Infective discitis in an 83 year old female

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Introduction
Spontaneous infective discitis is a relatively rare but potentially devastating condition. Mortality is thought to be between 2% and 11% and a third are left with residual disability1-2. The term spondylo/itis discis refers to an associated infection of the vertebral body. The first account is credited to the French physician Lannelongue in 18793. Despite knowing about the condition for over 130 years, it continues to divide opinion.

Studies suggest an annual incidence of around 2/100,000/year1,3-6. It accounts for between 2-5% of all osteomyelitis1,3-6,7. It’s presentation is variable with a wide range presenting with pyrexia or neurological symptoms, however over 90% of patients1,3-5,6,7,8,9,10,11,12 will have back pain which is the predominant symptom, and in over 90% of patients1,3-5,6,7,8,9,10,11,12 it can be of acute or insidious onset. In addition, raised inflammatory markers are seen in >90%1,3-5,6,7,8,9,10,11,12 with CRP and ESR more commonly elevated than white cell count1,3-5,6,7,8,9,10,11,12. A number of studies list diabetes as the greatest predisposing factor in spontaneous (i.e. not following invasive spinal procedures) discitis1,3-5,6,7,8,9,10,11,12. Some studies suggest a bi-modal presentation with a childhood peak and again around the sixth decade1,3-5,6,7,8,9,10,11,12. We report a case of acute infective discitis in an 83 year old female.

Case report
Our patient was admitted via her GP on 21/6/12 with general deterioration, decreased mobility and constipation. She lived alone with a once-a-day care package and was previously independently mobile. She had a history of hypertension, recurrent UTIs and was registered as blind. She reported a 3 month history of intermittent back pain with leg weakness over the past 2 weeks. Inflammatory markers were raised on admission (CRP 102; WCC 14.9). She was found to be in urinary retention and subsequently catheterised. Cefalexin was commenced to cover suspected UTI +/- LRTI. The right leg had 4/5 power, left 3/5. Sensation was mildly impaired in the left leg and reflexes were normal. A CT head was performed which showed no acute change. A lumbar spine MRI was performed which showed multilevel spinal stenosis.

Over the course of her admission our neuromuscular symptoms progressed. The initial MRI was discussed with the neurosurgeons who advised that the clinical symptoms did not correlate with the scan findings. A neurology review was recommended which noted a T4 sensory level with upgoing plantar reflexes and near complete loss of motor power. An urgent cervicothoracic MRI showed acute infective discitis with disc herniation at T5 and T6 causing severe cord compression. She was urgently transferred to the Walton Centre for Neurology on 30/6/12 where she was commenced on a 3 month course of empirical antibiotic therapy - intravenous flucloxacillin and a stat dose of gentamicin.

She was transferred back to Whiston on 18/7/12 to complete antibiotic therapy and rehabilitation. Her family were keen to transfer her to a rehab centre that unfortunately she would not walk again. She completed 2 months of intravenous antibiotics and was converted to oral flucloxacillin prior to discharge, which was to be continued for 2 months. She was discharged on 13/9/12, completing a total of 12 weeks in hospital. She received extensive therapy input and was discharged with a home host for transfer and a long term catheter due to multiple failed trials without catheter.

Discussion
Our case raises a number of interesting questions. As the literature would suggest, she presented with back pain and raised inflammatory markers. She displayed neurological symptoms, but remained apyrexial.

In the absence of any positive cultures, she was commenced on empirical antibiotic treatment, based on microbiology advice. We know that, TB excluded, Staphylococcus aureus is the most common causative organism1,3-5,6,7,8,9,10,11,12. French guidance exists recommending 3 sets of blood cultures incubated for a prolonged period – only if these are negative is a percutaneous disc biopsy required10. Yield is questionable however, blood cultures have only been found to be positive in around half of patients with disc biopsy faring only slightly better1,3-5,6,7,8,9,10,11,12. Ideally choice of antibiotic is based on culture and sensitivity, however when no organism is cultured or treatment is commenced empirically, the antibiotic should cover S. aureus and gram negative organisms1,2. Flucloxacillin is recommended in Methicillin-susceptible S. aureus,1,2,3,4,5,6,7,8,9,10 and as MRSA accounts for <1% of community-acquired strains this appears to be an appropriate empirical choice in our patient1,2,3,4,5,6,7,8,9,10.

Recommended duration of treatment remains unclear. Many retrospective studies quote a large range. A common consensus appears to be a 12 week antibiotic course, comprising around 6 weeks of IV therapy and a further 6 weeks with oral antibiotics1,2,3,4,5,6,7,8,9,10. Our patients’ is to complete a total of 4 months of antibiotics.

Our patient was affected at the level of T5 and T6, confirmed on MRI. MRI is universally agreed as the gold standard diagnostic imaging technique with sensitivity of 93-96% and specificity of 92.5-97%1,2,3,4,5,6,7,8,9,10,11,12. Interestingly, a number of papers have concluded that spontaneous infective discitis most commonly affects the lumbar spine1,2,3,4,5,6,7,8,9,10. By contrast TB most commonly affects the thoracic spine1,2,3,4,5,6,7,8,9,10,11. The whole spine should be imaged to prevent delay in diagnosis.

While spontaneous infective discitis remains a relatively rare condition – one 3 year study in a DGH found that discitis accounted for around 1 in 4000 medical and surgical admissions11 – unless it is identified and treated promptly, it has potentially devastating consequences.

‘Red flags’ which indicate possible serious spinal pathology8,10

- Violent trauma
- Weight loss, systemically unwell
- Disturbed gait, saddle anaesthesia
- Systemic steroids
- Widespread neurology
- PMHx carcinoma
- Progressive neurological deficit
- Bladder/bowel dysfunction
- Systemic steroids
- Age of onset <20, or >55 years
- Medical comorbidities
- Persistent severe restriction of lumbar flexion
- Constant, non-progressive, non-mechanical pain

Learning Point: Infective discitis should be considered as a differential diagnosis in patients presenting with back pain and fever with raised inflammatory markers, especially in high risk groups (e.g. diabetics or those who have undergone recent invasive procedures).

References: