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Chondrosarcoma: Correlation between radiological findings and histopathological diagnosis concerning the grade of malignancy.

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BACKGROUND:

Chondrosarcoma (CS) is a malignant tumor that produces cartilage matrix. It is a very heterogeneous tumor with areas of different grade of malignancy within the same tumor.

CS can be classified into the following 3 histological grades:

I: low cellularity, prominent chondroid matrix

II: increased cellularity, prominent myxoid matrix

III: high cellularity, atypia, mitosis.

METHODS AND MATERIAL:

A list with all the patients with the diagnosis of CS between 2004-2011 was provided by the archive of the Pathology Department at Sahlgrenska University Hospital in Gothenburg, Sweden. Patients with uncertain diagnosis or incorrect initial diagnosis of CS as well as cases with incomplete radiological imaging were excluded. Since CS is a very heterogeneous tumor and a needle biopsy may not localize the area of highest grade, only cases where open biopsy was performed, were included.

42 patients fulfilled the criteria for this study and their MRI and if available CT examinations were studied by a senior resident in general radiology and an experienced musculoskeletal radiologist. The location of the tumor, the size, the tumor borders, the signal on T1 and T2, the contrast enhancement as well as the presence of surrounding edema, bone destruction or bone expansion, periosteal reaction, cortical bone changes, calcifications, intralesional bleeding, necrosis, metastases, pathologic fracture, progress in size and recurrence were recorded.

According to the radiological appearance and with no knowledge of the histological grade, each tumor was classified as low-grade, intermediate-grade and high-grade malignant tumor in order to correspond to the histological grading mentioned above. The radiological grading of each tumor was then compared to its histological grading.

RESULTS:

The results from the comparison will be presented.

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