



Determination of “Red Flags” for serious spine disease. [Trauma, infection (TB), neoplasm.]

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Disclosure information



I have no disclosures



Learning Objectives

- A couple of case examples from Namibia.
(try to identify the red flag)
- How to approach the patient complaining of Back pain
- Identifying “red flags” i.e. which patients need urgent further work-up

Case 1: Mr. ST - 57 y.o. male, retired

- C/o Thoracic back pain >1 year
- Multiple GP visits, Specialist Physician
- X-rays reported normal; sent for Physio for 3/12
- When should blood investigation be requested?
- When should one request a MRI?

Thank you for the referral

X-RAY THORACIC SPINE:

Normal thoracic kyphosis.

The intervertebral disc height and vertebral body heights are preserved.

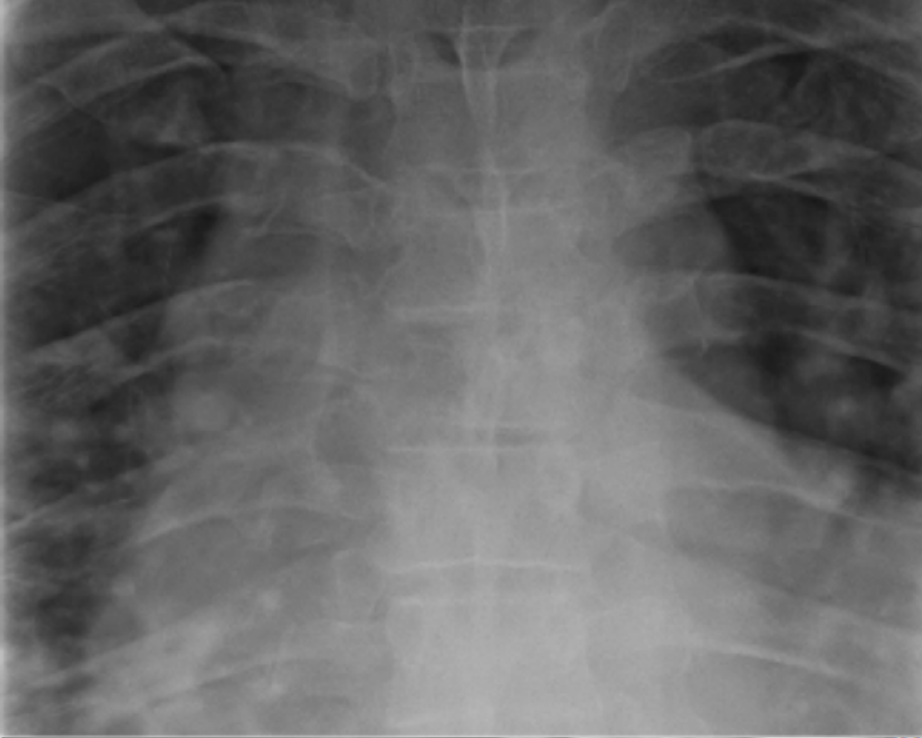
The spinous processes and pedicles are aligned.

Hb = 13

WCC = 4.6

ESR = 20

CRP = 1.5



Metastatic Adenocarcinoma

Mr. ST - 57 y.o. male, retired:

Learning points

- Learn to interpret standard x-rays yourself, then read the report to see what you missed
(or the radiologist missed)
- Thoracic back pain is less common and warrants further attention
- Before this case, and in last 16 years I assumed it was **NOT** possible to have a tumour without a raised ESR / CRP.
- Develop a gut feel / sixth sense.... Early MRI indicated in some cases

Case 2: Mr DJ - 77 year old male

- Retired foreign national living in Namibia
- Last 3/12 regularly been to GP with new onset focal back pain (T12-L2 region)
- +’ve Haematuria
- X-ray reported as normal
- U-sound abdomen reported as normal

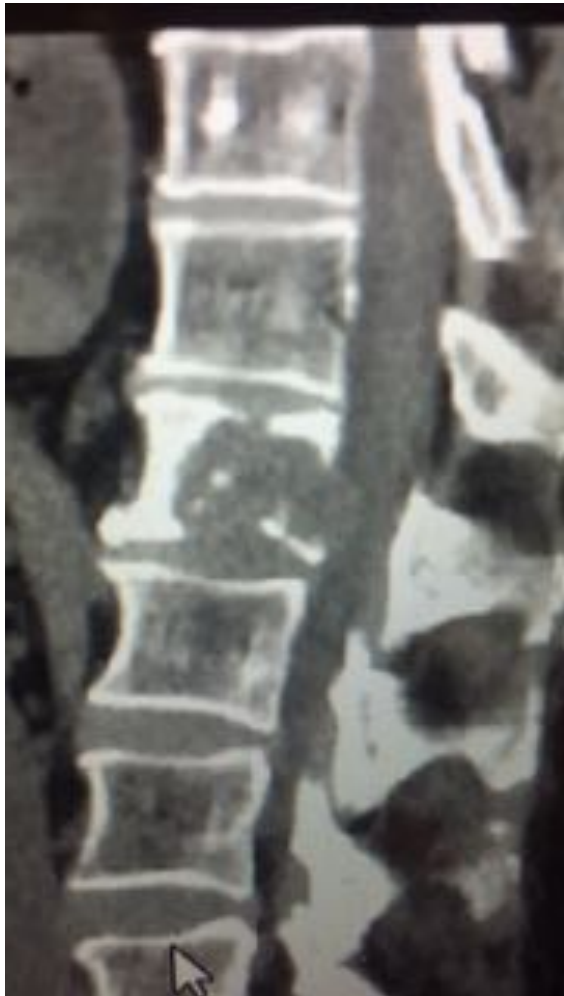
- Referred to “GP pain specialist”
 - GP pain specialist proceeded to inject facets / rhizotomies around L1, and did NOT request a MRI scan as they wanted to contain costs.
- 2 weeks after injection admitted with severe LBP and CT scan requested looking for kidney stones.....

Thank you for the referral. 77-year-old patient with chronic back problems. Now severe pain right flank for 2 days, and haematuria. Query renal stone.

CT KUB:

Large, destructive lesion involving the L1 vertebral body, with involvement of the right pedicle, and associated pathological fracture. This is suggestive of a metastatic lesion.

CT Scan done to confirm Kidney stones



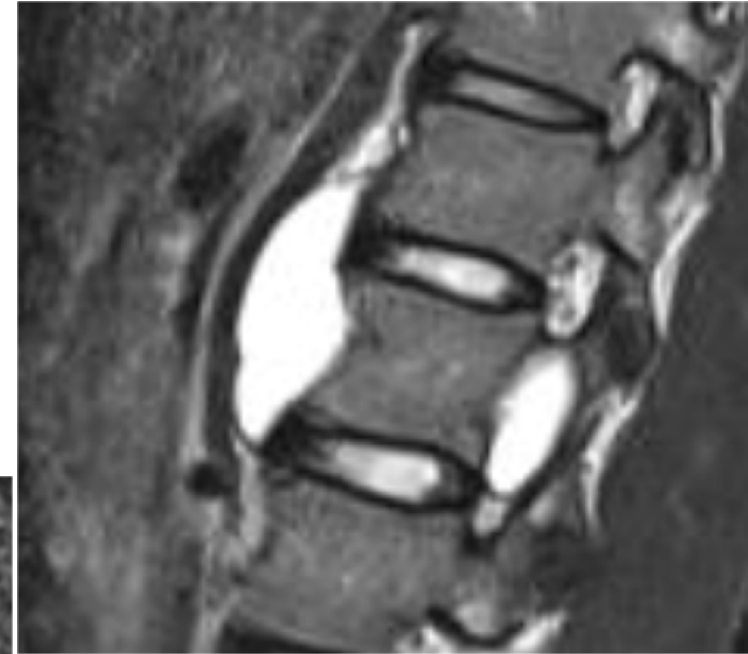
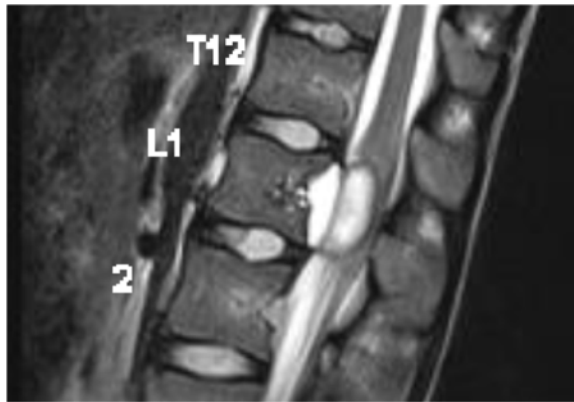
Learning points Mr. JD

- Sudden onset focal back pain in advanced aged (77) Metastasis must be in differential.
- “Pain specialist” Know who you are referring to – these practitioners also need to know their limitations and refer if “out of their depth”.
- Don’t take short cuts to “save money” – if patient needs investigation – do it!

Case 3: Mr. JK -18 year old male

- Presented to rural hospital 8 months ago with urinary retention.
- Urinary catheter inserted and sent home
- 4 months later still urinary retention, now also needs crutches to walk
- Sent to Windhoek Orthopaedic Dept where lumbar x-rays are performed and reported as normal – sent home
- 4/12 later sent to Spine Clinic – MRI requested

Hydatid Cyst Disease of the Spine



Learning points Mr. JK

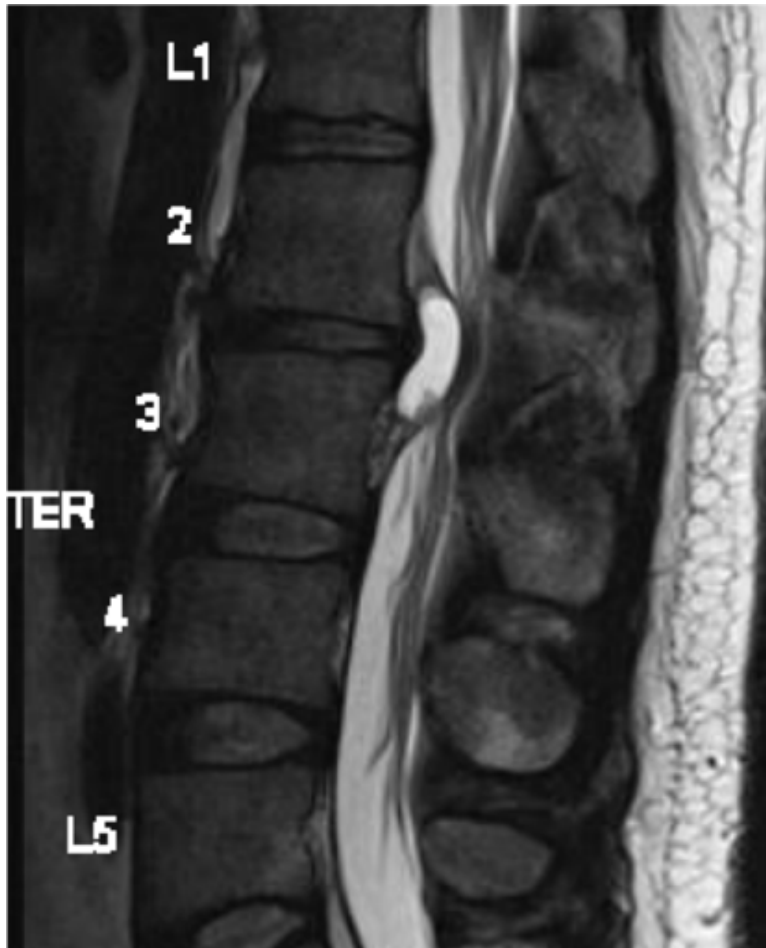
- 18 year old with gradual onset urinary retention is **NOT** normal
- 18 year old needing crutches to walk is **NOT** normal

Case 4: Mr. DK - 52 year old male



- Lawyer
- Known with “treated Prostate CA” – cured according to pt....
- Severe back & left leg pain L2 nerve
- Cannot walk, stand – 6/52 history
- Maximal pain killers
- +’ve femoral stretch..... Left
- How long conservative Mx?
- MRI? Bloods?

Diagnosis?



Learning points Mr DK

- Previous confirmed prostate CA
- Maximal pain killer
- (Diagnosis: - Ganglion Cyst)

Case 5: Mr. MM (x-ray 2016)

- Referred by GP with 1 year history of lower back, right buttocks, right anterior thigh pain.
- Needs a crutch / walking stick to mobilize
- Exhausted conservative management option according to his GP.



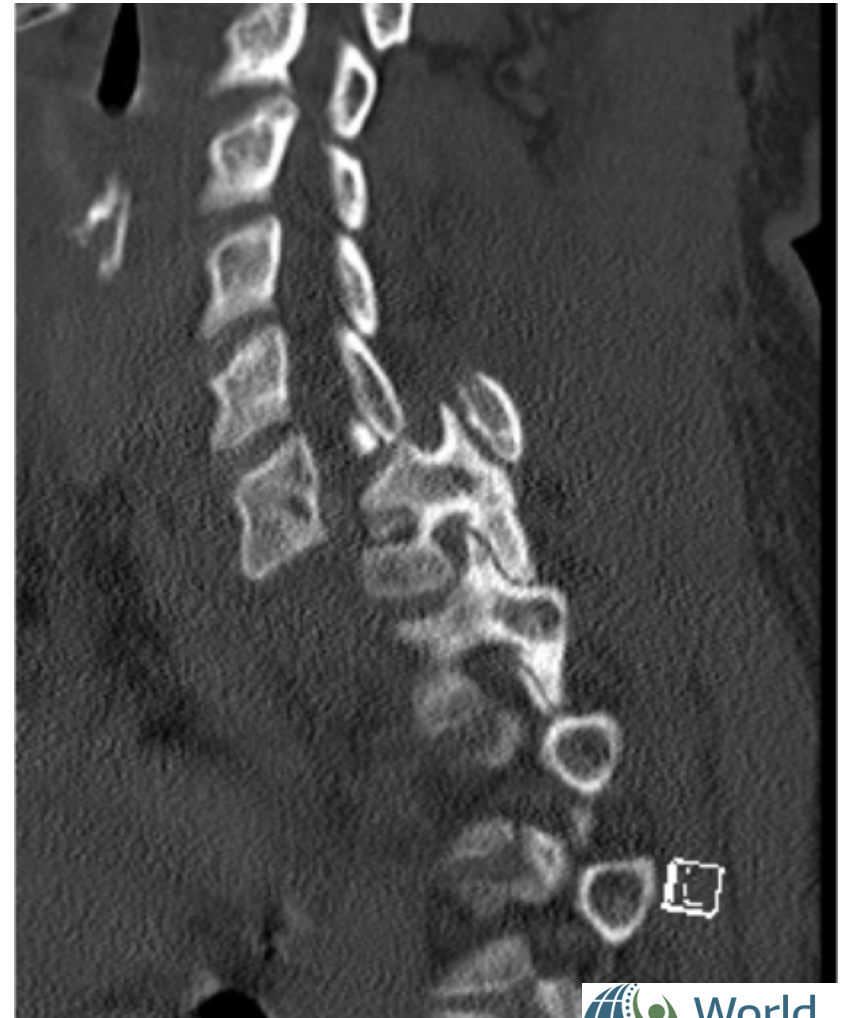
On drug history it is established that GP prescribed **oral steroid daily for 1 year**



Learning points Mr. MM

- Don't forget the drug history – daily high dose oral steroid for one year is almost criminal.
- Always screen the hips when examining the back
- Back patients rarely need crutches / walking stick

Case 6: Ms. CM 52 year old female



Learning points Ms. CM

- High energy MVA
- Complete paralysis

Red Flags - Back to basics



Primary Causes

- Muscle strain or ligament sprain
- Facet joint arthropathy
- Discogenic pain or annular tears
- Spondylolisthesis
- Spinal stenosis



Differential Diagnosis

- Classify according to age
- Always exclude systemic causes
- Malignancies
 - Pregnancies / Gynecological
 - U / Genital causes

How do we evaluate the patient with LBP?

- History

- The differential diagnosis for spinal causes of back pain is extensive – how does one pin point the exact pain driver?
- Back pain with or without radicular pain?
- Extremes of ages?
- Trauma history?
- Night pain?
- Various extra-spinal conditions also can cause back pain
- Potential secondary gain issues...

“Spinal” Causes of Back Pain

- **Structural**

- Segmental instability
- Discogenic pain, annular tears
- Facet joint arthropathy
- Muscle strain, ligament sprain
- Spondylolisthesis
- Spinal stenosis
- Fracture
- Infection
 - Discitis
 - Vertebral osteomyelitis

- Inflammatory
 - Ankylosing spondylitis
 - Rheumatoid arthritis
- Tumors
 - Primary
 - Secondary, myeloma

- **Endocrine**

- Osteomalacia
- Osteoporosis
- Acromegaly

- **Hematologic**

- Sickle cell disease

“Extra-Spinal” Causes of Back Pain

- **Visceral**

- Renal calculus, urinary tract infection, pyelonephritis
- Duodenal ulcer
- Abdominal or thoracic aortic aneurysm
- Left atrial enlargement in mitral valve disease
- Pancreatitis
- Retroperitoneal neoplasm
- Biliary colic
- Gynecologic
- Etopic pregnancy
- Endometriosis
- Sickle cell crisis

- **Drugs**

- Corticosteroids cause osteoporosis and methysergide produces retroperitoneal fibrosis
- Nonsteroidal anti-inflammatory drugs may cause peptic ulcer disease or renal papillary necrosis

- **Musculoskeletal**

- Hip disease
- Sacroiliac joint disease
- Scapulo-thoracic pain
- Psychogenic

On Physical Examination

- Neurologic assessment
 - Note any weakness
 - The effect of position on symptoms and exacerbating or relieving factors should be noted
- Physical examination
 - Observe the patient closely while walking and during transfers, noting any pain, antalgia, or ataxia
 - Perform a meticulous neurologic examination and note any inconsistencies
 - Always perform provocative testing (eg, straight-leg raise, femoral stretch test)

- **WADDELL**
Criteria

- Pain with Vertical compression
- Discrepancy- Informal & Formal testing
- Hyper reactivity
- Paradoxical SLR test
- Non-Dermatome loss Sensation

BACK PAIN

~~conservative management~~

**PERSISTENT PAIN
DEVELOPING NEUROLOGY**

red flags

imaging

lab tests



Red Flags



Red flags are possible indicators of serious spinal pathology:

- Thoracic pain
- Fever and unexplained weight loss
- Bladder or bowel dysfunction
- History of carcinoma
- Ill health or presence of other medical illness
- Progressive neurological deficit
- Disturbed gait, saddle anaesthesia
- Age of onset <20 years or >55 years

What imaging should I request?

- X-rays
 - **AP(supine) & Lateral(standing)**
 - If pain > 6 weeks
 - Earlier if you suspect malignancy or infection
 - Note coronal and sagittal alignment as well as the presence or absence of disc degeneration, osseous or soft-tissue abnormalities
 - **Oblique** (foraminal or radicular symptoms)
 - **Flexion and extension views** (spondylolisthesis or suspected ligamentous instability)



Why should we NOT rely too much on imaging studies?

If under age 60 and pain free:

Low yield: unexpected X-ray findings 1: 2500

MRI:

bulging disc in 1 of 3
herniated disc in 1 of 5

• Over age 60 and pain-free:

• MRI:

- herniated disc in 1 of 3
- bulging disc in 80%
- all have age-related disc and facet joint degeneration
- spinal stenosis in 1 of 5 cases



Figure 1



Figure 2

- Imaging can be misleading: many abnormalities as common in pain-free individuals as in those with back pain

Further evaluation

- Goal is to discriminate between “benign” cases and disorders that require further diagnostic studies
- Radiological imaging: X-ray/ CT Scan/ MRI
- Useful lab tests:
 - FBC, ESR, CRP
 - Calcium, ALP
 - protein electrophoresis, BJP

Key Points about low back pain

- 90% are due to mechanical causes and will resolve spontaneously within 6 weeks to 6 months
- Pursue diagnostic workup if any red flags found during initial evaluation
- If ESR elevated, evaluate for malignancy or infection
- In older patients initial X-ray useful to diagnose compression fracture or tumour

Key Points about low back pain

- Bed rest is not recommended for low back pain or sciatica, with a rapid return to normal activities usually the best course
- Back exercises are not useful for the acute phase but help to prevent recurrences and treat chronic pain
- Surgery is appropriate for a small portion of patients with low back pain



THANK YOU