

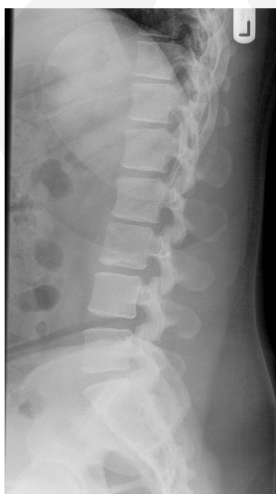
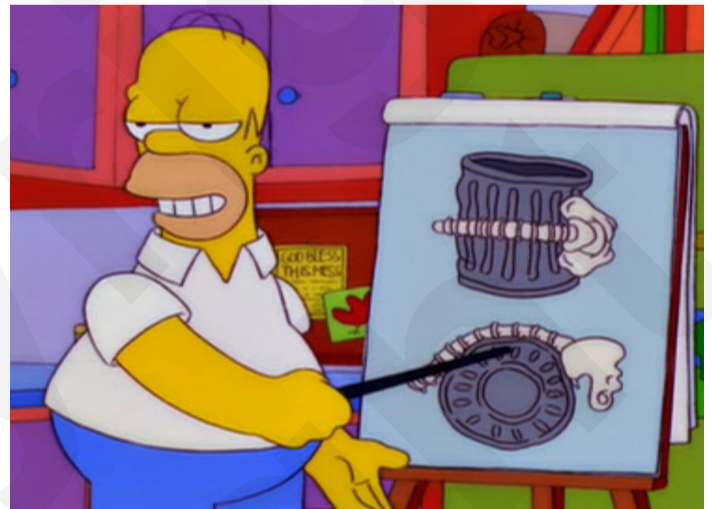
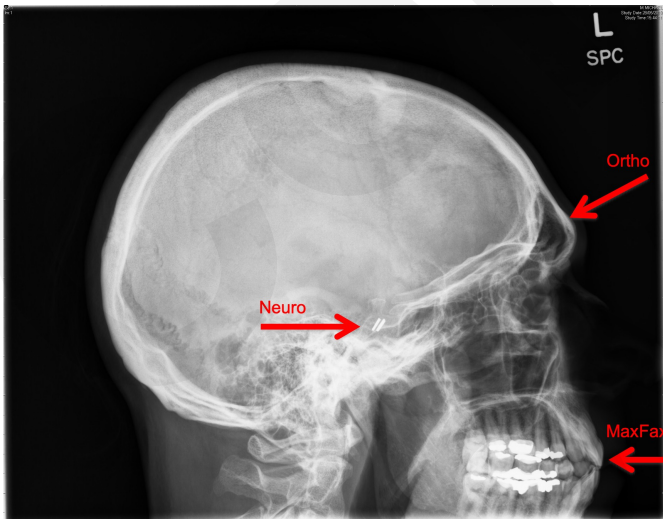
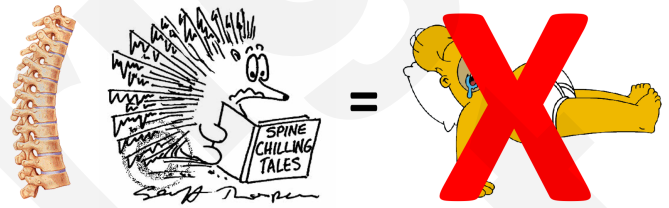
The Grand Round
14th November 2018

A Curious Case of Low Back Pain

Mr M J H McCarthy
Consultant Spinal Surgeon



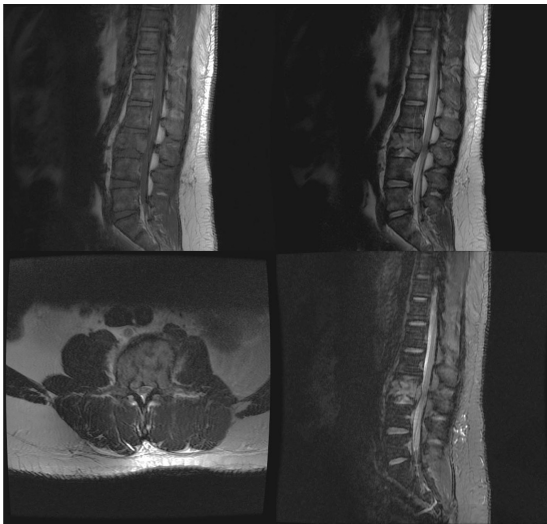
A Talk on Spines



- Once upon a time in a hospital West of here...
- 33 year old male preacher
- Insidious onset low back pain over 6 weeks
- Worse at night
- Unable to mobilise in absolute agony
- No PMH / Meds / NKA
- Well built and stoical
- No neurological deficit
- Wife 36/40 pregnant first child

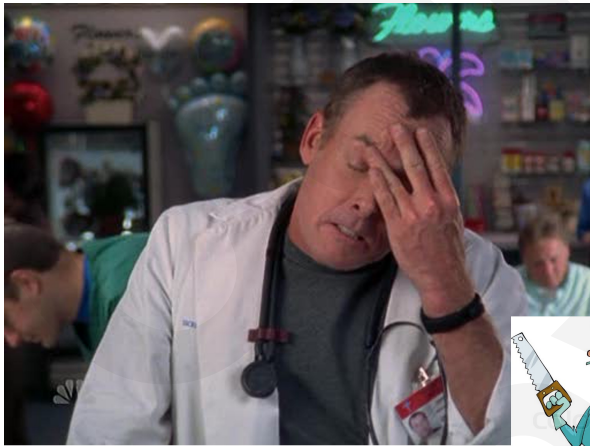
Initial Plan?

- All bloods normal
- No Travel / Pt not aware of any Contact Hx
- Chest nad Urine nad
- Analgesia – still in agony
- Investigations...



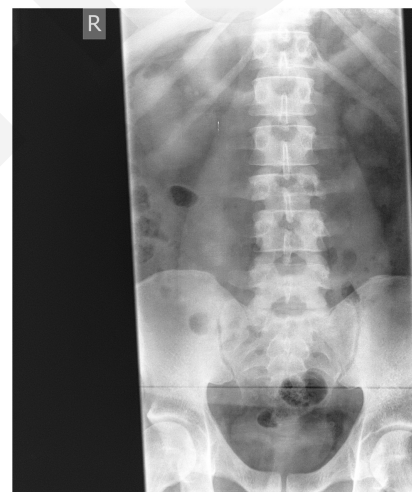
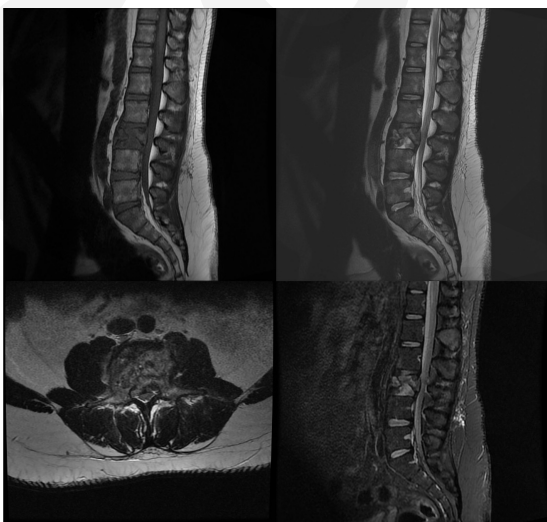
Ongoing Plan?

- Blood cultures negative
- Bed rest as pain mobilizing
 - (2 months whilst first son was born!)
- CT CAP
 - 3 huge soft tissue masses filling the thoracic cavity

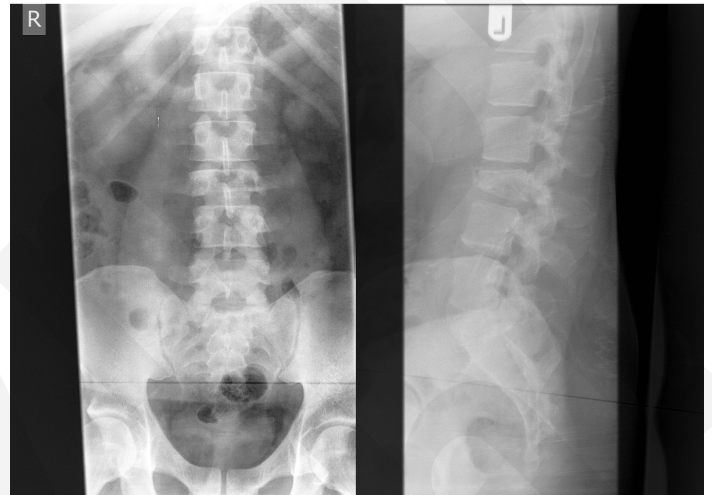


Ongoing Plan?

- ECHO nad
- CT Biopsy x2 negative (good cores)
- Quantaferon gold equivocal
- DD?
 - Tumour or Infection?
- What next?

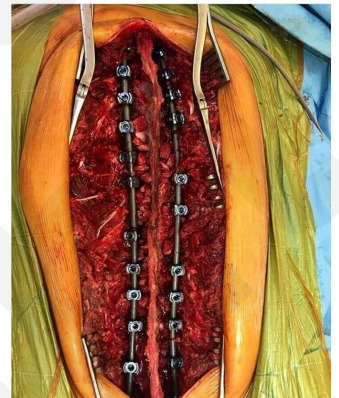


Don't Forget This Slide...



What Now?

- Ask for help!
- Discuss with Cardiff
- Spinal MDTM Cardiff
- Do what we do...

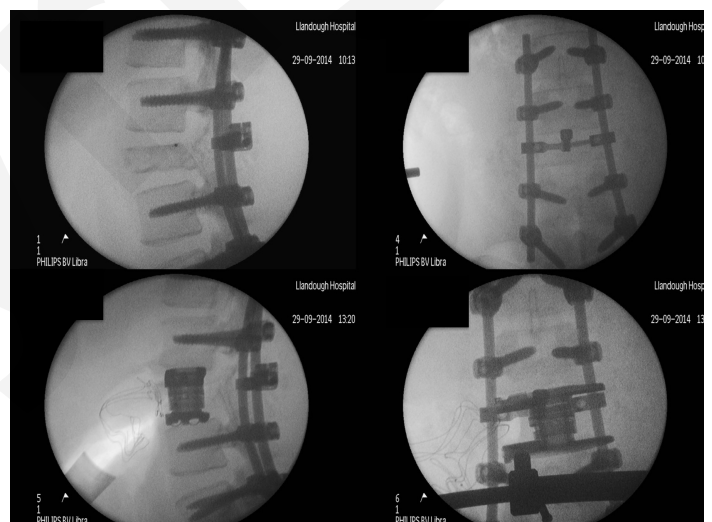


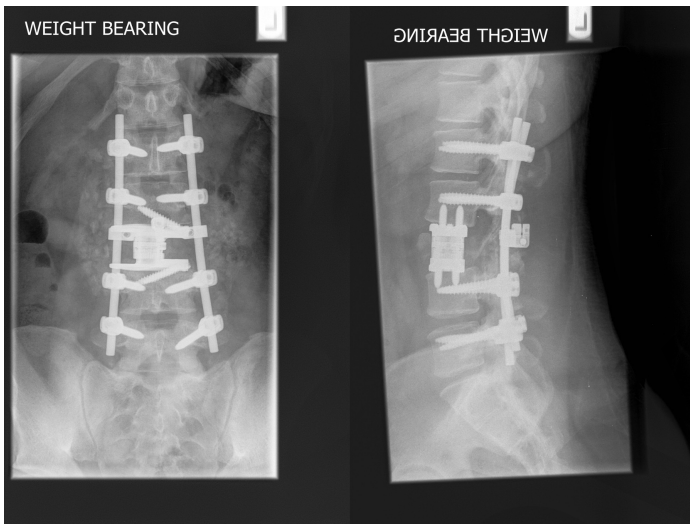
Spinal Surgery!

It's like removing your bendy spine..



and replacing it with a metal pole!





Diagnosis?

- MDR TB
- 2 years of antibiotic "chemotherapy"
- Back to normal with but his back is now a bit stiff!



What Did We Learn?

- Tissue sample crucial for Dx and Tx
- Delays inevitable in difficult cases
- Sometimes surgical intervention is required

A Bit About Low Back Pain



Main Causes of LBP

- Non-specific LBP / Mechanical / Muscular
- Degenerative Disc Disease / Discogenic
- Facet Joint Arthrosis
- Spondylolisthesis / Spondylolysis
- Degenerative Scoliosis / Kyphosis
- Inflammatory Conditions
- Sacroiliac Joint Pain
- **ATIT**

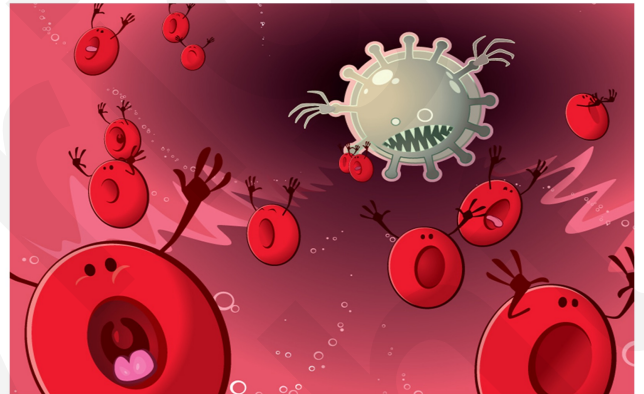
Don't be **ATIT**

- Although majority LBP is not serious and is managed conservatively remember to exclude the serious:-
 - **Abdominal** / Retroperitoneal Causes
 - AAA, Pancreatitis, Malignancy
 - Spinal **Trauma**
 - Spinal **Infection**
 - Spinal **Tumour** - Primary / Mets

Red Flags

- <16yrs or >50yrs with NEW onset pain
- Unwell / unexplained weight loss / unexplained fevers
- **Past history of cancer**, recent serious illness, recent significant infection, previous long standing steroid use, HIV / AIDS, end stage renal disease, osteoporosis, Paget's disease, alcohol or drug abuse
- Widespread neurological deficits
- Pain is non-mechanical
- Thoracic pain
- Spinal deformity
- History of significant trauma / injury
- Fails to improve with treatment

A Bit About Spinal Infections



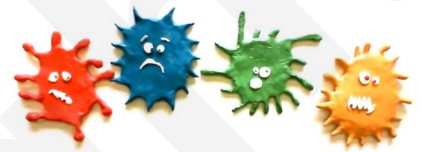
The Presentation

- Acute fever and pain
- More commonly:
 - Vague symptoms, chronic illness, low grade fever and back pain
 - 50% delayed $\Delta > 3/12$
- Back pain >90%
 - C 15% Th 35% L 50%
- Fever 50%
- Neurology 15%



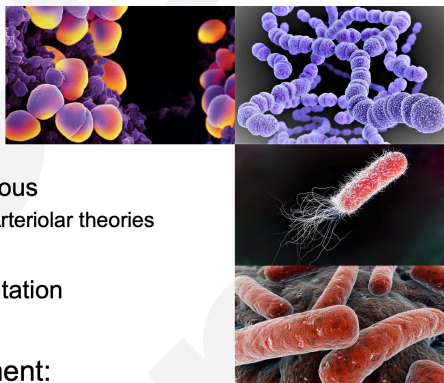
The Infection

- 60% Staph aureus (and some staph epidermidis)
- 30% Enterobacter
- Salmonella/ Klebsiella/ Pseudomonas
- Strep Viridans
- Mycobacteria
- Fungi



Infection

- Spread:
 - Haematogenous
 - Venous vs Arterial theories
 - Contiguous
 - Direct Implantation
- Disc Involvement:
 - Pyogenic infection nearly always
 - Granulomatous do not typically involve the disc



The Patient

- Diabetic / Druggie
- Immuno / Immigrant
- Steroids / Spinal Surg
- Genitourinary issues
- Renal F / Rheumatoid
- Adolescents
- Cardiac issues
- Elderly



The Diagnosis



- Lab tests
 - Blood cultures yield correct organism 6-24%
- Imaging
 - XR changes 4/52, standing XR - deformity...
 - MRI – Imaging of choice
 - CT – bony destruction, biopsy
- Biopsy
 - IS THERE SOMETHING TO BIOPSY?
 - Stop abs if able
 - Identifies organism 68-82% (at best but probably <50%)
 - 2 negative closed biopsies - ? proceed to open biopsy
 - All samples sent for micro and histology

Rule of 50%

- 50% > 50 yrs old
- 50% have fever
- WCC normal in 50%
- Genitourinary tract source in 50%
- Staph aureus in >50%
- Lumbar spine in 50%
- No primary site found in 50%
- Symptoms > 3/12 in 50%

The Treatment



- Non-specialist in the majority of cases
- Rest / Brace
- Blood Cultures
- Massive and prolonged antibiotics
 - Talk to the bug doctors
 - Pref 2 agents with good bone penetration
- Watch for bone stock loss
 - Don't wait for the deformity to get worse
 - Get erect XRs during course of treatment
- "Complicated" cases – involve the spinal team

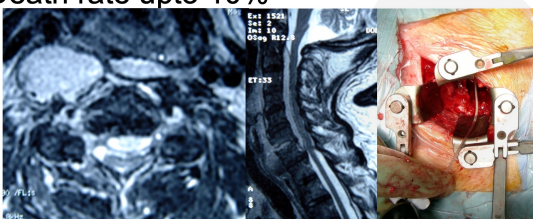
The Complications

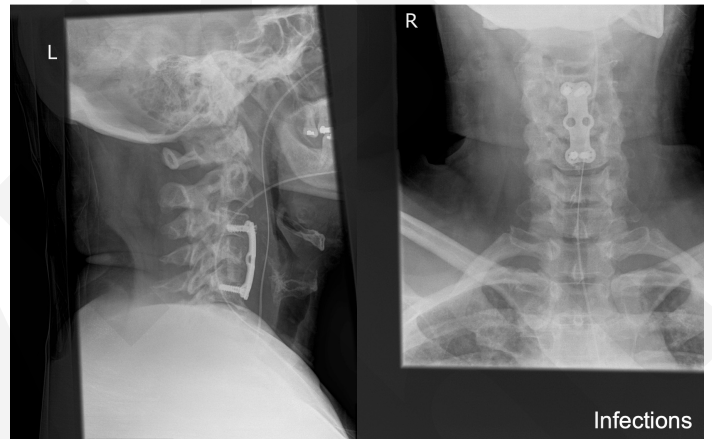
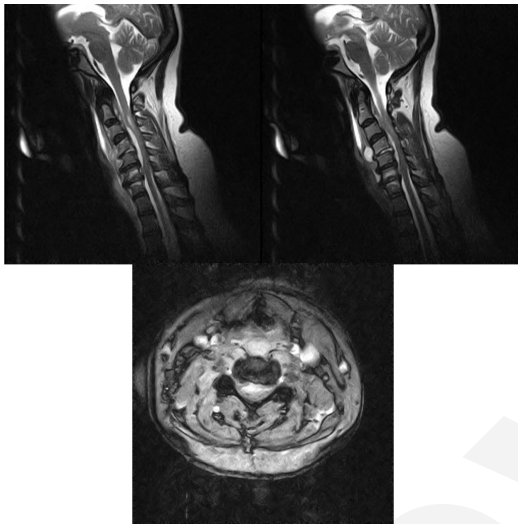
- Mortality rate up to 20%
 - Comorbidities
- Paralysis
 - Abscess / Deformity / Fracture / Thrombosis
- Ongoing infection and sepsis
- Deformity
- Pain
- Instability



Epidural Abscess

- TRIAD: Pain Fever Neurology
- Thoracic spine commonest
- Significant neurological deficits / paralysis can develop - reversible if op < 24-36 hrs
- Death rate upto 10%





The Little People

- Back pain
- Refusal to weight bear
- Flexed spine
- Hip pain
- Non specific abdominal pain
- <50% have fever
- Blood cultures usually negative



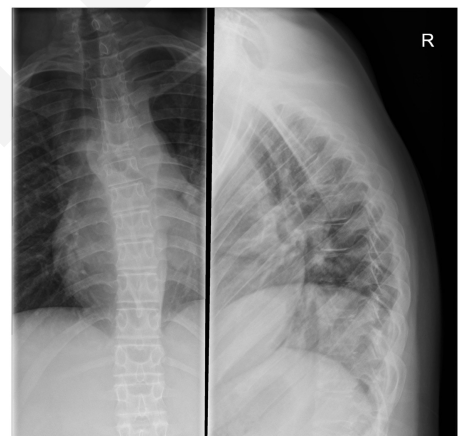
The Red God / White Plague

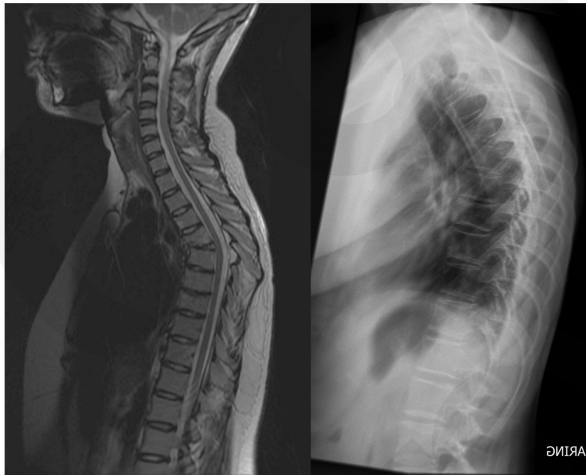
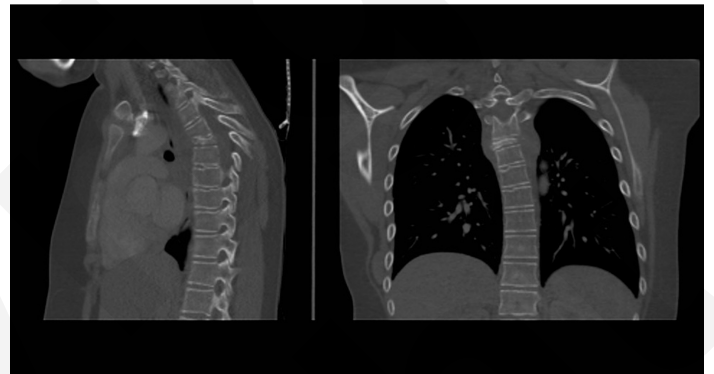
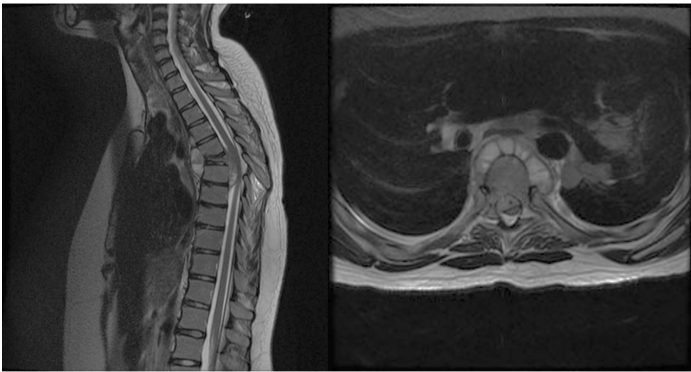
- Risk factors
 - Asia, S America, Russia
 - Confinement – homeless shelters, prisons
 - Elderly, alcoholics, AIDS, contacts
- Variable presentation
 - Cutaneous sinuses
 - Neurological deficit up to 40%
 - Kyphotic deformities
- Peridiscal, central and anterior subtypes



■ SPECIALTY UPDATE
Spinal tuberculosis
REVIEW OF CURRENT MANAGEMENT
2018

- Mainly developing world but ↑ migration
- Insidious onset
- Biopsy now mandatory (sensitivities)
- Medical management mainstay
- Surgery – deformity, neurology, abscess
- HIV – avoid IRIS (immune reconstitution inflammatory syndrome)
 - Treat TB first
- Prognosis often good despite severe neurological deficits

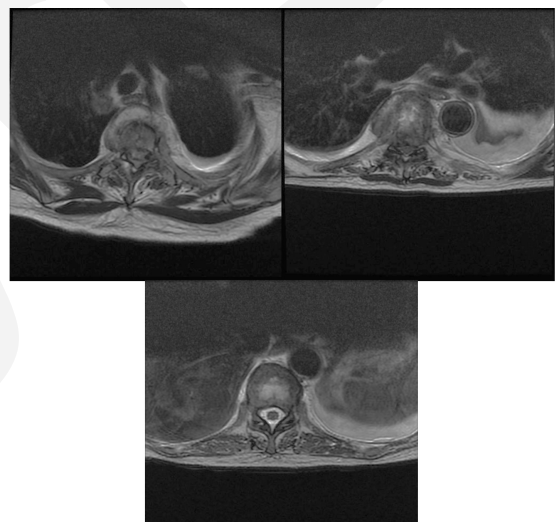
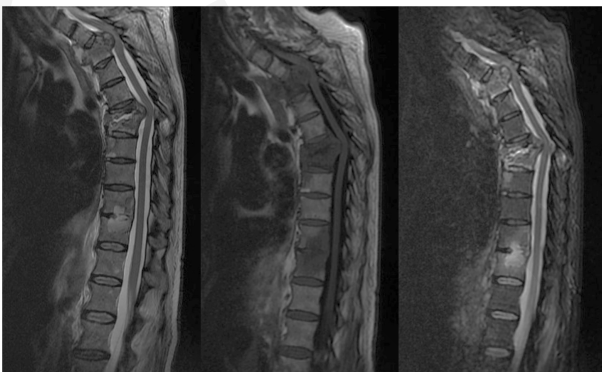




Goals of Treatment

- Early diagnosis
- Eradicate infection / treat sepsis
- Preserve spinal stability
- Prevent / reverse neurological deficits
- Pain relief
- Correct deformity

Please Involve The Spinal Surgeons EARLY
BUT, majority can be managed by non specialists



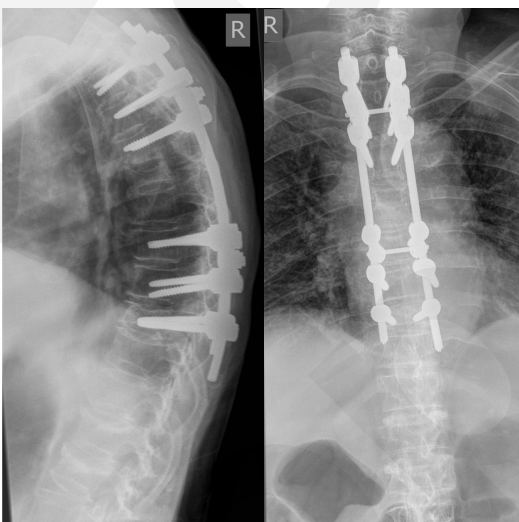
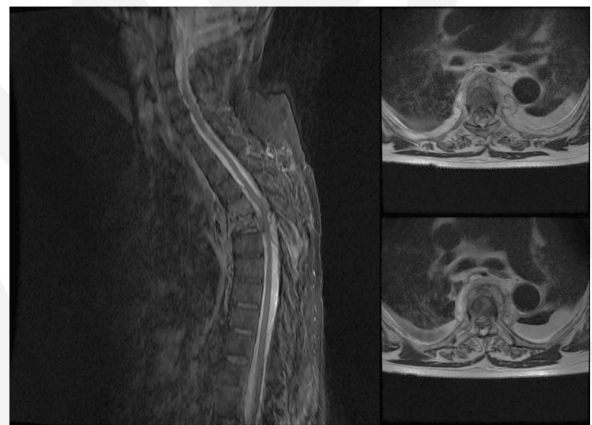
Operative Intervention

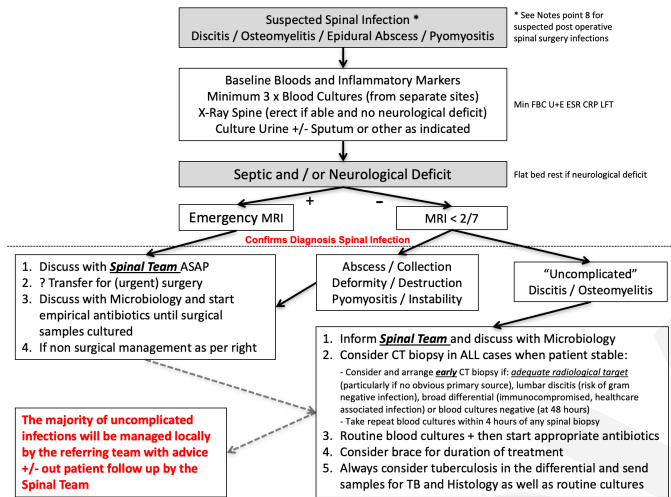
- Open biopsy required for diagnosis
- Failure of medical management
- Drainage of abscess (?)
- Decompression of spinal cord compression with neurological deficit
- Correction of progressive or unacceptable spinal deformity / instability

Goals of Surgery

- Complete debridement of all non-viable and infected tissue
- Decompress neural elements
- Long term stability through fusion
- **Decompress / Realign / Stabilise**

Real Purpose of Surgery?





Notes:

- Antibiotics** for a minimum of 6 weeks as directed by Microbiology (combined therapy often appropriate). Consider early peripheral IV long line. IV to oral conversion guided by clinical status, inflammatory markers and Trust IV-oral switch policy (discuss with Microbiology). Once patient stable inflammatory markers should be checked at least every 2 weeks. Stop antibiotics when advised and when CRP normal and patient well. Recheck bloods 2 weeks later.
- Spinal cord injury:** flat bed rest usually for 6 weeks as per SCI protocol – liaise with Spinal Team and Rookwood. Management of cauda and root compromise does not necessarily require flat bed rest.
- Spinal Precautions:** Log rolling, head hold and cervical collars can be required in some cases when there is spinal instability with significant bony destruction – liaise with Spinal Team for specific instructions
- X-Ray** (erect in brace) to check for progressive deformity at intervals as advised by Spinal Team (usually 6 weekly).
- Interval MRI only** if deteriorates, develops neurological deficit or no improvement after a course of antibiotics (usually 3 months).
- Echocardiogram** if Staph aureus bacteraemia present, or multiple positive blood cultures with organism that causes endocarditis (alpha haemolytic streptococci, enterococci), or signs consistent with endocarditis (new murmur, peripheral stigmata of endocarditis, multiple sites of infection), or significant risk factor for endocarditis (previous valve surgery, IVDU, immunocompromised). Consider if patient fails to respond to treatment, has recurrent infection, is diabetic or alcoholic.
- If biopsy negative / non response to antibiotics then discuss with Infectious Diseases and look for possible causes e.g. consider serology for brucella, coxiella, abdominal ultrasound.
- The pathway for post operative spinal surgery infections (+/- metalwork) will vary and ALL cases must be discussed with the Spinal Team ASAP (If Neurosurgical patient please discuss with Neurosurgical Team).



Pay attention to the detail
Never let your guard down

