

## SESSION 0-20

### ANKLE ARTHROPLASTIES AND REVISIONS III

#### LATERAL PARAPATELLAR APPROACH IN PRIMARY TOTAL KNEE ARTHROPLASTY OF THE VALGUS KNEE

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**Background** Anatomic and pathological characteristics of the valgus knee deformity represent a challenging issue for the implant of a total knee arthroplasty. The surgical approach in such cases should allow a direct and easy exposure of the joint, easy lateral soft tissue balancing and adequate patellar tracking.

**Materials and Methods** Twenty-four total knee arthroplasties were implanted in valgus knees between January 2002 and September 2005. A mean preoperative valgus deformity of 18° was assessed on standing x-rays. Four posterior stabilized, eighteen posterior stabilized rotating platform prosthesis and two superstabilized prosthesis were implanted in 21 patients. The surgical approach has been in all cases a lateral parapatellectomy. Follow-up assessments were obtained for all patients at a mean 23 months. They consisted of a Knee Society Score and a Patellar Score evaluation, standing AP and lateral radiographs and skyline x-rays obtained at a flexion of 45°.

**Results** A mean preoperative Knee Society Clinical Score of 32,7 points (range, -4 to 64 points) significantly improved at follow-up to an average 88,8 points (range, 57 to 99 points;  $p < 0,05$ ). The Knee Society Function Score significantly increased from a preoperative mean score of 32,7 points (range, -20 to 75 points) to an average follow-up score of 81,2 points (range, 30 to 100 points;  $p < 0,05$ ). The Patella Score revealed absence of anterior pain in all cases but one that reported severe pain. A satisfactory patello-femoral alignment of 4,7° (range, 1° to 10°) was obtained at last follow-up x-rays. One intraoperative condylar fracture occurred and was treated with a single screw.

**Discussion** The lateral approach of valgus knees led to satisfactory results in primary total knee arthroplasties in a percentage of cases comparable or superior to those presented in literature for different approaches. In addition, lateral release is performed as a part of the approach itself, allows preservation of the blood supplies of the extensor apparatus and an optimal patellar tracking in most cases.

**Conclusions** In conclusion, the lateral approach for a primary total knee arthroplasty could be recommended in valgus knees affected by osteoarthritis because as it proved to be effective in achieving a satisfactory implant positioning and functional outcome while reporting minor complications.

#### TOTAL KNEE ARTHROPLASTY: MEDIAL PARAPATELLAR VS MIDVASTUS APPROACH – A RANDOMIZED STUDY OF 25 CASES

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**Background** The knee osteoarthritis is a mechanical disease. It leads to a destruction of the articular cartilage and then of the bone. It affects the adults over 40 years old and it is the most important cause of invalidity in the elderly. The total knee arthroplasty is the means to reduce the pain and to restore the function.

**Materials and Methods** From November 2004 to February 2007 we made a randomized study on two groups of patients with knee osteoarthritis. We treated the first group (12 patients) by a standard

approach (medial parapatellar) and the second group (13 patients) by a midvastus approach.

**Results** The outcome analysis is based on the radiological images (three projections) and clinical evaluation by a Knee Society Score (KSS) and Western Ontario Macmaster Osteoarthritis Index Score (WOMAC).

**Discussion** The outcomes didn't show a statistical difference between the two groups for the radiological and clinical results.

**Conclusions** It needs a lot of patients and a longer follow up to obtain a better significant outcomes. At this moment the choice of the different approach depends on the ability of the surgeon.

#### Suggested readings

1. MacLennan WJ (1999) History of arthritis and bone rarefaction. *Scott Med J* 44:18
2. Lawrence RC (1998) Estimates of the prevalence of arthritis and selected musculoskeletal disorders in the United States. *Arthritis Rheum* 41:778
3. Insall JN (1995) Comparative analysis of outcome scores in total knee arthroplasty. AAOS, Orlando, FL, USA
4. Insall JN (1993) Surgical techniques and instrumentation in total knee arthroplasty. *Surgery of Knee*. New York, Churchill Livingstone, USA

#### RESULTS OF COMPARISON BETWEEN STANDARD MEDIAL PARAPATELLAR, MEDIAL MIDVASTUS, SUBVASTUS AND LIMITED MEDIAL PARAPATELLAR APPROACHES IN TOTAL KNEE ARTHROPLASTY

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**Background** Standard medial parapatellar approach is certainly the most used approach for TKA, due to its versatility and relative easiness of execution. We have examined other surgical approaches in TKA, they are: medial midvastus, subvastus and limited medial parapatellar, a variation of the medial standard parapatellar approach.

**Materials and Methods** This study compared surgical and clinical parameters of 690 knee prosthesis cruciate retaining (Profix, Smith & Nephew) implanted between 2002–2006 by using standard medial parapatellar (SMP) (260 cases), medial midvastus (MMV) (260 cases), subvastus (SV) (65 cases) and limited medial parapatellar approaches (LMP) (105 cases). The minimum follow-up was 6 months. We evaluated all patients using the Knee Society Rating System. The parameters taken into consideration for this study include: quadriceps strength recovery, ROM, Q angle, prosthesis component positioning, blood loss, intensity and duration of pain, degree of satisfaction of patients.

**Results** We have noticed an easier respect of the Q angle, a faster strength recovery of the quadriceps, a lesser intensity and duration of post-operative pain, a better patellar tracking in the groups SV, MMV and LMP if compared with the group SMP. In the MMV group it has been found an profile alteration of medial vastus profile, lasting even for many years after the operation and without a reduction in the strength. When comparing the groups MMV and SV with the group LMP, we have noticed an even faster strength recovery of the quadriceps and a lesser intensity and duration of pain, though, this happened only in the first postoperative week and with a tendency towards equality of values within the eighth week.

**Discussion** MMV and SV are very good approach for a faster post-operative recovery if compared to SMP, although the latter is more versatile. Besides, the SV can not be used on every kind of patient. The LMP seems to be the most versatile among approaches we have examined, considering the preservation of the extensor apparatus and the easiness and extensive applicability of the technique.

**Conclusions** The findings of our study seem to suggest that the LMP access is the one to be preferred in TKA.