feel urgent OT is required or an alternate diagnosis is more likely.

Urgent escalation to the Surgical Consultant to arrange clinical review of the patient prior to any further investigations.

Feedback to the surgical team at a later stage with respect to the inappropriate refusal of the surgical registrar to review the patient in a timely fashion.

Review of existing guidelines for acute testicular pain in the ED.

Passmark = 12/17 (adjust to /10)

(7/10)

Question 10 9/11

1

Urine dipstick / micro / cell count – looking for UTI as cause of epididymo-orchitis

Urine PCR – chlamydia / gonorrhoea – for STI causing epididymo-orchitis

Renal function – potentially avoid gentamicin if renal failure

USS – exclude abscess complicating epididymo-orchitis

2

Epididymo-orchitis

3

Sepsis – ie unwell

Complicated by abscess

Co-morbidities decreasing cardiovascular reserve – eg significant CCF

Severe pain

Social circumstances eg homeless / unable to get follow up

Failure outpatient management

4

Analgesia – paracetamol 1q QID, ibuprofen 400mg tds

Oral Abs – trimethoprim 300mg nocte 1/52, ceftriaxone 500mg once IM, azithromycin 500mg oral now and on one week

Question 11 : (12

marks) Passmark =

9/12. List 4 differential diagnoses other than testicular torsion? (4 Marks)

Torsion appendix testes
Orchitis/Epididymo-orchitis
Trauma (Haematoma, Testicular rupture)
Renal colic
Inguinal hernia

**2. After review of the patient you are concerned that he has a testicular torsion.
List your 3 most important management priorities for this patient. (3 Marks)**

Analgesia – appropriate agent & dose required
Urgent referral and transportation to centre that will operate on 7yr old for exploration in theatre
NBM

**3. The registrar looking after the patient reports back to you that the surgical registrar at the local receiving hospital is refusing to accept the patient because there are no beds in the hospital.
What actions will you take to ensure the patient receives appropriate care? (5 Marks)**

Arrange transport to local receiving hospital – private vehicle or ambulance – no delay
Speak to ED consultant at receiving hospital to advise of time critical emergency & need for immediate transfer
Speak to Surgical Consultant at receiving hospital and escalate to medical superintendant of both hospitals if necessary
Documentation of refusal & your escalation of management
Medical Superintendant informed
Make appropriate report –PRIME
Consider using as M&M case
For review post event to ensure appropriate WUG to avoid unnecessary delays in time critical emergency

Question 12

What is the diagnosis? (1 mark)

Urinary retention

Name 4 causes of this condition, each from a different category (4 marks)

Infective – e.g. UTI

Medication – e.g. anticholinergic

Neurological – e.g. cauda equina

Structural – e.g. BPH / haematuria / phimosis

Inefficient detrusor muscle (usually with above precipitant, or even fluid challenge etc)

In standard circumstances, how is this condition diagnosed? (2 marks)

Voiding difficulty +/- lower abdominal pain

Post-void residual volume > 300mL

You are unable to insert an indwelling catheter and decide to insert a suprapubic catheter. Outline the steps involved in performing the procedure (6 marks)

-
- Confirm and bladder position with bedside US
 - Position supine / Prep and drape / sterile gloves
 - Infiltrate local anaesthesia 2cm above pubic symphysis
 - insert needle until aspirate urine
 - direction ~perpendicular (more cephalad in children, more caudal in adults)
 - Core steps
 - Needle to bladder / introduce wire / scalpel to skin / dilator / catheter / split away sheath
 - Scalpel incision / firm pressure into bladder with trocar, remove trocar / insert catheter / split away sheath
 - Post-procedure: Attach collection bag / dress skin / cares and follow up organised

