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Campanacci III giant cell tumour of the knee: curettage versus primary resection

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Background: Giant cell tumours of bone (GCT) are benign aggressive primary bone lesions most commonly seen around the knee (distal femur, proximal tibia). Campanacci grade III tumours have significant bone destruction and expansion into the soft tissues and although detailed curettage is the standard treatment for GCT, some authors recommend outright resection for Campanacci III tumours due to the higher risk of local recurrence. This study looks at the roles of curettage and primary resection of Campanacci III GCT of the knee.

Methods: Retrospective review of 141 patients treated at our institution from 1980 to 2010. Patients were grouped by initial surgical treatment, curettage versus resection. Local recurrence and functional outcomes were the primary endpoints investigated.

Results: Mean follow-up of 63 months (range 3 – 438 months). 73% (n = 103) were treated by detailed curettage with or without cementation while 27% had outright resection. While local recurrence for the curettage group was significantly higher (21.4% vs 5.3% p = 0.002), MSTS scores on final follow-up was lower for those treated with resection (25.1 vs 27.3, p = 0.006). 25% (n = 26) of those initially treated with curettage eventually underwent joint resection because of local recurrence or complications of curettage (osteoarthritis, fracture). Those that underwent secondary resection did not have different functional outcomes than the primary resection group (MSTS score 24.5 vs 25.1 p = 0.31). No local recurrence of GCT was seen after secondary resection.

Conclusions: Detailed curettage with or without cementation has a higher risk for local recurrence but has better functional outcomes than primary resection. Secondary resection due to failed curettage is not associated with poorer functional outcomes or local recurrence.

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