e-QuEST Teleconference August 2017

Gabrielle Mane
ECI Advanced Trainee
Emergency Care Institute

Case 1 - triage…..

- 80 year old female
- Presents with abdominal pain & vomiting since breakfast

- Triage – observations on arrival around 12pm
  - BP 180/80, HR 75, temp 36.0, RR 30, O2 sats 97% RA
  - BSL 8.0; mildly confused

- Triaged as category 2 due to severe pain

Case 1 - ED assessment

- Further hx
  - Pain started after breakfast – generalised abdominal pain
  - Associated with vomiting x 3
  - No diarrhoea – bowels last open yesterday
  - No fevers or other symptoms noted
  - PMHx – GORD, osteoporosis, previous hernia repair
  - Meds - atorvastatin, pantoprazole, vitamin D
  - Lives independently; non smoker / non drinker

- On examination
  - Generalised abdominal pain with mild guarding

Case 1 - further assessment

- CXR / AXR – no free gas under diaphragm, no distension of bowel loops or obstruction; some faecal loading

- Bloods showed
  - WCC 16
  - VBG – pH 7.45, pCO2 35, HCO3 21, lactate 2.5

- Management
  - Kept NBM, IV fluids, analgesia
  - Surgical review requested around 2pm

Case 1 - further assessment

- Whilst awaiting surgical review
  - Desaturates to 88%RA - O2 applied
  - Further analgesia required (total 10mg morphine)
  - Remains nauseated
  - Given total 3L crystalloid

- CT abdomen arranged at 4pm which shows
  - Closed loop bowel obstruction and evidence of bowel infarction
  - Urgent surgical review requested again once results available at 5pm

Case 1 – surgical review

- Surgical review around 6pm
  - Planned for laparotomy
  - NGT and IDC requested
  - Rpt lactate 2.9 at this time
  - Vital T 35, BP 140/70, HR 95, RR 34, O2 sats 92% on 4L NP
  - Nil antibiotics requested at this time

- Laparotomy at 7pm
  - Ischaemic small bowel found and resected with end to end anastomosis; division of adhesions

Case 1 – surgical review

- Post operatively
  - Deteriorates overnight
  - Commenced on triple antibiotics (amp/gent/flagyl)
  - Requires inotropes (noradrenaline infusion)
  - Pt conscious and requesting full resuscitation at this time
  - Retrieval service contacted for transfer

- Retrieval arrive around 9am – intubated for transfer
- Pt returns to rural facility around 1 week later
- Discharged home after several days

Case 1 – points for discussion

- Can we do better?
  - Would earlier recognition and surgical intervention have made a difference – i.e. prevented deterioration and need for transfer
  - Should patient have received antibiotics earlier
  - How to recognise ischaemic gut earlier
  - How to speed up surgical consultations

Abdominal pain in the elderly – some pitfalls in assessment

- May have “normal” vital signs despite being unwell
  - Temp – don’t always have a fever (or may be hypothermic)
  - HR – may not be tachycardic due to meds e.g. β-blockers
  - Less physiological reserve

- May not have “classical presentations” of abdominal pain
  - Nerves, including pain fibres, don’t work as well with increasing age
  - Pain may be more diffuse or difficult to localise
  - May appear to have pain that is less severe than expected
  - May be on painkillers for other conditions which mask their pain
  - Comorbidities may confound or mask diagnoses
  - Often on multiple medications including anticoagulants
  - May be slower to seek medical attention

Abdominal pain in the elderly – some pitfalls in assessment

- Investigations may be difficult to interpret
  - Immune system is less responsive – WCC may be normal
  - WCC in the urine are common
    - Not all WCC or bacteria in the urine is due to a UTI

- Consider the bad diagnoses first!
  - Aortic emergencies – ruptured AAA, aortic dissection
  - Perforated viscous, including perforated ulcer or appendicitis

- Avoid the diagnoses of exclusion until more significant diagnoses have been definitively ruled out
  - Avoid diagnosis of constipation, gastroenteritis, IBS or chronic pain
  - Most elderly pts with abdominal pain should have a CT abdomen!

Abdominal pain in the elderly – Diagnoses

- Acute abdominal conditions that occur in all age groups, will also occur in the elderly
  - Peptic ulcer disease is common in elderly
    - Approx 50% present with complications – bleeding or perforation
  - Approx 10% of appendicitis occurs in the elderly
    - More likely to have complications such as perforation

- Common conditions in the elderly that may need surgery
  - Biliary disease – choledocolithiasis, cholecystitis, cholangitis
  - Small bowel obstruction - due to adhesions, incarcerated herniae, malignancy

- Some conditions have a higher prevalence in the elderly
  - Aortic emergencies – ruptured AAA, aortic dissection
  - Mesenteric ischaemia
  - Diverticulitis
  - Large bowel obstruction - secondary to malignancy, diverticulitis or volvulus

Abdominal pain in the elderly – Mesenteric ischaemia

- Ischaemic gut can be classified anatomically into
  - Small bowel ischaemia (mesenteric ischaemia)
  - Large bowel ischaemia (ischaemic colitis)

- Causes - thromboembolism, thrombus or hypoperfusion (low BP or vasospasm)
- Risk factors include age (> 60 yrs), AF, recent AMI, valvular heart disease

- **Mesenteric ischaemia** is the more serious condition (due to possibility of bowel necrosis)
  - Sudden onset severe abdominal pain, colicky then constant; may have diarrhoea
  - **O/E**: often afebrile, abdomen may only be mildly tender (pain out of proportion for exam)
  - **Ix**: WCC often elevated; lactate may be elevated (75% sensitive, 45% specific)
    - NB: normal lactate does not rule out ischaemia
    - AXR may show thumb-printing or bowel wall thickening (later on, gas in bowel wall)
  - **CT angiography** is the investigation of choice; may see changes on plain CT abdomen
  - **Mx**: IV fluids, analgesia, broad spectrum antibiotics (ampicillin / gentamicin / metronidazole)
  - Definitive treatment depends upon location and cause - usually laparotomy

Case 2- triage…..

- 75 year old male
- Woken early in the morning with abdominal and back pain
- BIBA to small rural facility

- Triage – observations on arrival around 5am
  - BP 120/75, HR 75, temp 35.9, RR 18, O2 sats 97% RA

- Triaged as category 2
- GP VMO (locum) promptly attended to review pt

Case 2 - ED assessment

- Further hx
  - Woken from sleep with abdominal and back pain around 4am
  - Visiting relatives who live near small rural town
  - Recent admission to a private hospital in Sydney for UTI
    - Pt not sure of further details of admission except for an “aneurysm on the kidney”
  - PMHx – hypertension
  - Meds - telmisartan, atorvastatin

- On examination
  - Looked pale, now hypotensive at 90/65, HR 100 at time of MO R/V
  - Generalised abdominal pain

Case 2 - ED treatment

- Given IV fluids (500mL bolus) and BP improved
- POCT showed Hb 70

- Differential diagnosis at this stage
  - Ruptured / leaking AAA
  - Sepsis - possibly urosepsis

- Blood transfusion arranged and 2U PCC commenced
- Retrieval service contacted and team deployed
- Attempts made to obtain further information from private hospital and usual GP were unsuccessful

Case 2 – retrieval team

- Retrieval team arrived around 9am
- Bedside ultrasound performed and no free fluid seen
- Provisional diagnosis of sepsis made
  - AAA not felt to be likely
- Decision made to transport pt to nearest base hospital (general surgeon, no vascular surgeon)

Case 2 – base hospital

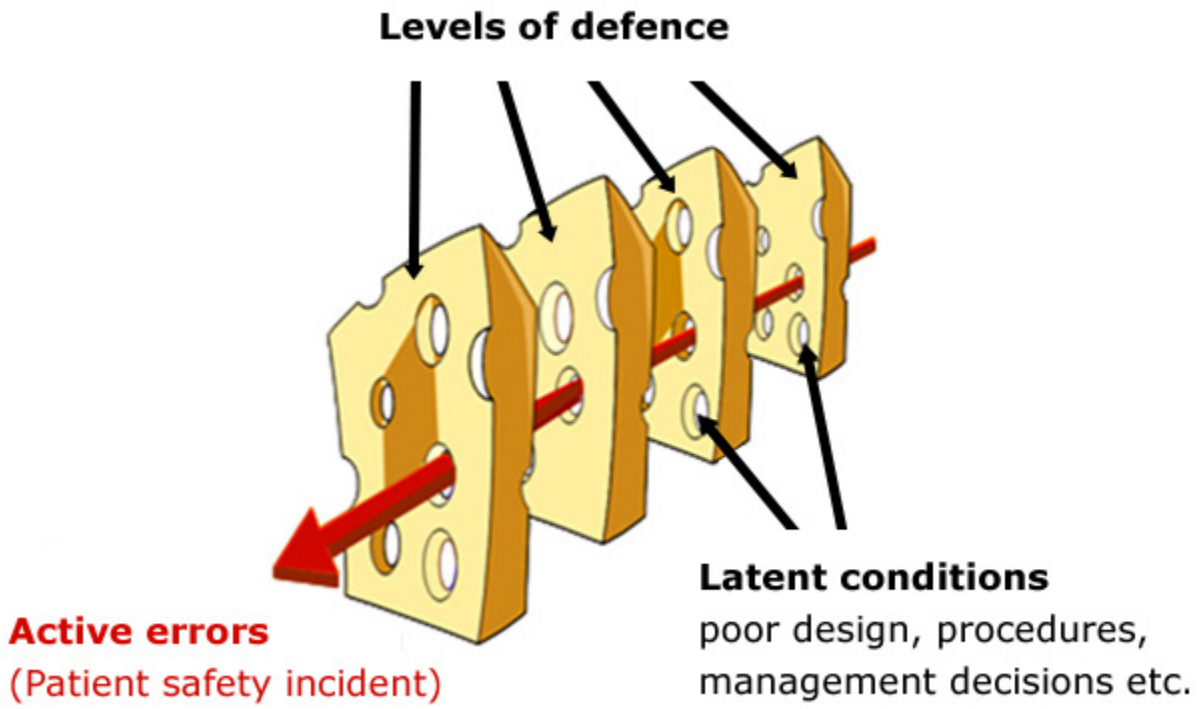
- Arrived at base hospital around 11am, triaged as cat 2 in ED
  - Seen by ED doctor – provisional diagnosis of urosepsis
  - Issues in ED
    - Hypotension (now on noradrenaline infusion)
    - Acute kidney injury
    - Metabolic acidosis
    - Ongoing abdominal and back pain
- CT abdomen arranged and showed a leaking AAA
- Pt became pale, diaphoretic shortly after
  - PEA arrest; ROSC obtained
  - Pt was too unstable to transfer to another facility for vascular surgery
  - Palliated and passed away in the evening

Points for discussion

- Making the diagnosis
  - Be aware of the limitations of bedside ultrasound

- Transfer issues in rural setting
  - Consideration of appropriate facility to which pt will be transferred
  - Adequate communication and handover with this retrieval team and facility to which patient is being transferred

“Swiss cheese” model



Abdominal pain in the elderly – AAA

- Incidence in population is 2%; around **10%** in men aged > 65 yrs
- 80% are asymptomatic; usually advised elective repair if > 5cm
- "Typical presentation" seen in < 50%
  - Typically presents with abdominal / back pain, hypotension, pulsatile abdo mass
  - **Consider AA A in any elderly pt with abdo pain, back pain, syncope or shock**
- Some studies show up to 30% of AAAs are missed initially
  - Most commonly misdiagnosed as renal colic
- POCUS is sensitive for detecting AAA (90-100% sensitive if aneurysm > 3cm)
  - Cannot tell you if a AAA is leaking or not; presence of free fluid is a bad sign!
- **CT aortogram** is needed for diagnosis and to determine if leaking or not
  - CT should not be done if the patient is unstable (should go straight to OT)
- Definitive treatment is **surgical**
- Mortality is around 80% in ruptured AAA
  - 60% die before reaching hospital, approx 45% who reach hospital will not survive

Further resources

Academic Life in Emergency Medicine – Ten tips for approaching abdominal pain in the elderly
https://www.aliem.com/2013/10/ten-tips-for-approaching-abdominal-pain-in-the-elderly/

Magidson PD, Martinez JP Abdominal pain in the geriatric patient. *Emerg Med Clin N Am* 34 (2016): 559-574

Spangler R, Pham TV, et al Abdominal emergencies in the geriatric patient. *Int Journal Emergency Medicine* 2014 7:43

Millet I, Sebbane M, et al Systematic unenhanced CT for acute abdominal symptoms in elderly patients improves both emergency department diagnosis and prompt clinical management. *European Radiology* 2017: 27(2): 868-877