Session Aims

- Define acute, subacute& chronic presentation
- Focus on assessment of common problem
- Learn risk assessment for serious causes
- Nonspecific back pain in detail
- Detail on not to miss diagnosis
introduction

- Very common problem:
  - second after URTI to primary health
  - Commonest work-related disability <45
- Only about 5% have a serious cause
- Need to ID serious cause & avoid over Ix and ‘medicalising’ nonspecific
- Easiest to use a system of identifying risk factors, mainly Hx, some Exam
- Rarely needs Ix, need to know who
DEFINITIONS

- Acute = <6/52
  - 80-90% resolve
- Subacute = 6-12/52
- Chronic = >12/52
NOT TO MISS DIAGNOSES

- **VASCULAR**
  - AAA, Thoracic Aortic Dissection
- Infection
  - Epidural abscess, osteomyelitis, discitis
- Osteoporotic crush #
- Malignancy
- Compression syndromes
  - Cord, cauda equina, conus medullaris
CAUSES - SPINE

- Musculoskeletal – m. spasm, ligament
- Disc - >90% L4-5/L5-S1
- Osteoporotic crush #
- Malignancy
CAUSES - INFECTIOUS

- Osteomyelitis – bacterial, TB
- Epidural abscess
- Discitis
CAUSES-NON SPINE

- Vascular – dissection, leaking aneurysm, AMI
- Pancreatitis
- PE
- Renal – PNR, colic
- (Non-organic)
General risk factors - HISTORY

- Pain >6/52
- Age<18, >50 (tumour, infection)
- Minor trauma in elderly (crush #’s)
- Fever, rigours
- Weight loss (tumour, infection)
- IVDU
- Immune compromise
- Nocturnal pain, pain at rest
- Incontinence
- Saddle anaesthesia
- Past Hx cancer
General risk factors - EXAM

- Fever, writhing in pain (infection)
- Anal sphincter laxity (compression)
- Perineal Sensory loss
- Major motor weakness (nerve root or cord compression)
- Positive SLR (disc herniation)
RISK ASSESSMENT

• Aortic dissection, rupturing AAA, spinal epidural abscess and PE most commonly don’t present in a classical way

• The best way to make these diagnoses is by specifically considering them and looking for risk factors
EXAMINATION

- Vital signs are important!
- Examine the abdomen
- The back itself
- Neurological examination
- Straight leg raise
- Consider PR examination
Examination of the back

- For evidence of infection (skin etc.)
- Point tenderness
  - for infection and fractures
  - sens 86%, spec 60%
- Range of motion not helpful
## Lower limb neuro exam

<table>
<thead>
<tr>
<th>NERVE ROOT</th>
<th>L4</th>
<th>L5</th>
<th>S1</th>
</tr>
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<tbody>
<tr>
<td>MOTOR</td>
<td>QUADRICEPS</td>
<td>DORSIFLEXION GREAT TOE &amp; FOOT</td>
<td>PLANTAR FLEXION GREAT TOE &amp; FOOT</td>
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<tr>
<td>SCREENING TEST</td>
<td>RISE FROM SQUAT</td>
<td>HEEL WALKING</td>
<td>TOE WALKING</td>
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<tr>
<td>REFLEX</td>
<td>KNEE</td>
<td>-</td>
<td>ANKLE</td>
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</tbody>
</table>
dermatomes

- For L4 test anterior lower thigh
- L5 test lateral calf
- S1 posterior calf and lateral foot
Distribution of pain

L4

L5

S1

Far lateral disc herniation

Routine L5/S1 Disc herniation
Determining level of cord compression

- Establish a sensory level
Straight Leg Raise

- Lie pt. down, passive leg raise, knee extended
- Stop when patient says to, note where pain is
- Dorsiflex ankle at this point
- True positive is:
  - Sciatic or radicular pain below knee
  - Not back pain or buttock pain
  - Pain elicited before hamstrings move pelvis
- Specific not sensitive for disc prolapse
PR examination – who gets one?

- Anyone with faecal retention, incontinence, saddle anaesthesia
- Consider in anyone with severe pain
- Any neurological deficit
- Looking for:
  - Mass (prostate, rectal) and rule out abscess
  - Rectal tone and saddle sensation (compression)
‘Nasty’ diagnoses reminder

- **VASCULAR**
  - AAA, Thoracic Aortic Dissection
- **Infection**
  - Epidural abscess, osteomyelitis, discitis
- **Osteoporotic crush #**
- **Malignancy**
- **Compression syndromes**
  - Cord, cauda equina, conus medullaris
Thoracic Aortic Dissection

- **Classic Hx:**
  - sudden onset, tearing chest pain, radiates interscapular
  - less than 1/3

- **Examination:**
  - HTN (1/3 normal BP),
  - BP dif. Arms >20 (?25%, often in normal people)
  - new diastolic murmur (sens. 28%)

- Most signs AFTER the catastrophe!
Ruptured AAA

- Classic triad:
  - Abdo pain, low BP, pulsatile mass
  - <20% of patients
- can be LLQ pain, flank pain, isolated back pain
- Leads to misdiagnosis:
  - as diverticulitis, PNR, colic, musculoskeletal
  - leads to mortality of 75%
- abdo mass palpation sensitivity may be 45%
Aortic catastrophe risk factors

- Usual vascular RF’s:
  - Male, old age, HTN, Smoking

- Aortic abnormalities:
  - Connective tissue disease, chromosomal abnormalities, inflammatory aortic conditions, bicuspid aortic valve, aortic instrumentation

- PREGNANCY

- Illicit drug use – esp. cocaine, amphetamines
pitfall

- Aortic catastrophes (dissection and AAA) can present with neurological symptoms
- In 18-36% pt.s with dissection!
  - Acute stroke
  - Unilateral leg weakness (radicular artery)
- About 5% AAA rupture pt.s
  - Haematoma around AAA pressure on femoral n.
  - can cause weak hip and knee flexion
Aortic imaging guidelines

- AAA exclusion needs to be done in any elderly patient with new onset severe back pain.
- Ultrasound can be used to determine size of aorta (ED ultrasound widely used for this)
  - Doesn’t determine leak or rupture
  - Normal size aorta won’t do this
- Age greater than 55 and severe back pain?
  - Use CT to diagnose renal colic or diverticulitis
EPIDURAL ABSCESS

- classic triad:
  - fever, back pain, neurological deficit
- occurs only 13%
- 75% afebrile,
- 2/3 normal initial neurological exam
  - Risk factor Ax best chance ID before neuroprob
Epidural abscess risk factors

- Recent epidural/spinal anaesthetic**
- Generally related to immunocompromise
  - Normal immune reaction leads to symptoms!
- Diabetes
- Alcoholism
- Chronic renal failure
- Steroid use
- HIV/AIDS
- IVDU
● Staph most common isolated organism
● About 1/3 gram negative
● Requires prompt antibiotic treatment
  ● GN requires 3rd generation cephalosporin
  ● GP requires Blactamase stable penicillin
    ● and consider vancomycin if ?MRSA
● Needs urgent
  ● Confirmation of diagnosis – MRI now
  ● surgical consultation:
  ● May do biopsy to isolate organism B4 AB’s
Spinal metastases

- Risk factor is malignancy of any type
- Commonest are prostate, breast, lung
- Also MM, lymphoma, RCC, bowel

- Need to think about cord compression
PE

- Can present as back pain
- Should also do a risk factor assessment for thromboembolism
- This is a talk for another day!
INVESTIGATION - bloods

- Looking for infection
- FBE can be normal, but…
- ESR always elevated, ?CRP too
IMAGING - Xray

- Very few indications according to some for Xrays to investigate non-traumatic back pain
- Possible indications:
  - For suspected fracture, tumour, infection
  - Can’t be relied on to exclude:
    - Sensitivity spine met.s only 60%, 17% cord compression Xray normal, 2/3 osteomyelitis normal first 7-10/7
- Oblique views are NOT necessary
  - Extra radiation and insensitive
CT

- Sensitive for spinal metastases, fractures
- Can identify disc prolapse, but
  - Inferior to MRI
  - Doesn’t show cord or spinal canal well
MRI

- Only investigation able to exclude compression syndromes
- For suspected infection
- For soft tissue tissue tumours
Disc Prolapse

- most important issue is motor radiculopathy
  - only 2-3% of acute lower back pain have this
- need prompt referral, urgent MRI & surgeon r/v
  - within a week probably reasonable
- 95% are at L4/L5 or L5/S1
  - Neurology at lower level eg. L4/L5 causes L5 lesion
- Acute surgical indications for motor symptoms
- Isolated sensory problems generally not a problem
NONSPECIFIC BACK PAIN

- Preferred terminology to ‘sprain/strain, mechanical, lumbago’
  - (most people never get more specific diagnosis, no histopath ‘strain’)
-Usu. mild to moderate pain
-Exacerbated by movement, relieved with rest
-Often minor exertion, lifting, may not be any clear etiology
Management - EXPLANATION

● Explain reason for lack of imaging:
  ● Pathology not important

● Reason for not admission:
  ● normal activities better than exercise or bed rest

● What to do and not to do
  ● leg lifting not back
  ● in and out of bed
  ● not heat & massage for 24H

● Explanation re use of pain killers

● Likely time course and GP follow up
Mx - analgesia

- Paracetamol first line, regular
- NSAID’s not significantly better, more SE’s
- Avoid ketorolac in:
  - elderly, risk renal failure, peptic ulcer disease
- Opiates for:
  - moderate to severe pain, short term, GP consultation
- ‘muscle relaxants’ eg diazepam:
  - controversial
  - not better than NSAID’s, no added benefit
Opiates and permits

- It is a requirement of Department of Human Services, Health Insurance Commission, and Medical Practitioners Board of Victoria that any opiate prescription beyond short term requires permit with ONE medical practitioner.
- Illegal and unprofessional to prescribe purely to maintain dependence or avoid withdrawal.
  - Unprofessional to label someone a drug addict and leave them in pain.
  - In the ED best to refer to the senior doctor on duty
  - In the ED best to have a culture/policy of no repeat scripts regardless of the excuses for missing medication
  - Showing compassion and limited amount to allow patient to see their GP next working day is professional
  - The GP has a duty of care to see that patient urgently and take them out of the doctor shopping loop.
- Appropriate documentation of management plan, including timeframe to cease opiates, referral to appropriate specialist
- Appropriate confirmation of identity
- Doctor shopping hotlines
- Active market to sell these drugs.