Chondrogenic tumours

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These tumours produce chondroid matrix and include a wide range of benign and malignant tumours. Osteochondroma (Figures 42.14 and 42.15) is a benign cartilage-capped bony projection, thought to originate - - from the physis. The bony projection always grows away from the joint towards the diaphyseal region of the bone. It has no structures attached to it. Osteochondromas can be pedunculated (with a stalk) or sessile (without a stalk). The stalk or base is always continuous with the intramedullary cavity of the bone, and the continuity of the cortex of the bone into an osteochondroma is a characteristic radiological feature. They are usually solitary , but some patients have multiple osteochondromas (hereditary multiple exostoses, autosomal dominant inheritance) (Figure 42.16). Osteochondromas can cause local irritation and complications include mechanical symptoms, nerve impingement, vascular pseudoaneurysm, fracture and infarction. Increasing size or pain, particularly after skeletal maturity , is concerning and may indicate malignant transformation. The incidence of malignant transformation is less than 1% in solitary osteochondromas and 1–3% in patients with multiple osteochondromas.

Figure 42.13 Parosteal osteosarcoma of the distal femur in an unusu ally young patient. There is no continuity between the tumour and the intramedullary cavity of the femur (arrow). Figure 42.14 Pedunculated osteochondromas (arrow) of the

proximal /f_i bula with pseudarthrosis. Osteochondromas always grow away from the physis and are in continuity with the intramedullary cavity of the bone they arise from. Figure 42.15 Excised pedunculated osteochondroma showing a cartilage cap.

Enchondroma (Figure 42.17) is a benign cartilaginous neoplasm within the intramedullary cavity of bone. Approximately 50% are in the hands and feet: enchondromas are the most common bone tumours in the hand. Although they can present with pain, swelling or pathological fracture, many are entirely asymptomatic and are detected incidentally . Patchy calcification, expansion and scalloping can be visible on radiographs, but some are only diagnosed on magnetic resonance imaging (MRI) scan. Ollier’s disease is a developmental condition characterised by multiple enchondromas. In Ma ff ucci syndrome, multiple enchondromas are associated with multiple angiomas. Malig tion to chondrosarcoma can occur in approx nant transforma imately 20% of patients with Ollier’s disease and is almost inevitable in patients with Ma ff ucci syndrome. Chondroblastoma (Figure 42.18) is a benign cartilage- producing tumour that occurs in the epiphyses of bones in en. It is most common around the knee. Pain is often childr tion and possibly joint e ff usion. severe, with associated inflamma On plain radiographs, there is an often barely visible lytic lesion in the centre of the epiphysis. Previously , the diagnosis was often missed, but this has become less frequent with MRI scanning, which usually identifies the lesion with an intense inflammatory response. Chondrosarcoma (Figures 42.5, 42.6 and 42.7) is a malig nant tumour with cartilage di ff erentiation. The biological Summary box 42.5 Tumours producing cartilage /uni25CF /uni25CF /uni25CF /uni25CF behaviour ranges from very low-grade lesions to highly aggressive dedi ff erentiated tumours. Patients usually present with pain and/or swelling and symptoms may be longstand - ing. Many chondrosarcomas arise in pre-existing lesions such as

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Figure 42.16 Multiple osteochondromas in hereditary multiple exostoses. Note the multiple bone involvement and the /f_l ask-shaped femoral metaphyses. Osteochondroma – cartilage capped; grows away from physis Enchondroma – inside bone; commonest in hands and feet Chondroblastoma – in epiphyses of adolescents Chondrosarcoma – of varying malignancy Figure 42.17 (a, b) Calci /f_i cation and pathological fracture in a benign enchondroma of the proximal phalanx of the ring /f_i nger (arrows).

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