

Results, clinical outcome and analysis of non-patella resurfacing total knee arthroplasty in osteo arthritis knee

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Abstract

Introduction: There is no difference in clinical and functional outcome after total knee arthroplasty (TKA) for knee osteoarthritis between patellar resurfacing and non-resurfacing. Thus, we have performed this study to evaluate the outcome of non-patella resurfacing total knee arthroplasty.

Materials and Methods: A total of 50 patients in series who came to our institute with clinical signs and symptoms of osteoarthritis confirmed radiologically, were operated. We measured the outcomes with Knee society score and VAS score.

Results: There was significant difference in outcome of non-resurfaced patella pre-operatively and post-operatively. There was significant improvement in mean range of motion (ROM) 87.2 pre-op vs 104.4 post-op, KSS pre-op mean 39.66 vs post op mean 83.26. The improvement in functional score were pre-op 52.5 to post-op 83.36. The mean VAS score decreased from 7.98 to 2.

Conclusion: The results showed significant difference in knee society score and VAS pre-operatively and post-operatively.

Keywords: Non-patellar resurfacing, Osteoarthritis, Total knee arthroplasty.

Introduction

Total knee arthroplasty is a reliable procedure used to correct knee deformities, relieve pain and improve knee function following arthritis. Anterior knee pain is a major post-operative complication that compromises patient satisfaction. Patellar resurfacing have offered varying results. The hesitancy to resurface the patella routinely in total knee arthroplasty stems from the history of higher than acceptable complications with patellar component. A lack of patellofemoral symptoms preoperatively creates further doubt as to whether all patients need patellar resurfacing.

The results comparing knee pain in resurfaced and non-resurfaced patella are mixed. There are authors recommending routine resurfacing¹⁻⁴ routine retention^{5,6} and selective resurfacing of the patella.⁷⁻¹¹ Wisdom of adding a patellar component routinely has been tempered by concerns about implant loosening, patellar fractures, avascular necrosis, patellar subluxation and dislocation, and extensor mechanism rupture.¹²⁻¹⁴ The issue of whether or not the patella should be resurfaced routinely during total knee arthroplasty is still controversial. The issue concerns whether long term patient satisfaction is improved by patellar resurfacing and whether patellar symptoms and complications can be avoided by not resurfacing the patella.

Methodology

All 50 patients in the series were referred to orthopaedic OPD of C.U. Shah Hospital, Surendranagar with clinical symptoms and signs of osteoarthritis confirmed radiologically for tricompartmental osteoarthritis and were treated as indoor patients.

Patients with no ipsilateral knee or ankle arthritis or fracture or spine deformity were advised for operation.

Patients were sent for medical and anaesthetic fitness

Fit patients giving consent taken for operation.

Inclusion Criteria

1. All patients undergoing total knee replacement in C.U. Shah Medical College and Hospital.
2. Age 50 and above
3. Neuro-vascular status normal

Exclusion Criteria

1. All patients who are medically unfit
2. All patients satisfying inclusion criteria
3. Ipsilateral hip and knee arthritis
4. Total knee replacement done in pathological fracture/ stress fracture/ healed fracture in proximal tibia or distal femur.
5. Spine deformity or disc pathology

Operated patients are evaluated by Knee society score and Visual Analogue Score.

Patients are followed up for minimum 1 year and evaluated with follow up x-rays.

We did prospective observational study.

All surgery were performed by experienced surgeons

Standard surgical techniques including midline incision and medial parapatellar exposure was utilized.

Standard femoral and tibial cuts were taken and Johnson & Johnson Depuy posterior cruciate substituting total knee replacement prosthesis were used with cemented components.

In all patients, patellar osteophytes were removed, rim was cauterized in 5mm edge of patella, fibrillated cartilage smoothed and denervated.

A standard protocol was followed ensuring all subjects received similar preoperative, perioperative and post-operative care.

Early mobilization was encouraged starting first post-operative day.

Results

We have used paired t-test using the Graphpadsoftware for analysis.

The mean pre-op knee society clinical scoring is 39.66

The mean post op knee society clinical scoring is 83.26

The p-value is less than 0.0001 which is extremely statistically significant.

The mean pre-op functional score is 52.5.

The mean post op functional score is 83.36.

The p value of the patient is less than 0.0001 which is extremely statistically significant.

In our study pre-operative VAS scoring is 7.98 and post-operative is 2.

Discussion

The total number of patients in our study is 50.

The prevalence of male and female in our study is equal.

The mean pre-operative and post-operative knee society clinical and functional scoring is extremely significant $p < 0.0001$.

The knee society clinical score in our study is 83.26 which is excellent. We compared our scoring with that of resurfaced patella.

A.J. Smith, D.J. Wood, M.G. Li et al.¹⁵ did a randomized study on 181 patients.

Clinical follow up was available in 159 knees. On comparing the pre-op and post-op clinical outcome with their resurfaced group we achieved excellent outcome.

Table 1

Column 1	pre-operative	post- operative
Resurfacing	39.7	92
non- resurfacing	40.08	83.26

The functional score is independent of clinical score and evaluate the walking distance, act of climbing and descending stairs, and use of aids while walking.

Functional outcome in A.J. Smith, D.J. Wood, M.G. Li et al.¹⁵ was lower compared to our study.

Table 2

Column 1	pre-op	post-op
resurfacing	51.9	60
non resurfacing	52.5	84.06

Visual analogue score is another method used to evaluate the outcome based on the intensity of pain.

The mean VAS score in study of Mohammad H. Kaseb, Mohammad N. Tahmasebiet al¹⁶ pre-operative and post-operative is 8.67 and 1.5.

In our study pre-operative VAS scoring is 7.98 and post-operative is 2.

Table 3

Column 1	Pre-op	Postop
resurfacing	8.67	1.5
non resurfacing	7.98	2



Fig. 1



Fig. 2

Conclusion

The result of our study indicate no superiority of non-patellar resurfacing compared to patellar resurfacing in terms of clinical outcome.

The knee society clinical outcome of non-patellar resurfacing is not statistically significant in comparison to resurfacing of patella

The functional outcome of non-patellar resurfacing is good and comparable to other studies.

The number of patients having anterior knee pain is quite low.

The reason of having less anterior pain may relate to denervating the patellar rim by cauterization and removing the osteophytes and decompressing it.

Our results establish that not resurfacing the patella gives equally good result, however we recommend selective resurfacing of patella as indicated such as rheumatoid arthritis, age more than 60 years.

Conflict of Interest: None.

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