Metastatic Spinal Disease

Mr Neil Chiverton
Consultant Spinal Surgeon, Sheffield
Objectives

• The scale and nature of the problem
• NICE recommendations
• Surgical decision making
• Case illustrations
Incidence & Prevalence (MSCC)

- 4000 cases / year
- 100 cases / year / cancer network
- 20% have no previous cancer diagnosis
- Majority have known spinal metastases
- Poor recognition / delayed referral
Primary tumour types

- Breast, Prostate, lung (60%)
- Gastrointestinal (15%)
- Haematological (10%)
- Others (10%)
- Unknown (5%)
Clinical presentation

- Spinal pain
- Neurogenic pain
- Sensory disturbance
- Limb weakness / ataxia
- Bladder / bowel dysfunction
NICE guidance - CG75
(2008 and review 2014)

• Early detection
  - Patient information
• MRI whole spine + CT staging
• Spinal precautions
• Dexamethasone
• Definitive treatment plan
  - within 7 days for pain
  - within 24 hours for neurological deficit
• Co-ordinated and audited service provision
Surgical assessment

- General physical condition
- Level of pain
- Neurological status
- Radiological evaluation
  - Spinal disease
  - Staging
- Confirm primary diagnosis / prognosis
- Patient’s wishes / understanding
- Alternative therapies
- Technical considerations
Tokuhashi Score

- General condition
- Number of vertebral mets
- Other skeletal mets
- Major organ involvement
- Primary
- Neurological deficit

Each indicator has a score of 2, 1, or 0
Possible total score = 12

Life expectancy:

< 6  < 3 months
6 - 8  3-6 months
>9  >12 months
# Spinal Instability Neoplastic Score

**(Spine, 2010)**

<table>
<thead>
<tr>
<th>Location</th>
<th>Spinal alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junctional</td>
<td>Subluxation/translation 4</td>
</tr>
<tr>
<td>Mobile spine</td>
<td>De novo deformity 2</td>
</tr>
<tr>
<td>Semirigid</td>
<td>Normal alignment 0</td>
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<tr>
<td>Rigid</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Pain</th>
<th>Spinal alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Subluxation/translation 4</td>
</tr>
<tr>
<td>Occasional</td>
<td>De novo deformity 2</td>
</tr>
<tr>
<td>Pain-free</td>
<td>Normal alignment 0</td>
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</table>

<table>
<thead>
<tr>
<th>Bone lesion</th>
<th>Vertebral body collapse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lytic</td>
<td>&gt; 50% collapse 3</td>
</tr>
<tr>
<td>Mixed</td>
<td>&lt; 50% collapse 2</td>
</tr>
<tr>
<td>Blastic</td>
<td>50% involvement 1</td>
</tr>
<tr>
<td></td>
<td>None of the above 0</td>
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</table>

<table>
<thead>
<tr>
<th>Involvement of postero-lateral elements</th>
<th>Vertebral body collapse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilateral</td>
<td>&gt; 50% collapse 3</td>
</tr>
<tr>
<td>Unilateral</td>
<td>&lt; 50% collapse 2</td>
</tr>
<tr>
<td>None</td>
<td>50% involvement 1</td>
</tr>
<tr>
<td></td>
<td>None of the above 0</td>
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</table>
Cautions

- Lung cancer
- Renal tumours
- Haematological
- New primary
- TB
- Previous DXT
Embolisation
Anterior vs Posterior

- Restore spinal stability
- Relieve cord compression
- Number of vertebrae involved
- Level of lesion
- Previous surgery / DXT
- General considerations
Results and outcome of spinal decompression and stabilisation in metastatic spinal disease

Reduction in major analgesic requirement statistically significant

P < 0.05
Pain relief
- analgesic requirement -

Reduction in major analgesic requirement statistically significant

\[ P < 0.05 \]
Mobility

1. Bed bound
2. Transfers
3. Walking frame/other aids
4. Walking sticks
5. No assistance

<table>
<thead>
<tr>
<th></th>
<th>Pre-op</th>
<th>Post-op</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.4</td>
<td>4.1</td>
</tr>
<tr>
<td>Median</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Range</td>
<td>1 - 5</td>
<td>2 - 5</td>
</tr>
</tbody>
</table>

39/50 patients were able to walk post operatively
Activities of daily living

0  Fully dependent
1  Needs trained help
2  Needs minimal help
3  Needs supervision
4  Limited adaptations
5  Fully independent

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<th>Post-op</th>
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<tbody>
<tr>
<td>Mean</td>
<td>2.9</td>
<td>3.8</td>
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<tr>
<td>Median</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Range</td>
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</table>

33/50 showed an improvement in their ability to perform ADLs
# The Pros and Cons

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Drawbacks</th>
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<tbody>
<tr>
<td>• Rewarding patients</td>
<td>• Not curative</td>
</tr>
<tr>
<td>• Multidisciplinary working</td>
<td>• Demanding on time</td>
</tr>
<tr>
<td>• Quality of life improvements</td>
<td>• Difficult decisions</td>
</tr>
<tr>
<td>• Major pathology / Complex surgery</td>
<td>• Complications</td>
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Case 1

Middle aged male

- Neck pain
- Chiropractor
- X-rays
Case 1
Case 2

57 years, female
Breast Ca 8 yrs
9/12 back pain. Ix's
Sensory disturbance
Brisk reflexes
T8 - T10
Lumbar deposits
Other secondaries
Case 2
Case 3

- Female, 60's
- Known breast carcinoma
  - Diagnosed 7 years
  - Pain +++ Back and legs
  - Some neurological symptoms
  - Initial posterior surgery 18 months
Case 3
Vertebroplasty / kyphoplasty

- Useful treatment for painful vertebral metastases
  - Vertebral collapse / pathological fracture
  - No clinical signs or radiological evidence of cord compression
  - No spinal instability
  - Posterior vertebral body wall intact (ideally)

- Myeloma / lymphoma

- Multidisciplinary decision
Thankyou