# From Foot Ulcer to Fatal Epidural Abscess

S Braggins<sup>1</sup>, A Sharma<sup>1</sup>, T Vakiligilani<sup>1</sup>, L Bloomfield<sup>1</sup>, J Dunbar<sup>1</sup>, A Sangster<sup>1</sup>, D Samarasinghe<sup>1</sup>, V Bravis<sup>1,2</sup>

<sup>1</sup>Department of Diabetes and Endocrinology, St Marys Hospital, ICHT, London

<sup>2</sup>Division of Diabetes, Endocrinology and Metabolism, Imperial College London



#### INTRODUCTION

- Approximately 10% of patients with diabetes will develop a foot ulcer in their lifetime.<sup>1</sup>
- Spondylodiscitis (incorporating vertebral osteomyelitis, spondylitis and discitis) is a rare condition and diabetes is the most common predisposing risk factor.<sup>2</sup>
- Spinal infection occurs most commonly through haematological spread<sup>2</sup> from distant infection sites, such as diabetic foot ulcers.

### PRESENTING COMPLAINT

A 57-year old woman with poorly controlled type 2 diabetes (HbA1c 148mmol/mol) presented with sepsis and **lower back pain**, in the absence of trauma. She denied a headache or any respiratory, urinary and gastrointestinal symptoms. Examination demonstrated lumbar vertebral tenderness, bilateral lower limb weakness and absent reflexes. She also had a right hallux apical necrotic ulcer.

# PATIENT BACKGROUND

#### **Presentation with** 5<sup>th</sup> LEFT toe ulcer

- Debrided
- 10 days IV antibiotics (Abx)
- 28 days oral Abx

#### Osteomyelitis (OM) diagnosed

- 14 days IV Abx
- 5<sup>th</sup> toe & metatarsal head amputation due to sepsis
- 14 days oral Abx
- VAC dressing

PATIENT PROGRESS

treated with intravenous antibiotics and inotropes.

Beta-haemolytic streptococcus group B grew from blood

cultures; whilst urinalysis, CTKUB and Chest X-ray ruled

posterior epidural collection with canal compression

managed conservatively with prolonged IV antibiotics

inflammatory markers improved but she remained bed

Her cause of death was recorded as 1a) Septicaemia 1b)

An MRI spine revealed L3/4 and L4/5 discitis with a

MDT discussion deemed that neurosurgical intervention

carried a high mortality risk and she was therefore

(ciprofloxacin & gentamicin —> meropenum —>

Over the next nine weeks of her inpatient care,

bound with persistent lower limb neurology.

In her final week she exhibited further signs of

overwhelming sepsis and passed away.

Epidural abscess 1c) Diabetic foot ulcer.

Post-operative foot sepsis & gangrene

- 5 weeks IV Abx
- Forefoot amputation

#### Non-healing wound

- 4 weeks outpatient larvae therapy
- 4 weeks IV abx
- Debridement
- Split skin graft

**Month 5-10** 

New

**RIGHT** 

hallux

with OM

• 1 month

oral Abx

Month 13

ulcer

Right ulcer

\* = failed to attend multiple appointments

- Right 1st toe amputated
- 1 month oral Abx

Month 16

spread

Month 1

Month 2

She was admitted to the High Dependency Unit and

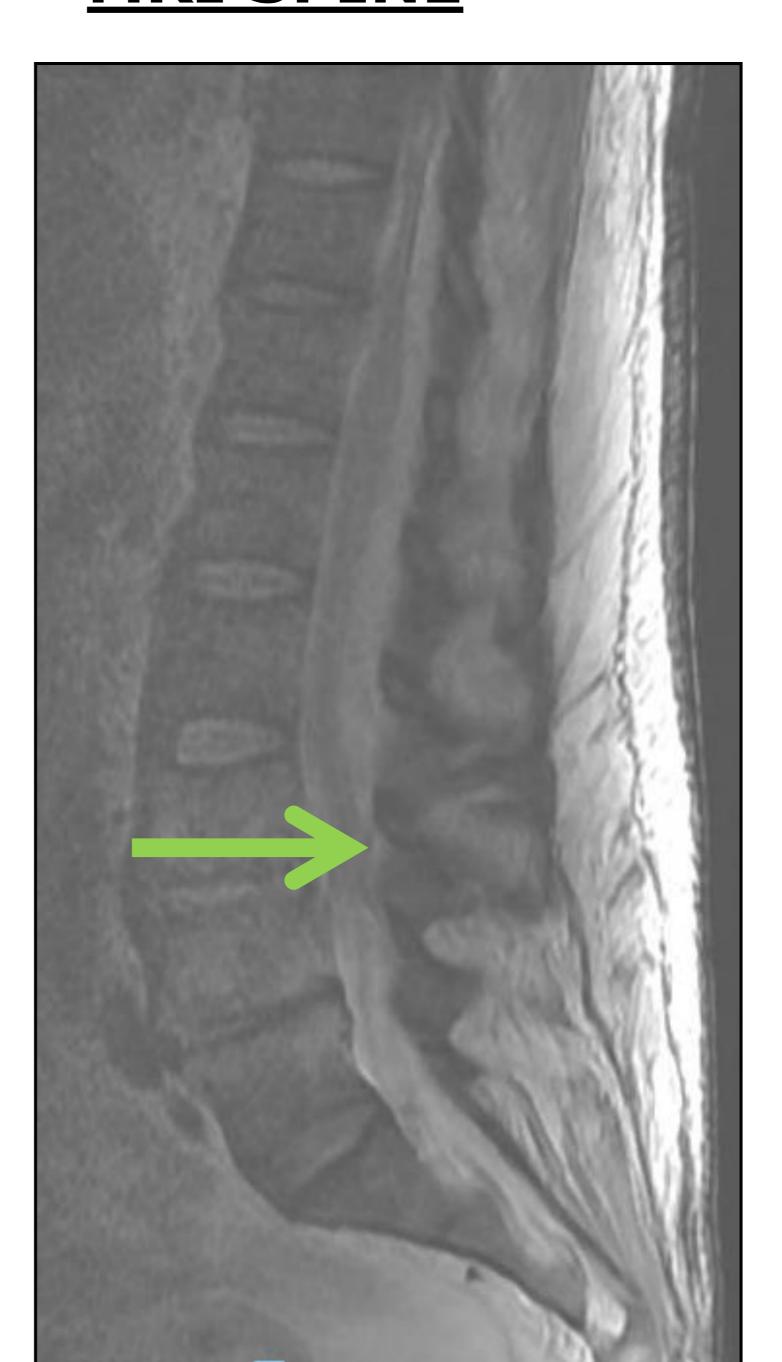
out other sources of infection.

extending from T12-L4.

ceftriaxone).

Month 3-4

# **MRI SPINE**



# **PATHOGENESIS OF HAEMATOLOGICAL** SPREAD<sup>2</sup>

Intraosseous arteries in adult vertebral discs contain avascular end points

This allows septic emboli to cause extensive infarcts

Leading to vertebral disc infection (spondylodiscitis)

Which may result in:

Wedging, cavitation & compression fractures

Spinal epidural abscess, meningitis & paralysis

#### **DISCUSSION**

- The most commonly implicated organism in spondylodiscitis is staphylococcus aureus, with streptococci causing 5-20% of cases.<sup>2</sup> In this case the most likely source of spinal infection was from the chronically infected diabetes foot ulcer, supported by blood culture findings and lack of alternative infection source.
- Spondylodiscitis often presents with no other symptom other than back pain.<sup>2</sup> Neurological or infective symptoms can be present or absent.<sup>2</sup> Consequently, high clinical suspicion in clinicians is imperative in ensuring timely diagnosis and early intervention to minimize devastating consequences.
- The interval between the patient's initial contact with the diabetes foot service and development of signs of spondylodiscitis was 17 months. During this time she had defaulted from the diabetes foot service and her antibiotic concordance was difficult to assess. This raises the question of how best to encourage concordance with outpatient management, and whether earlier inpatient management in poorly concordant patient would reduce morbidity and mortality in diabetic foot disease.

REFERENCES

1) National Institute of Clinical Excellence (2015) Diabetic foot problems: prevention and management. NICE guideline (NG19). 2) T Gouliouris, S Aliyu, N Brown. Spondylodiscitis: update on diagnosis and management. Journal of Antimicrobial Chemotherapy 2010; 65 (3): pp iii11-iii24.



Clinical practice, governance and case reports Suzanne Braggins

