Metastatic Spinal Cord Compression

MSCC · An oncological emergency — the deficit you arrive with is often the one you keep

SAME-DAY MRI
whole spine

SUSPECT IT EARLY *back pain precedes weakness by weeks — that is the window*

THE WARNING SYMPTOM

New or progressive back pain in anyone with current or previous cancer. Suspicious features: **worse lying flat or at night**, **band-like or radicular** radiation, thoracic location, and pain **worse on coughing or straining**. **Pain is the earliest sign and the only reversible stage.**

THE LATE SIGNS

Limb weakness, gait disturbance, a **sensory level**, and **bladder or bowel dysfunction** — retention with overflow, or incontinence. **Sphincter involvement is a late and ominous finding.** Examine for a level, tone, reflexes, and perianal sensation.

WHICH CANCERS

Commonest with **breast, lung, prostate**, then **myeloma**, renal, lymphoma and thyroid. It can also be the **first presentation** of an unknown primary, so absence of a cancer history does not exclude it.

ACT THE SAME DAY *this is an emergency escalation, not a routine referral*

1. **Any person with current or previous cancer plus symptoms or signs of cord compression needs same-day emergency escalation.** Do not wait for an outpatient slot or the next working day.
2. **Give dexamethasone 10 mg IV immediately, then 4 mg IV every 6 h** (16 mg per day), **as soon as possible** for anyone with **neurological symptoms or signs** of MSCC, and continue while awaiting definitive treatment. It reduces vasogenic edema around the cord. Add gastric protection and monitor glucose.
3. **Urgent MRI of the whole spine** — not just the painful level. **Multiple non-contiguous levels are common**, and they change the radiotherapy field and the surgical plan. If MRI is contraindicated, request **whole-spine CT with contrast**.
4. **Discuss with oncology and spinal surgery on the day.** The decision between surgery and radiotherapy depends on spinal stability, the degree and duration of deficit, tumor radiosensitivity, prognosis, and fitness.
5. **Nurse flat with log-rolling until the spine is confirmed stable.** Mobilizing an unstable spine can convert a partial deficit into a complete one.

THE STEROID NUANCE

Where MSCC is **suspected or confirmed but there are no neurological symptoms or signs, steroids are not indicated** — they are reserved for patients with neurology, or with a **known hematological malignancy**, for whom steroids are also offered. This avoids exposing patients with pain alone to unnecessary steroid harm.

DEFINITIVE TREATMENT *surgery first in the right patient, radiotherapy for most*

Option	When it is chosen
Surgery then radiotherapy	Favored for **instability**, **bone retropulsion**, a **single level**, **radioresistant** tumors, progression despite radiotherapy, or where tissue is needed. The **Patchell** trial showed **direct decompressive resection plus radiotherapy** beat radiotherapy alone in selected patients, particularly for retaining the ability to walk.
Radiotherapy alone	Default for **multilevel disease**, radiosensitive tumors, patients unfit for surgery, or limited prognosis. Also given postoperatively.
Steroid weaning	Where there are no other effective treatment options, **reduce dexamethasone gradually until stopped**, continuing only if symptoms return or worsen as the dose falls. Do not leave patients on high-dose steroid indefinitely by default.

THE REST OF THE CARE *what determines quality of life afterwards*

SUPPORTIVE

Analgesia for what is often severe bone pain, with early palliative care input · **VTE prophylaxis**, since these patients are immobile and have cancer · **bladder management** and bowel regimen · pressure area care · **early rehabilitation and occupational therapy** · bone-targeted therapy such as bisphosphonates or denosumab where indicated.

PROGNOSIS DRIVES URGENCY

Ambulatory status at the time of treatment is the strongest predictor of ambulatory status afterwards. Patients who are walking when treated usually keep walking; those who are already paraplegic rarely recover. **This is why hours matter and why back pain in a cancer patient must not wait.**

THE OTHER CORD EMERGENCIES *same presentation, different pathway*

Diagnosis	How it differs, and what it needs
Cauda equina syndrome	**Below L1–L2**, so it is a **lower motor neuron** picture: flaccid weakness, **areflexia**, **saddle anesthesia**, and **urinary retention with overflow**. Usually a large disc prolapse rather than tumor. **Emergency MRI and same-day surgical decompression** — the window is measured in hours.
Spinal epidural abscess	**Fever, back pain and neurological deficit** is the classic triad, though all three are present in a minority. Risk factors: **intravenous drug use, diabetes, bacteremia, recent spinal instrumentation**. Raised inflammatory markers. Needs **MRI, blood cultures, antibiotics and usually surgical drainage** — do not give steroids reflexively.
Transverse myelitis	**Subacute over hours to days**, often with a preceding illness. Needs MRI plus **CSF examination** and treatment with high-dose steroids — a different steroid indication from MSCC.

EXAMINE PROPERLY *the findings that localize and grade it*

WHAT TO DOCUMENT

Power in all limb groups with a graded scale, a **sensory level** tested from below upward, reflexes and plantars, tone, **perianal sensation and anal tone**, and a **post-void bladder scan**. Record the time of examination — the rate of change is what drives urgency.

WHAT IT TELLS YOU

Upper motor neuron signs (increased tone, brisk reflexes, upgoing plantars) with a sensory level indicate **cord** compression. **Flaccid, areflexic weakness with saddle anesthesia** indicates **cauda equina**. **Spinal shock can make an acute cord lesion look flaccid initially**, so do not be falsely reassured by absent reflexes early on.

PEARLS & PITFALLS

- **Image the whole spine.** Compression at multiple non-contiguous levels is common and scanning only the painful area misses it.
- **Back pain in a cancer patient is MSCC until excluded.** The pain-only stage is the one where you can still preserve function.
- **Do not wait for weakness to justify urgency.** Once the deficit is established, most of it is permanent.
- **Steroids are for patients with neurology**, or known hematological malignancy — not for every suspected case.
- **Ask directly about bladder and bowel function** and check for retention. Patients rarely volunteer it.
- **It can be the first presentation of cancer.** No known primary does not mean no MSCC — get the MRI.

References: NICE NG234, Spinal metastases and metastatic spinal cord compression · Patchell et al., direct decompressive surgical resection in metastatic spinal cord compression (Lancet) · International multidisciplinary consensus recommendations on MSCC.

Educational aid; verify doses against local oncology protocol and patient factors.