Primary and Metastatic Spinal Tumours

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Spinal Tumours

- Incidence
- Evaluation
- Diagnosis
- Investigations
- Management
  - Medical
  - Surgical
  - Outcome

Incidence

- Commonest tumours of the spine are metastatic and outnumber benign tumours by 25-40:1
- Breast, lung, prostate and thyroid constitiute 80%
- 10% die without identification of primary

location

- 70% located in the thoracolumbar spine
- 20% lumbosacral
- 10% cervical spine

Cord compression rarely seen in cervical spine

Much more common in thoracolumbar spine

Red flag Features

- Age < 20 and > 60 years
- History of cancer
- Immunosuppression
- Prolonged use of steroids
- Recent infection elsewhere
- Pain increased or unrelieved by rest
- Night pain
- Non-mechanical thoracic pain
- Bladder or bowel incontinence
- Urinary retention with overflow incontinence

Clinical features

- Thorough history
- Primary bone tumours in the first three decades
- Metastatic tumours in patients older than 40
- Primary malignant tumours in patients older than 21 except for osteosarcoma and Ewing's

Clinical features

- Pain is the dominant symptom
- Out of proportion to usual degenerative process
- Pain at rest
- Night pain
- New and different pain in a patient with background chronic pain

Clinical features

- Personal history of remote cancer
- Unexplained weight loss
- Fatigue
- Anorexia
- Unexplained cough, swellings, Bleeding PR or PV
- Tenderness and limited range of movt.

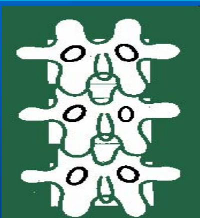
Diagnosis

- High index of suspicion
- Clinical features of insiduous onset new back pain which is intrusive at rest coupled with systemic symptoms, tenderness in the back
- FBC, ESR, Liver function tests, U's and E's, Serum electrophoresis, PSA, Thyroid and breast screening

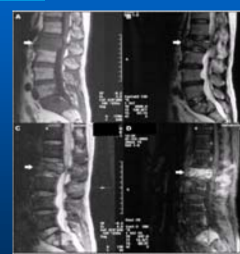
Radiology

- Plain X rays useful, but changes often late
- Metastasis usually occur in the pedicle or the body of the vertebra (need blood supply)
- Technetium bone scan
- CT of the abdomen and chest
- MRI scan frequently diagnostic

Winking owl sign



MRI SPINE metastases



Biopsy

- If primary not found, CT guided biopsy is the best way of getting the diagnosis
- Oncologist and surgeon must liase closely
- Biospy tract must be marked to include in margin of excision
- Best done in centre where definitve treatment will be done

Benign tumours

- Rare
- 1st 2 decades of life
- Osteoid osteoma 11% of primary tumours
- Typically painful scoliosis in teens
- Responds to NSAID's
- Posterior elements of the spine

Benign tumours

- Osteoblastoma has a nidus of >2 cm
- More aggressive
- Surgical excision or radiofrequency ablation
- Nerological involvement common

Malignant lesions

- Multiple myeloma is the commonest primary malignant tumour
- Seen over the age of 70
- Vertebral compression fracture seen commonly
- Blood tests, marrow aspiration and Bence jones proteinuria characteristic
- Xrays- punched out lesions

Metastatic lesions- Management

- Pain, non progressive neurological deficit and no instabilty > manage by Radiotherapy/medical management
- Radiation therapy must not be started till at least three weeks from surgery
- Surgery done if quality of life usefully prolonged

Tokuhashi score

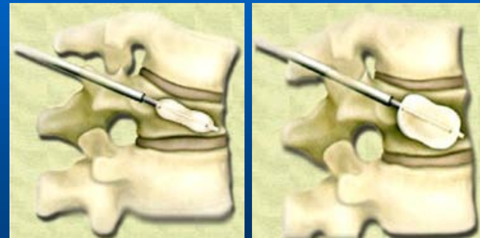
- Method to guide treatment
  - 1. Patient's general condition
  - 2. Number of extraspinal bony metastasis
  - 3. Number of vertebral body metastasis
  - 4. Number of visceral organ metastasis
  - 5. Primary cancer focus
  - 6. Cord injury

  Each parameter scored from one to three
  <7 active mgt
  >8 palliative

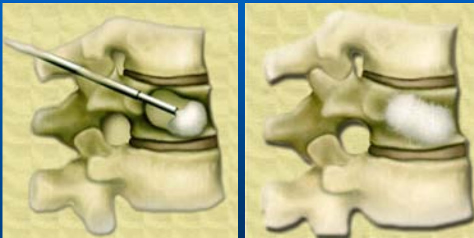
Surgical treatment

- Instrumentation/excison of lesion
- In combination with decompression if neurological involvement
- Newer methods- vertebroplasty and kyphoplasty often relieve pain well and give good palliation
- These can be done in isolation or together with instrumentation

Balloon Kyphoplasty



Balloon kyphoplasty-procedure



Summary

- Complex problem requiring holistic management of patient and relatives
- The patient must be kept well informed
- Surgeon should be well versed in managing patients conservatively and operatively
- MDT management essential- Oncologist, palliative care team, Physiotherapists and nursing staff are part of the team

Thank you