

## To Study the Role of Arthroscopy in Management of Degenerative Osteoarthritis of Knee: A Prospective Study

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## Abstract

## Original Research Article

**Background:** Degenerative osteoarthritis of the knee joint, is typically the result of wear and tear and progressive loss of articular cartilage. Common clinical symptoms include knee pain that is gradual in onset and worse with activity, knee stiffness and swelling, crepitus. Patients with knee osteoarthritis have decreased levels of physical activity in comparison to their healthy counterparts. **Aim:** To study the role of arthroscopy in management of degenerative osteoarthritis of knee. **Material and methods:** A prospective study was carried out among patients having symptoms and signs of degenerative OA knee coming to Orthopedic OPD at Pravara Rural Medical College. Patients more than 50 years of age, medically fit for surgery, failed to improve on conservative treatment and willing to participate were considered for the study. Thus such 30 cases were studied. All cases were treated by arthroscopic interventions. Statistical analysis was done using open epi version 2.3.1. **Results:** Mean age was 58.7+12.4 years, majority being females 60%. 14% cases had meniscal tear. On Kellgren and Lawrence's arthroscopic grading majority had grade II and III. On final outcome on follow up showed excellent results. 48% excellent, 42% good, and 10% fair. **Conclusion:** Arthroscopic intervention is an effective method for treatment of degenerative osteoarthritis of knee in patients with negligible complications due to its minimally invasive nature and early mobilization. Patients with grade I and grade II degenerative osteoarthritis have good results.

**Keywords:** Arthroscopy, knee joint, osteoarthritis (OA), degenerative.

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## INTRODUCTION

Degenerative osteoarthritis of the knee joint is the most common form of arthritis and one of the leading causes of disability in elderly population, affecting around 250 million people worldwide.<sup>1,2</sup> Risk Factors for Knee osteoarthritis include: modifiable factors like articular trauma, Occupation – prolonged standing and repetitive knee bending, muscle weakness or imbalance, weight, health–metabolic syndrome and non-modifiable factors like gender-females more common than males, age, genetics. Depending on the source, roughly 13% of women and 10% of men 60 years and older have symptomatic knee osteoarthritis.<sup>3</sup> Quadriceps weakness is the primary clinical sign of

knee osteoarthritis. Quadriceps strength is critical to the performance of activities of daily living and those with quadriceps weakness have difficulty performing daily activities such as walking and stair climbing [4].

**Aim:** To study the role of arthroscopy in management of degenerative osteoarthritis of knee.

## MATERIAL AND METHODS

A prospective study was carried out among patients having symptoms and signs of degenerative OA knee coming to Orthopedic OPD at Pravara Rural Medical College. Patients more than 50 years of age, medically fit for surgery, failed to improve on

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conservative treatment and willing to participate were considered for the study. Thus such 30 cases were studied. All cases were treated by arthroscopic interventions.

**Arthroscopic Examination of the Knee**

The knee was divided routinely into the following compartments for arthroscopic examination:

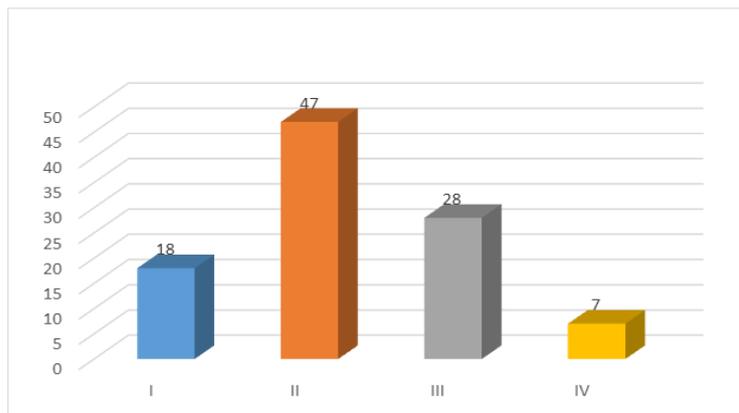
1. Suprapatellar pouch and patellofemoral joint
2. Medial parapatellar gutter
3. Medial compartment
4. Intercondylar notch
5. Patella-femoral joint
6. Lateral compartment

7. Lateral gutter and lateral parapatellar gutter

As per clinical and intraoperative findings, we specifically performed arthroscopic lavage and debridement was done. Statistical analysis was done using open epi version 2.3.1.

**RESULTS**

Mean age was 58.7+12.4 years, majority being females 60%. 14% cases had meniscal tear. On Kellgren and Lawrence’s arthroscopic grading majority had grade II and III.



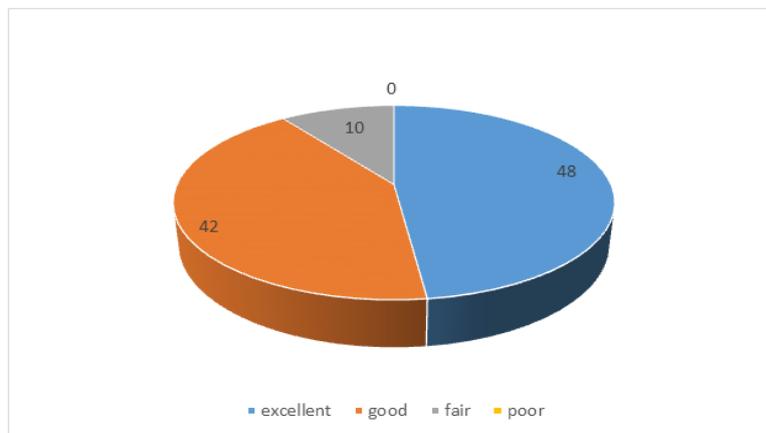
**Figure 1: Kellgren and Lawrence’s arthroscopic grading**

**Table 1: Type of surgery done**

Surgery	Frequency	Percentage
Lavage or debridement	12	40
Partial Menisctomy	6	20
Full Partial Menisctomy	3	10
Repairing tears	3	10
Smoothing rough surfaces	6	20
Total	30	100

Most common type was lavage or debridement 40% followed by menisctomy 30% and so on.

On final outcome on follow up showed excellent results. 48% excellent, 42% good, and 10% fair.



**Figure 2: Final outcome**

Post-operative complications were seen among 20% cases. Those were post operative pain and swelling.

**Table 1: Post-operative complications**

Complications	Frequency	Percentage
Yes	6	20
No	24	80
Total	30	100

## DISCUSSION

Mean age was 58.7+12.4 years, majority being females 60%. Similar results were seen in study by Wai EK *et al.*, [5], where majority cases were elderly. Study by Hanna FS *et al.*, [6] also showed female preponderance.

In present study, 14% cases had meniscal tear. On Kellgren and Lawrence's arthroscopic grading majority had grade II and III. Gross *et al.*, [7] were not able to show significant correlation between pre-operative radiological grading and the outcome but in our study we have found that there is significant correlation between these two and patient with grade I or II arthritis, do well with the procedure. Patients with grade III arthritis had fair improvement, whereas there is seldom any improvement in grade 4 osteoarthritis. According to John Richmond [8] arthroscopic knee surgery is beneficial for mild to moderate osteoarthritis (Kellegren-Lawrence grade I and II). Study by Siemieniuk R A C *et al.*, [11] showed that lavage was most commonly done which was similar to present study which showed 40% cases had lavage or debridement.

On final outcome on follow up showed excellent results. 48% excellent, 42% good, and 10% fair. Post-operative complications were seen among 20% cases. Those were post operative pain and swelling. Jackson *et al.*, [9] and Moseley *et al.*, [10] also had excellent results 45% and 42% respectively. Post operative complication were minimal and resided within a week.

## CONCLUSION

Arthroscopic intervention is an effective method for treatment of degenerative osteoarthritis of knee in patients with negligible complications due to its minimally invasive nature and early mobilization. Patients with grade I and grade II degenerative osteoarthritis have good results.

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