

## Oncological Emergencies

### Metastatic Spinal Cord Compression <sup>17,18</sup>

#### Introduction

- Most commonly seen in patients with a known or suspected diagnosis of cancer that have vertebral bone metastases e.g. breast, myeloma, prostate, lung, kidney. Any patient with cancer may develop spinal cord compression
- This is a **catastrophic event** leading to paraplegia, paraparesis and incontinence
- **Medical emergency** If treated early these problems can be prevented or reversed
- It is a clinical diagnosis requiring immediate discussion with the local cancer team. (Oncologist or Haematologist if myeloma or lymphoma diagnosis) to plan investigations. Subsequent discussion with the Orthopaedic/ Neurosurgical team may be required to decide the most appropriate treatment.
- If a cancer patient presents to the orthopaedic team dialogue with the cancer clinician is recommended

**If patients have pain plus another symptom or sign from the list below further investigation is required**

#### Symptoms

- 1. Pain**
  - (a) Back pain or nerve root pains associated with alteration in gait pattern
  - (b) May be aggravated by movement, coughing or lying flat
  - (c) May precede other symptoms by up to 6 weeks
- 2. Weakness**

Motor weakness below level of lesion – may be rapid or slow in onset
- 3. Sensory disturbance**

Usually starts distally and varies from numbness and tingling to complete loss of sensation below the level of the lesion
- 4. Incontinence**

Generally occurs late and suggests poor prognosis for recovery.

#### Signs

Any of these should arouse a high index of suspicion.

- Weakness/paraparesis/paraplegia
- Sensory loss – below lesion – assess level
- Reflexes – absent at level of lesion – increased below it
- Clonus
- Painless bladder distension

#### Investigations

**URGENT MRI** Arrange same day, preferably after discussion with Oncologist.

**MRI Investigation of choice** and **shows full extent of disease & sites of compression.**

**Bone scan** identifies bone metastases **but not site of cord compression**

**X-Ray** identifies spinal involvement in **80%** of those with extradural compression

#### Differential diagnosis

- Malignancy
- Epidural abscess
- Haemorrhage (Epidural or into cord)
- Disc protrusion

## Management

This is a **medical emergency** and definitive treatment should start on day 1 if possible

### Steroids

- **Start Dexamethasone 16mg/day** by any convenient route **immediately**.
- Usually given in divided doses to increase tolerability and if possible last dose not later than 6pm (insomnia can be a problem if taken at bedtime)
- May give short term improvement while arrangements are being made for investigations and treatment.

There are 3 definitive treatment options available. These should be discussed with cancer clinician to determine which is most appropriate option for the patient .

### Radiotherapy

- **Urgent** referral for radiotherapy unless prognosis deemed to be only a few days.
- This is the **most common treatment** for patients with metastatic spinal cord compression

### Surgery

- After discussion with cancer clinician refer for surgical assessment with neurosurgeon or orthopaedic surgeon in the following situations:
  - Limited disease and patient fit
  - No previously established tissue diagnosis
  - Spinal instability
  - Failed radiotherapy

### Chemotherapy

- May be indicated in treatment of some tumours

## Outcome

Review of the literature suggests:

1. Most patients who can walk at the start of treatment continue to be able to do so after treatment
2. About 25% of those unable to walk (but having some residual power) are able to walk after treatment
3. About 5% with no voluntary movement are able to walk after treatment.

## Superior Vena Caval Obstruction<sup>17,19</sup>

### Introduction

- Most commonly seen in lung cancer (approx 75% of cases)
- Consider lymphoma, particularly in young patients (approx 15% of cases)
- Regard as **medical emergency** as patient's condition may deteriorate rapidly
- Essentially a clinical diagnosis

### Symptoms and signs

1. Swelling of the face and neck
2. Feeling of fullness in the head
3. Prominent blood vessels neck, trunk and arms
4. Dyspnoea, worse on lying flat

### Investigations

#### Chest CT scan

If new presentation

#### CXR and

Obtain **histology** via bronchoscopy, mediastinoscopy or other accessible site

### Management

- **Immediately start Dexamethasone** (16mg/day) reduces the oedema associated with mediastinal tumour and helps prevent radiotherapy-induced inflammation.
- There are 3 important definitive treatments available
  - **Vascular stenting** may be considered. The insertion of a self-expanding metal stent into the superior vena cava is a relatively new form of treatment. Thrombolysis may need to be performed prior to stent insertion but the immediate and long term effects are good, with over 90% of patients dying without recurrence of SVCO. Useful for rapid onset SVCO and where histology is awaited
  - **Chemotherapy** may be treatment of choice in lymphoma and small cell lung carcinoma (if diagnosis previously established)
  - **Radiotherapy** - may be treatment of choice if mediastinal tumour is the cause

### Recurrent superior vena caval obstruction

- Retrial of Dexamethasone
- Radiotherapy may be considered.
- Vascular stent may be replaced.

### Outcome

Definitive treatment often gives useful symptomatic relief

### Supportive/Palliative Care

These interventions may be required alongside definitive treatments or if definitive treatment has failed

- Oxygen/Heliox
- Low dose opioids
- Benzodiazepines
- Anxiety relaxation techniques
- Company as patients may get very frightened

## Hypercalcaemia <sup>17, 23</sup>

### Introduction

- Affects up to 10% of patients with cancer
- Most commonly seen in breast, lung, renal carcinoma and myeloma
- Frequently missed; consider in unexplained vomiting or confusion
- Some cases due to tumour secreting parathyroid hormone like substance
- Patient may not have demonstrable bone metastases

### Symptoms and Signs

1. **Early symptoms are non-specific:** lethargy, malaise, anorexia
2. Thirst, polyuria, dehydration
3. Nausea and vomiting, constipation
4. Confusion
5. **Later features:** drowsiness, fits, coma

### Investigation

Serum calcium (corrected for serum albumin)  
Urea and electrolytes

### Management may include

- Pts with rising **Ca <3.0** who are not symptomatic push oral fluids & recheck Ca
- **Treat patients who are symptomatic with Ca >2.8**
- **Discontinue any medication which promote hypercalcaemia** e.g. thiazide diuretic, vitamin D and calcium supplements
- **Rehydration** – Usually 2 litres of 0.9% saline but depends on clinical condition
- **Correct hypokalaemia**
- **Bisphosphonate** – e.g. Pamidronate or Zoledronic acid in iv normal saline

Corrected Ca (mmol/l)	<3.0 if symptomatic	3.0-3.5	3.5-4.0	>4.0
Dose of Pamidronate	30mg	60mg	90mg	90mg
Dose of Zoledronic acid	4mg	4mg	4mg	4mg

<b>Pamidronate:</b>	Infuse in sodium chloride 0.9% (60mg in at least 250ml) at max rate of 60mg/hr (No dose reduction in renal impairment but max infusion rate is 20mg/hr) <b>Maximum dose per treatment course is 90mg</b>
<b>Zoledronic acid:</b>	Infuse 4mg dose in 50ml sodium chloride 0.9% over at least 15 minutes (No dose reduction in mild and moderate renal impairment, but not recommended in severe impairment)

### Follow up

Recheck serum calcium after treatment (1-5 days.) If still raised seek advice  
When calcium level normalised patient should have level checked fortnightly

### Outcome

About 70% of patients respond.

Average duration of response is 3-4 weeks

Prognosis depends on whether the underlying tumour can be treated.

Ensure patient is followed-up after treatment.

For recurrent Hypercalcaemia consider maintenance oral Bisphosphonate or intermittent IV Pamidronate/Zoledronic acid`