

Cancer cells sometimes grows around the spinal cord and cause compression on the spinal cord which result in neurological damage. Metastatic spinal cord compression (MSCC) can result in irreversible damage including paraplegia and is considered an oncological emergency.

## Clinical presentation

- **Back pain:** The hallmark sign of MSCC is new-onset back pain that worsens with movement, when lying down, or when coughing, and that radiates along the dermatome innervated by the affected nerve root. It occurs in up to 95% of people with MSCC.
- **Reduced power/Muscle weakness:** Up to 85% of people with MSCC also have reduced power in their limbs.
- **Loss of sensation:** 65% of those with MSCC suffer with loss of sensation
- **Motor weakness:** sometimes reported as heaviness or loss of balance
- **Autonomic dysfunction:** particularly altered bowel and bladder function, generally occurs later in MSCC progression
- **Perianal numbness:** may be present in cauda equine compression.

## Diagnosis

### Imaging

Magnetic resonance imaging (MRI) is the gold standard method for MSCC diagnosis and should be performed immediately. Corticosteroids should be initiated on suspicion of cord compression.

### Medical history and examination

The initial diagnosis should involve a medical history and physical examination.

- The ability to ambulate must be assessed – this is a highly predictive finding of the chance of recovery.
- A sensory level may be evident on pinprick examination and may help to focus on the suspected level of cord compression.
- Reflexes may be absent at the level of the compression and hyperactive below.

## Initial treatment management

Once a diagnosis of MSCC has been made, initial treatment goals include:

- prevention of further damage through stabilisation of the spine
- adequate pain relief
- restoration of neurological status if possible.

1. Mobilisation with unstable MSCC
2. Corticosteroids
3. Analgesia
4. Management of bowel and bladder dysfunction
5. Prevention of pressure ulcers
6. Multidisciplinary referral

## Definitive treatment management

Definitive treatments depend on several factors, including life expectancy, tumour type, extent of disease, prior treatment, and degree of motor impairment.

### Surgical intervention

Once MSCC is confirmed, urgent neurosurgical opinion should be sought. There are potential improvements in outcomes for appropriate patients treated with surgery upfront, this will depend upon spinal stability, patient and malignancy related factors.

### Radiation therapy

In patients who are not candidates for upfront surgery, the role of radiotherapy has been well established. Radiation therapy may also be appropriate after surgery.

### Systemic chemotherapy

Due to its unpredictable and slow response, the role of chemotherapy is limited in the acute management of MSCC.