

Malignant spinal cord compression

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medical oncology, onthepods

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Sarah Dalton chats to Angelina Tjokrowidjaja about spinal cord compression, a common complication of cancer that occurs in up to 10% of patients. Spinal cord compression can cause pain and potentially irreversible neurological deficits.

Dr Angelina Tjokrowidjaja is currently a Medical Oncology Clinical Trials Fellow at St George Hospital and a PhD candidate at the NHMRC Clinical Trials Centre, New South Wales, Australia. Angelina completed her Master of Medicine (Clinical Epidemiology) while working as a junior medical doctor at Royal Prince Alfred Hospital, New South Wales. She is currently researching how to better individualise targeted and biological therapies in patients with advanced cancers using biomarkers. Angelina is also invested in teaching and is a tutor of medical students and junior doctors in the university and clinical setting.

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

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

Tags: #cancer,#ISBAR,#malignant spinal cord compression,#medical oncology,#neurology,#neurosurgery,#radiology

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