

TUMOURS OF THE SPINE

Metastatic tumours

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The commonest malignancies that metastasise to the spine are shown in Table 37.10. Red flags picked up on history or examination will alert the clinician to this possible diagnosis. Over 80% of patients with spinal metastases present with progressive pain, and only 20% present with spinal cord compression. Relevant investigations include full blood count (FBC), urea and electrolytes, liver function tests, calcium, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), prostate-specific antigen (PSA), serum protein electrophoresis, thyroid function tests (where a thyroid mass has been palpated) and nutritional indices. Plain radiographs may show an absent pedicle ('winking owl' sign), vertebral cortical erosion and/or vertebral collapse. MRI of the whole spine will detect most metastases. Most metastases are osteoblastic and will show up on bone scintigraphy; however, osteolytic lesions such as multiple myeloma and renal cell carcinoma may not show up on an isotope bone scan. Metastases from the prostate may be sclerotic. Biopsies may be obtained via a percutaneous CT-guided method or open biopsy. Henry W Meyerding, 1884–1969, Professor of Orthopaedic Surgery, Mayo Clinic, Rochester, MN, USA. James Ewing, 1866–1943, Professor of Pathology, Cornell University Medical College, New York, NY, USA, described this type of sarcoma in 1921. Treatment options include orthotics, steroids (dexamethasone), radiotherapy, chemotherapy, hormonal therapy, surgery or a combination of any of the above. Radiotherapy promotes reossification of the vertebral body and reduces tumour load. It can be very effective for reducing 'bone pain'. Lymphoma, breast, lung and prostate metastases are highly radiosensitive. Gastrointestinal adenocarcinoma, metastatic melanoma, thyroid and renal carcinoma are radioresistant. Small cell carcinoma of the lung, Ewing's sarcoma, thyroid carcinoma, breast carcinoma and neuroblastoma are usually sensitive to chemotherapy and should have chemotherapeutic agents as the first-line management. Adenocarcinoma of the lung is resistant to chemotherapy. Prostate metastases may respond well to antiandrogenic hormone medication.

(see Further reading). Type 1 Dysplastic Associated with congenital deficiency of the L5/S1 articulation Type 2 Isthmic Associated with a lesion of the pars interarticularis Three subtypes: 2A: lytic defect of the pars 2B: elongated or attenuated pars 2C: acute pars fracture Type 3 Degenerative Segmental instability due to disc spondylolisthesis degeneration/facet arthrosis Type 4 Traumatic Acute fracture in the region of the posterior elements, other than the pars interarticularis Type 5 Pathological Generalised bone disease resulting in attenuation of the pars (e.g. metabolic, neoplastic) Type 6 Post surgical After decompression of the lumbar spine TABLE 37.9 The Meyerding classification for the degree of slip of spondylolisthesis. Grade I 1–25% Grade II 26–50% Grade III 51–75% Grade IV 76–100% TABLE 37.10 Commonest malignancies that

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Robert W Gaines Jr , contemporary , surgeon, Department of Orthopaedic Surgery , University of Missouri, Columbia, MO, USA.

(d) (e) (g) Figure 37.5 High-grade spondylolisthesis. Lateral standing radiograph grade IV slip associated with high pelvic incidence. Anteroposterior (AP) radiograph the inverted Napoleon hat sign. T2-weighted mid-sagittal magnetic resonance imaging scan the 'domed sacrum'. The patient underwent a modified Gaines procedure under one anaesthetic anterior vertebral resection of L5 along with the L4/5 and L5/S1 intervertebral discs, followed by resection of the posterior elements, articular process and L5 pedicles. AP final reduction of L4 onto the sacrum with pedicle fixation from L4 to S2. standing radiograph at 12 months. (f) (a) demonstrates Meyerding (b) demonstrates (c) shows (d) with (e) and lateral (f) radiographs demonstrate (g) Postoperative full-length lateral

reserved for those patients whose life expectancy exceeds 3–6 months. For patients with malignant spinal cord compression, the combination of decompressive surgery with stabilisation and postoperative radiotherapy has been shown to be superior in outcome when compared with radiotherapy alone. In one randomised trial, surgery and radiotherapy permitted most patients to remain ambulatory for the remainder of their lives, Summary box 37.7 Metastatic tumours of the spine portion of their remaining time as paraplegics.

Commonest presentation is progressive spinal pain Whole-spine MRI will detect most metastases Surgery is indicated for instability, pain, progressive deformity or neurological deficit (a) (c)

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