Primary Central Chondrosarcoma

Wilfred C.G. Peh, MD, FRCP, FRCR

PRESENTATION

A 70-year-old woman presented with a dull pain over her right upper thigh.

COMMENTS

Chondrosarcoma is a malignant tumor of cartilaginous origin. These tumors may be primary or secondary to a pre-existing benign cartilaginous lesion. A tumor that originates within a bone is termed a central (or medullary) chondrosarcoma. However, chondrosarcomas show wide variation in their clinical, histologic, and behavioral features, with the existence of several variants. Chondrosarcomas are the third most common primary malignant tumors of bone, after myeloma and osteosarcoma. Primary chondrosarcomas occur more frequently than the secondary form, and central lesions are more common than peripheral ones. Chondrosarcoma typically affects patients in their fourth to sixth decades of life, with an equal sex distribution. The most frequent complaint is pain, and there may be local swelling and dysfunction of an adjacent joint. There may be a delay of several years in diagnosis of this lesion. The tumor usually grows slowly and metastasizes late.

The femur, most often its ends, is the bone most often affected. The proximal humerus is another common site, with other sites being the tibia, ribs, ilium, scapula, and spine. Radiographically, the tumor is seen as an osteolytic expansile lesion that may be sharply marginated. Matrix mineralization is frequent, and finding internal calcifications is an important indicator of the presence of cartilage tissue. These calcifications may be amorphous, punctate, small, flocculent, and irregular. Small lesions are round or oval in shape, while larger lesions, on reaching the cortex, have a tendency to conform to the shape of the bone. Over half of the lesions show endosteal scalloping. The combination of cortical expansion and cortical thickening is suggestive of the diagnosis. In more aggressive tumors, cortical destruction, poorly defined margins, and a soft tissue mass are seen. Computed tomography may be useful in detecting calcifications that are not readily visible on radiographs. The main role of magnetic resonance imaging is in the local staging of the tumor extent.

Figure. Anteroposterior radiograph of the right upper femur shows an expansile osteolytic lesion involving the proximal femoral shaft. There is endosteal scalloping as well as thickening of the cortex. Areas of punctate, irregular, and amorphous calcifications are seen within the lesion. Faint linear periosteal new bone formation is present along the medial cortex of the upper femur.

Dr. Peh is Senior Consultant, Department of Diagnostic Radiology, Singapore General Hospital, Singapore.

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