

## GUIDELINES FOR THE MANAGEMENT OF SPINAL CORD COMPRESSION

Epidural spinal cord compression is one of the most feared complications of malignant disease. This complication occurs in approximately 5% of all cancer patients. It is the first manifestation of cancer in 15 to 20% of patients who develop this problem. Prostate, lung and breast cancer account for most of the cases but virtually any malignancy has the potential to produce spinal cord compression. The most common sites of involvement are the thoracic spine followed by the lumbar spine with less than 10% of the cases occurring in the cervical spinal area. Although pain related to vertebral metastasis may be present from weeks to months, the development of neurological symptoms particularly motor weakness signals a more accelerated phase where paraplegia can develop over a period of hours. The obstruction of spinal cord venous outflow by tumor leads to venous hypertension, decreased arterial flow and eventual irreversible spinal cord infarction. It is imperative therefore to make this diagnosis as early as possible. The better the neurological function at the beginning of treatment the more likely the patient is to remain ambulatory. In a high risk patient, delays of as little as several hours may make the difference between paraplegia and normal ambulation.

In guiding management I have divided patients into low, intermediate and high risk probabilities for having spinal cord compression.

Low risk: Patient with known cancer, new onset of back pain with positive bone scan but no neurological signs or symptoms.

Management: The patient should have plain films and a gadolinium enhanced MRI scan \* of the entire spine (30% of patients with cord compression will have more than one site) within 72 hours and instructions regarding onset of neurological symptoms and the need for more urgent evaluation. No decadron is given.

Intermediate risk: Patient with known cancer and bony metastasis (especially lung, prostate, breast) with back pain with radicular component but a totally normal neurological exam.

\* CT- myelogram acceptable but MRI preferred

Management: Plain films and an MRI scan of the entire spine within 24 hours. If the work up is negative instructions should be given to return to the hospital immediately at any sign of motor weakness, sensory symptoms or bowel and bladder problems. Decadron 20 mg. initially IV and 8 mg p.o. TID should be given until spinal cord compression is ruled out.

High risk: Patients with known cancer who develop motor and/or sensory symptoms in the lower extremities with or without (rare) back pain. Patients without known cancer or risk for epidural abscess who develop back pain associated with lower extremity neurological signs and symptoms.

Management: Admit the patient. Decadron 40 mg IV and 10 mg IV q6h with gastric protection. Emergency MRI scan of entire spine within a few hours of admission. If spinal cord compression found in patient with known cancer follow guideline below. If no previously known cancer, obtain urgent consult with neurosurgeon and radiologist to decide needle vs. open biopsy. If tumor is posterior only (~20% of patients) decompressive laminectomy can be done.

### MANAGEMENT OF DIAGNOSED SPINAL CORD COMPRESSION

1. Emergency consultation with radiation therapist and neurosurgeon.
2. Continue IV decadron at 40 mg/day IV.
3. Radiation therapy is started within a few hours of diagnosis. if neurologic symptoms progress neurosurgical intervention may be appropriate.
4. Indications for surgery
  - No previous diagnosis of cancer
  - Progression on radiation
  - Unstable fracture or bone in spinal canal
  - Previous radiation to site of spinal cord compression
  - Consider in radio-resistant tumors (renal cell, melanoma, sarcoma)

Please note that surgery for the 80% of tumors that involve vertebral bodies requires an anterior approach with removal of vertebral bodies, bilateral rods and methylmethacrylate support. This extensive surgery is best performed at a tertiary center.

5. If patient stable or improving begin rapid taper of steroids beginning on day 4 with goal of completion of taper by day 14.
6. Chemotherapy is not given concurrently with spinal cord radiation.