

Computer assisted total knee arthroplasty following prior fractures around the knee with retention of hardware

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Introduction: Post traumatic arthritis of the knee can be a consequence of fractures around the knee and retained hardware can complicate any further surgical option including arthroplasty. Both staged surgical procedures to remove before the hardware or simultaneous procedure of arthroplasty and removal of hardware have been indicated with an increased risk of complications. Likewise these cases, despite increased costs, have been likely predicted to achieve inferior results compared to routine TKR following primary arthritis. Aim of this study is to present a consecutive series of TKA following distal femur or proximal tibial fractures using a computer assisted technique without the removal of retained hardware assessing both the efficacy of navigation in managing these complex cases as “routine” primary arthroplasties.

Materials & Methods: Among an experience of 1107 computer assisted TKR, a consecutive series of 32 patients treated with a computer assisted TKR following femoral or tibial fractures around the knee and with retained hardware were included in the study (group A). The interval between the fracture and operation averaged 6.2 years (range 1-12 years), the retained hardware was an intramedullary nail in 9 cases, plates in 16 cases and screws or staples in the other cases. All patients in group A were matched with a patient who had undergone to a computer assisted TKR using the same implant and software because of atraumatic knee arthritis in the same period (group B). Patients were matched in terms of age, gender, pre-operative range of motion, pre-operative arthritis severity according to Albin classification, type and grade of deformity and implant features (cruciate retaining or sacrificing). There were 18 male and 14 female for each group, the mean pre-operative age was 64.3 years (range: 54 -72) for the group A and 65.4 years (range: 53-74) for the group B. The mean pre-operative flexion was 85.5 degrees (range: 65-115) and 88.1 degrees (range: 70-115) for the post traumatic group and the matched group respectively. Surgical time and operative complication according to Kim classification were collected. Clinically both the groups were evaluated using the Knee Society, Functional, and WOMAC scores.

Results: At the latest follow-up respectively of 55.1 (range: 26-96) and 53.5 (range: 25-94) months for group A and B no implant was revised and no major signs of radiological loosening were seen in either group. 22 patients in each group required postoperative blood transfusions. There were no statistical significant differences in surgical time, hospital staying, intra/post operative complications. Likewise no statistically significant difference was seen for the Knee Society, Functional, and WOMAC scores between the 2 groups. Likewise implant alignment was similar between the 2 groups with similar radiological parameters.

Conclusions: The results of this study demonstrated that knee arthritis following fractures around the knee can be safely managed using computer assisted TKA without any need of hardware removal and obvious costs savings. The Authors achieved both same results and same complication rate of similar uncomplicated primary TKR.

References

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