



## Malignant spinal cord compression

*With Dr Angelina Tjokrowidjaja, Medical Oncology Clinical Trials Fellow at St George Hospital, Sydney, New South Wales, Australia*

### Introduction

Spinal cord compression is a common complication of cancer and occurs in up to 10% of patients. It can cause pain and potentially irreversible neurological deficits. Early recognition is vital for better outcomes. A junior doctor may encounter a spinal cord compression in the Emergency Department, during an after-hours shift on haematology or oncology wards or when on rotation in these areas.

### 1. Which patient groups are at particular risk for cord compression?

- Consider patients who have cancers which have a predilection for bone metastasis
  - Solid malignancies: breast, prostate, lung and renal cancer
  - Haematological malignancies: multiple myeloma, non-Hodgkin lymphomas, some leukaemias
- Note a patient presenting with undifferentiated back pain and no history of cancer may have cord compression as a first presentation of cancer

### 2. How does cord compression present?

- For any cancer patient who presents with new back pain, consider cord compression
- Most common first symptom reported is pain. Pain may be:
  - In the neck or back depending on where the vertebral metastasis is in the spine
  - localised, referred or radicular
- Red flag symptoms: pain worse on lying down or pain that wakes patient up in the night
- Neurological deficits – usually motor more than sensory
  - Progressive bilateral weakness, numbness, paraesthesia
- Autonomic dysfunction (e.g. bowel and bladder dysfunction) is a late feature of cord compression
  - An exception is cord compression that affects the conus medullaris – this may present initially with back pain and only bladder or bowel symptoms

### 3. How do you assess a patient with suspected cord compression?

- Is the patient in pain?
  - If so, give analgesia – this will make examination easier for both the patient and yourself
- Signs of impaired mobility
  - Mobility aids, bottle for urination
  - Assess gait
- Thorough neurological examination
  - Including tone, power, reflexes and sensation
  - Look for bilateral weakness in legs, hyporeflexia below the level of the cord compression
- PR examination including peri-anal sensation and anal tone in the case of cauda equina (depressed reflexes in lower limbs)
- Palpate vertebral column for location of tenderness

### 4. What diagnostic imaging should be performed?

- Urgent MRI whole spine within 24 hours
  - MRI does not need to have gadolinium contrast (if it does, tumour will enhance better)
- Talk to radiology registrar to convey urgency

**Case – You are the junior doctor on an after-hours shift on a medical oncology ward. You are asked to review a 70 year old patient who has decreased mobility. You have a lot of other jobs.**

**5. What other information do you need to triage the urgency of this task on your busy shift?**

- When was the patient admitted? For what reason was the patient admitted?
- What type of cancer?
- Does the patient have known metastasis and if so, does it involve bone?
- What is the patient's baseline mobility and function?
- Has the nurse looked after the patient previously and noticed a deterioration?

**6. You now discover the patient has metastatic cancer to bone. What differentials do you consider?**

- The main differential to exclude is cord compression
- Others also include: stroke, new brain metastases, drug effects (e.g. statin-related myopathy)

**7. You review the patient urgently including a thorough physical examination. What are the next steps?**

- Contact the treating team
- Consider empiric dexamethasone (8mg mane, 8mg midi) with PPI cover
- MRI whole spine
- Notify radiology and neurosurgery registrars
  - Include salient information
  - Use ISBAR (Identify, Situation, Background, Assessment and Recommendation)
  - Include your examination findings and instituted therapy
  - Find out if they are known to a radiation oncologist

**8. What is the treatment of cord compression?**

- Treatment aimed at preserving function and preventing neurological deficits
- Treatment depends on certain factors
  - Patient factors – prognosis, performance status
  - Tumour factors – radioresistant or radiosensitive tumour, levels involved, systemic burden of disease
  - Treatment factors – is it feasible to do decompression for the patient?
- Landmark trial comparing surgery with decompression followed by radiotherapy vs radiotherapy alone
  - Surgery plus decompression group had improved outcomes in regaining mobility
  - Caveat: this patient group had one level of involvement, prognosis of more than 3 months and surgically feasible to have procedure performed
- For patients who are not surgical candidates or have multiple involved levels, radiotherapy is an option
  - Usual dose is 25Gy over 5 fractions
  - More can be done if they have a good prognosis
  - A single palliative dose can be given if they have a poor prognosis

**9. How do you manage difficult discussions with patients and families?**

- Develop a good relationship with patients
- Encourage patients to contact doctors and tell doctors about symptoms including pain
- Be upfront about diagnoses such as cord compression and prognostic outlook
- Be available for patients and families after the initial discussion to answer any further concerns
- Get allied health involved to optimise function – Occupational Therapist, Physiotherapist and social work

**10. Take home messages**

- Early recognition of cord compression is crucial
  - It should be considered in differentials (and excluded) in any cancer patient complaining of new onset back pain
- As a junior doctor on the wards, do a thorough neurological examination
- Once there is a clinical suspicion of cord compression, get a prompt MRI and liaise with medical oncology, radiology and neurosurgery