

MIS & Navigation in Knee Arthroplasty

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The success of minimally invasive unicondylar knee arthroplasty with limited surgical dissection encouraged surgeons to recognize the differences between unicondylar knee arthroplasty and total knee arthroplasty. It was logical to attempt a total knee arthroplasty(TKA) with minimally invasive technique. The purpose of this study is to evaluate early results of minimally invasive total knee arthroplasty using navigation system by comparing them with regular total knee arthroplasty with manual technique.

We evaluate early results of 49 minimally invasive TKA assisted by navigation control and compare them with those of 53 regular manual TKA. The minimally invasive TKA means smaller skin incision around 10cm long and limited mid-vastus approach that minimally invade extensor mechanism without eversion of patella.

The 90° flexion was achieved on average of 33 hours in minimally invasive TKA compared to 51 hours in regular manual TKA($p=0.046$). The statistically significant difference also existed in mean lag in active extension at 7 days after operation. The overall valgus between two groups (6.9° and 7.6°) was not significantly different. But outlier over optimum $\pm 3^\circ$ was 3 knees in group B but no outlier in group A. Minimally invasive TKA using navigation system is believed to help not only reducing postoperative pain, earlier and easier recovery from TKA but producing more accurate anatomical axis than regular TKA.