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Chondrosarcoma in children and adolescents – Are they different?

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Introduction: Chondrosarcomas are uncommon in children and adolescents (<10%) and literature is lacking on their behaviour in this population.

Questions: We asked - 1) if there was any difference in the pattern of presentation of chondrosarcomas in patients under the age of 21? and 2) were their oncologic outcomes any different from those diagnosed in adults ?

Methods: 241 patients underwent surgery for chondrosarcoma between April 2002 and November 2012 at our institute. 15 (6 %) were under 21 years (11 male and 4 female). 3 patients had disease in humerus, 5 in pelvis, 3 in femur and one each in tibia, clavicle, scapula and spine. 6 patients had primary chondrosarcoma and 9 (60%) had secondary chondrosarcoma (enchondroma 1; osteochondromas 8). In patients older than 21 years only 17 % had secondary chondrosarcoma. Of the 15 cases, 3 patients were metastatic at presentation.

One patient underwent intralesional spinal decompression, 1 had an open biopsy only. Thirteen patients were treated with curative intent. One underwent amputation and 12 patients had limb salvage surgery. Of these 12 cases margins were free in 10 patients.

Results: 14 of these patients were available for follow up. The mean duration of follow up of survivors was 44 months (range 24 months – 84 months). There were 2 local recurrences. At final analysis, 9 patients had no evidence of disease and 5 had died due to disease (including the 3 who were metastatic at presentation). The overall survival at 5 years was 75 %. Though not statistically significant the patients with secondary chondrosarcoma at presentation had a better survival compared to those with primary tumors (88 % vs. 44 % p=0.17).

Conclusion: Secondary chondrosarcomas account for 60 % of tumors in the younger population. Apart from this their behaviour and oncologic outcomes are similar to chondrosarcomas that occur at a later age.