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## FUNCTIONAL RESULTS AND QUALITY OF LIFE AFTER OPEN SYNOVECTOMY FOR GIANT CELL TUMORS OF SYNOVIUM IN THE KNEE

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**BACKGROUND** Diffuse-type giant cell tumors(Dt-GCT) are benign but locally aggressive synovial lesions. Although arthroscopic synovectomy(AS) is advocated as alternative to open synovectomy(OS) to minimise surgical morbidity, recurrence-rates after AS remain unacceptably high. Our study aim was to evaluate the influence of (multiple) synovectomies on functional outcome and quality of life(QOL) of patients with Dt-GCT in the knee treated in a tertiary center(1980-2010).

**METHODS** We retrospectively reviewed 36 patients, eight were excluded with <1.5 year follow-up and 8 without functional and QOL data. Twenty patients were included: 12 referred with recurrence and eight primarily treated at our center. Median follow-up was 7.7years (1.6-15.9). Eleven patients were male. Mean age at final follow-up was 45.9years (11-77). We evaluated recurrence rates, Knee-injury and Osteoarthritis-Outcome-Score(KOOS), Musculoskeletal Tumor Society(MSTS), Toronto Extremity Salvage Score(TESS) and Short Form(SF)-36.

**RESULTS** Eleven patients underwent AS and one OS before referral to our center, where OS was performed for recurrent Dt-GCT. Five of these 12 patients developed further recurrences (42%) and were treated with repeated OS. Three of the referred patients had severe recurrent disease and finally underwent distal femur resection and prosthetic reconstruction (one revision surgery for prosthetic loosening). Eight other patients underwent primary OS in our hospital; two developed local recurrence (25%), one treated with repeated OS and one with AS. No severe complications were noted in this group (one urinary tract infection and one haemarthros).

Overall, patients primarily treated at our center with OS with no subsequent recurrence had higher mean KOOS, MSTS, TESS and SF-36, after mean 6.6years follow-up (Figure 1). Multiple synovectomies resulted in significant lower KOOS-Pain ( $p=0.024$ ), KOOS-Symptoms ( $p=0.041$ ), KOOS-QOL ( $p=0.032$ ) and TESS ( $p=0.016$ ), after mean 7.1years follow-up.

**CONCLUSION** As the majority of patients were referred to our center with recurrent disease, we had the opportunity to evaluate the influence of (multiple) synovectomies on functional outcome and QOL. After primary OS, recurrence rate was acceptable and functional outcome and QOL were good. Functional and QOL-scores were significantly lower in patients with multiple synovectomies. In our opinion, centralized primary radical OS is advocated, in order to decrease local recurrence-rates and improve postoperative functional outcome and QOL.

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