PRINCIPLES OF TREATMENT Primary bone tumours

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Benign Most latent and active benign bone tumours that need treat - ment are treated by intralesional curettage. Packing of the cavity with a graft or bone substitutes is usually not required. Simple bone cysts can heal following pathological fracture and an initial conservative approach following fracture is best. If the cyst persists f ollowing union of the fracture, and the risk of further fracture is deemed to be high, then a variety of tr eatments, including injection with steroid or bone marrow and surgical curettage, have been described. Osteoid osteomas can resolve spontaneously . However, symptoms are often pronounced, and most patients are treated by CT-guided thermocoagulation. Sur gical removal (which usually requires burring down onto the surface of the nidus and removing it) is seldom required. Large or more rapidly growing benign bone tumours may require more extensive surgical excision and reconstruction. Giant cell tumours of bone are associated with a high local - recurrence rate and are usually treated with thorough curet - tage or, when very extensive, surgical resection of the a ff ected bone. The RANK-ligand (receptor activator of nuclear factor - ligand) antibody denosumab has an ev olving role in treating these tumours. Malignant primary bone tumours require a multidisciplinary approach that may include chemotherapy and radiotherapy as well as surgery . Osteosarcoma and Ewing’s sarcoma are treated with neoadjuvant (before surgery) chemotherapy and surgery . Chondrosarcomas are not sensitive to chemotherapy or radio therapy and treatment is surgical excision where possible. The aim of surgery for a primary malignant bone tumour is to remove it completely (usually with a layer of normal tissue around it that includes the biopsy track) and then to recon struct the limb to maximise physical function. Following excision the surgical margins can be classified as sho wn in Table 42.6 . In most cases, limb salvage with excision and reconstruc tion is possible (Figure 42.29). Only a minority of patients (10–15%) require primary amputation, either because of neurovascular invasion or because the reconstructed limb may be less functional than an amputation (e.g. for some tumours Cornelis Pieter van Nes , 1897–1972, Dutch orthopaedic surgeon, who practised in Leiden and described rotationplasty in 1950. higher rate of local recurrence than amputation. However, no di ff erence in overall survival has been demonstrated. The sur - gical options for malignant primary bone tumours include: /uni25CF amputation or van Nes rotationplasty; - /uni25CF excision alone (for dispensable bones, e.g. the fibula, or areas where reconstruction is di ffi cult, e.g. in parts of the pelvis); /uni25CF excision and reconstruction with a structural graft or mas - - sive endoprosthesis. The complications of massive endoprosthetic reconstruc - tion of a limb include infection, instability and wear or loosen - ing of the prosthesis. Summary box 42.11 Treatment of benign bone tumours /uni25CF /uni25CF /uni25CF Summary box 42.12 - Treatment of malignant bone tumours /uni25CF /uni25CF /uni25CF /uni25CF

TABLE 42.6 Classi /f_i cation of surgical resection margins. Intralesional Resection through the tumour Marginal Resection through the reactive zone of the tumour Wide Resection outside the reactive zone of the tumour Radical Resection of the whole anatomical compartment Figure 42.29 Endoprosthetic replacement of the distal femur. Benign lesions can usually be simply curetted CT-guided thermocoagulation is used for osteoid osteoma Large benign tumours may require reconstruction Osteosarcomas and Ewing’s sarcoma require neoadjuvant chemotherapy Chondrosarcomas are insensitive to radiotherapy or chemotherapy Most malignant tumours can be treated with limb salvage There is no difference in survival between amputation and limb salvage

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