**MSCC and Neurological signs**

**Mini Chalk Talks Oncology CSU**

**MSCC definition:**

Displacement/indentation of spinal cord or caudal equina nerve roots by malignancy.(Lateral nerve root compression requires urgent medical attention as well but is NOT a medical emergency like MSCC/cauda equina syndrome.)

**Scenario**

A 70 year old gentleman with no significant past medial history presented with a short history of leg weakness, urine retention and back pain. On examination, tone increased in both lower limbs, power was 3/5 bilaterally and there was reduced sensation to the level of the umbilicus.

**1. Where is the possible level of the lesion?**

Most likely in spinal cord given bilateral upper motor neurone signs. Bilateral brain lesions causing this clinical picture would be less likely, especially given presence of back pain. Cauda equina compression (below L1) would be expected to produce lower motor neurone signs. But sensory level to umbilicus suggests lesion at T10 or above. Bilateral signs (plus upper motor neurone signs) would make lumbosacral nerve plexus or peripheral nerve lesion unlikely.

**2. What other signs might you expect to see on clinical examination?**

Clonus, positive Babinski sign (up going plantars), brisk reflexes.

**3. How would you manage this gentleman?**

Admit, analgesia, urinary catheter, urgent MRI whole spine, dexamethasone 16mg + PPI, LMWH prophylaxis, staging CT scan, bloods including calcium, PSA and myeloma screen if MSCC confirmed.

You’ve done the ABCDE management and started 16mg dexamethasone.

**DEFG - DON’T Ever Forget Glucose.**

Start regular BM monitoring especially if your patient has diabetes! (you don’t want to end up with a ketoacidosis situation….)

**4. Common malignancies associated with MSCC?**

Myeloma, Breast, Prostate, Lung, Renal cell carcinoma

**5. Most common region of spine involved in MSCC ?**

Thoracic > Lumbar > Cervical

**6. What is the further treatment for MSCC?**

The two cornerstones of treatment are spinal surgery and radiotherapy. The decision depends on: (NOMS framework)

1. Neurological status : ambulatory or complete loss of power? For how long?
2. Oncological status: is the cancer radiosensitive (eg myeloma, seminoma, lymphoma exquisitely radiosensitive, almost always treat with RT). Is there other systemic disease?
3. Mechanical status: Is the spine stable? Spinal stability is best assessed with a CT spine. Surgeons will ask for this if considering spinal/neuro surgery. SINS score is a spinal stability scoring system based on imaging/clinical signs.
4. Systemic status: Performance status. Comorbidities. General health. Prognosis.

**7. The future…?**

Spinal SABR - we’ve just started to to this at Leeds Cancer Centre. Often done post 5pm. Dr Louise Murray is the person to contact if you want to see this in action!

**Neurological Signs and Neuroanatomical Localisation of Lesion**

**Cerebellar lesion:** broad based gait, ataxia, slurred speech, intention tremor, incoordination, dysdiadochokinesia and reduced tone/reflexes

**Brainstem lesion:** may produce crossed signs (e.g. ipsilateral cranial nerve signs, contralateral limb signs) depending on level of lesion within the brainstem (corticospinal tracts decussate within the brainstem)

**Brown Sequard syndrome:** spinal cord hemi lesion produces ipsilateral upper motor neurone palsy and loss of proprioception/vibration and contralateral loss of pain/temperature since ascending spinothalamic tracts (pain, temperature) decussate immediately after entering the spinal cord while descending corticospinal (motor) and ascending dorsal column (vibration, proprioception) tracts decussate in the brainstem.

**Spinal level localisation - see chart**