

## The Impact of Arthroscopy on the Management of Disorders of the Knee

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### ABSTRACT

**Background:** In orthopaedic surgery, knee arthroscopy is a frequently performed treatment. The effectiveness of this surgery has been called into doubt recently, as several randomized controlled trials have shown no benefit in treating osteoarthritis. As a result, several trend studies with differing outcomes have been carried out to examine the rates of knee arthroscopy and subsequent conversion to total knee arthroplasty (TKA). TKA progression is thought to be a sign that the initial knee arthroscopy was ineffective.

**Objectives:** This study aims to determine the effects of total knee arthroplasty (TKA) following the initial knee arthroscopic procedure, as well as to track changes in these variables throughout time.

**Methods:** This cross-section observational study was carried out in the Department of Orthopaedic, TMSS Medical College and Hospital. The duration of the period from July 2021 to June 2022. A total of 35 patients were participate in the study. Statistical analyses of the results were be obtained by using window-based Microsoft Excel and Statistical Packages for Social Sciences (SPSS-24), where required.

**Result:** The mean ( $\pm$  SD) age of the patients was  $63.25 \pm 2.58$ . Minimum 3(8.6%) of the patients were within the age group of >70 years and 10(28.6%) of the patients were within the age group of 60-65 years. Here, 55% of the patients were female and 45% were male. About 7(20%) of the patients had no difference in management, treatable condition was found in 11(31.4%) of the patients and 17 (48.6%) of the patient's procedure done through arthroscopy. Clinical diagnosis was confirmed in 19(54.3%) patients, smaller incision was used in 6(17.1%) patients, different diagnosis was found 6(17.1%) patients and additional diagnosis were found in 4(11.4%) patients. About 15(42.9%) of the patient's condition were not amenable to operation, exploratory arthrotomy were avoided in 12(34.3%) patients and the procedure was done in 8(22.9%) patients through arthroscopy.

**Conclusion:** Arthroscopic treatment of disorders of the knee arthroplasty provides reliable expectations for improvement in function, decrease in pain, and improvement in knee scores for most patients.

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### I. INTRODUCTION:

One frequent orthopaedic surgery used to treat degenerative knee disease, which includes degenerative meniscal lesions, is knee arthroscopy [1]. Degenerative meniscal lesions, on the other hand, are becoming more widely recognized as an early indicator of osteoarthritis (OA) in the knee with no discernible impact on pain [2]. Over the past ten years, a growing body of research has indicated that knee arthroscopy in these patients does not provide any additional benefits over non-surgical or placebo management [3].

About 25% of those over 45 suffer from degenerative knee disease, which is an osteoarthritis that affects the cartilage of the knee and/or joint lining.[4] Severe pain and other symptoms can occur from this condition and have a detrimental effect on quality of life (QoL).[5] The only treatment that is truly effective is total knee replacement, which is only offered to individuals with severe conditions who are not responsive to conservative measures.[6]

The most common ambulatory orthopaedic operation and the ninth most common ambulatory procedure overall in the United States is arthroscopic knee surgery for patients with degenerative knee

disease.[7] Following such surgery, there is a brief rise in pain and a requirement to limit activities for a duration of two to twelve weeks.[8] The current guidelines do not specifically recommend partial meniscectomy for patients with degenerative meniscal tears (with or without other concomitant degenerative changes), but they do advise against arthroscopic lavage and/or debridement for patients with symptomatic osteoarthritis of the knee.[9] In addition, a lot of orthopaedic doctors recommend arthroscopic partial meniscectomy for patients who have meniscal tears and mechanical symptoms, which usually involve locking or catching of the knee.[10]

Presently, only patients with radiographic evidence of knee OA are advised against knee arthroscopy, and patients with degenerative meniscal lesions who do not have knee OA radiographic evidence are advised differently to have knee arthroscopy [11]. 2012 saw the release of the first national guidelines for musculoskeletal problems in Sweden by the Board of Health and Welfare [12].

The study contains advice on osteoporosis, osteoarthritis, and inflammatory rheumatic disorders and is aimed at experts and decision makers. The guideline advised against using knee arthroscopy in patients with knee OA because, based on the information available at the time, it was determined that the procedure had no greater impact on pain, function, or quality of life than placebo treatment [13] This recommendation may have the unintended consequence of shifting the diagnostic codes from knee OA to other conditions including degenerative meniscal lesions [14]. Our goal in the current study was to evaluate how this study might affect the use of knee arthroscopy in public health.[15]

## II. METHODOLOGY:

This cross-section observational study was carried out in the Department of Orthopaedic, TMSS Medical College and Hospital. The duration of the period from July 2021 to June 2022. A total of 35 patients were participate in the study. To measure the impact of arthroscopic surgery, the patients with symptomatic degenerative knee disease (defined as persistent knee pain that affects the patient's QoL and does not respond to conservative treatment), with or without osteoarthritis, of any age were included. Both male and female and gave consent to be included in the study. Patients who were not willing to give consent were excluded. Face to face interview was done to collect data with a semi-structured questionnaire. After collection, the data were checked and cleaned, followed by editing, compiling, coding, and categorizing according to the objectives and variable to detect errors and to maintain consistency, relevancy and quality control. Statistical evaluation of the results used to be obtained via the use of a window-based computer software program devised with Statistical Packages for Social Sciences (SPSS-24).

## III. RESULT:

**Table-1: Distribution of the patients by Age group**

Age group (years)	N=35	%
50-55	5	14.3
55-60	9	25.7
60-65	10	28.6
65-70	8	22.8
>70	3	8.6
Mean ±SD	63.25±2.58	

Table-1 shows that the mean±SD age of the patients was 63.25±2.58. Minimum 3(8.6%) of the patients were within the age group of >70 years and 10(28.6%) of the patients were within the age group of 60-65 years. Here, 55% of the patients were female and 45% were male.

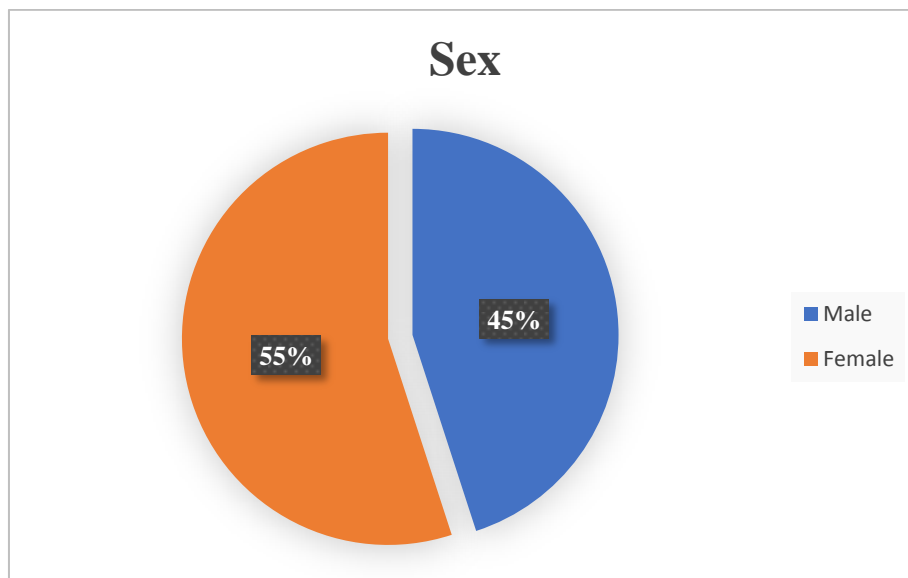


Figure-1: Distribution of the patients by sex

Regarding residence, 80% of the patients were from urban area and 20% from rural area.

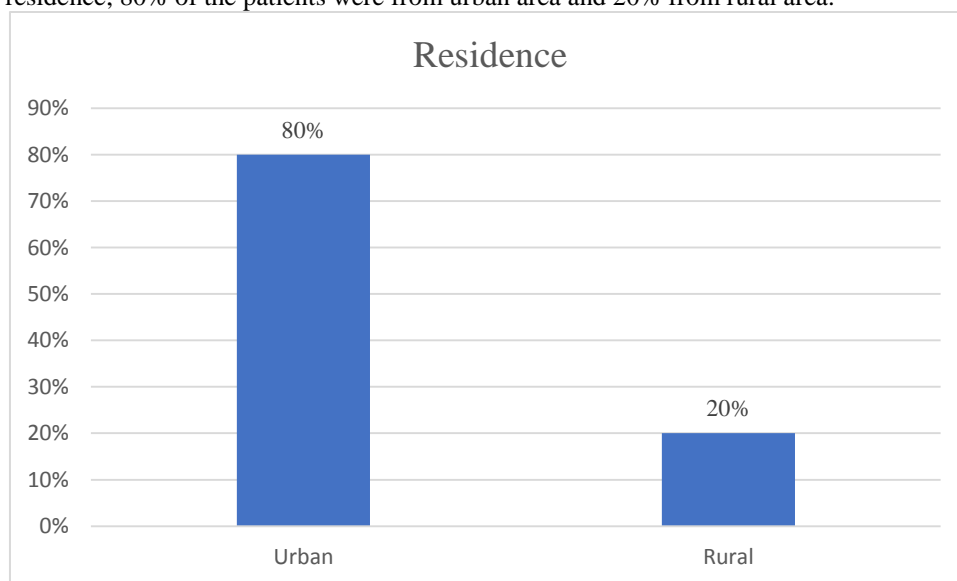


Figure-2: Distribution of the patients by Residence

Table-2: Distribution of the patients by effects of arthroscopy on management

Diagnostic arthroscopies	N=35	%
No difference in management	7	20
Treatable condition found	11	31.4
Procedure done through arthroscope	17	48.6
<b>Total</b>	<b>35</b>	<b>100</b>

Table-2 shows that, 7(20%) of the patients had no difference in management, treatable condition was found in 11(31.4%) of the patients and 17 (48.6%) of the patients procedure done through arthroscopy.

Table-3: Distribution of the patients in whom the management was not altered by arthroscopy

	N=35	%
Clinical diagnosis confirmed	19	54.3
Smaller incision used	6	17.1
Different diagnosis	6	17.1
Additional diagnosis	4	11.4
<b>Total</b>	<b>35</b>	<b>100</b>

Table-3 shows that, Clinical diagnosis was confirmed in 19(54.3%) patients, smaller incision were used in 6(17.1%) patients, different diagnosis were found 6(17.1%) patients and additional diagnosis were found in 4(11.4%) patients.

**Table-4: Distribution of the patients by patients in whom open operation was avoided on the basis of arthroscopic finding**

	N=35	%
<b>Condition not amenable to operation.</b>	15	42.9
<b>Exploratory arthrotomy avoided</b>	12	34.3
<b>Procedure done through arthroscope</b>	8	22.9

Table-2 shows that, 15(42.9%) of the patient's condition were not amenable to operation, exploratory arthrotomy were avoided in 12(34.3%) patients and the procedure was done in 8(22.9%) patients through arthroscopy.

**Table-5: Distribution of the patients by modifications of treatment resulting from arthroscopy**

	N=35	%
<b>Future strategy planned</b>	17	48.6
<b>Joint not opened.</b>	9	25.7
<b>Different operation done</b>	9	25.7

Table-2 shows that, future strategy was planned in 17(48.6%) patients, joint of 9(25.7%) patients were not opened and different operation were done in 9 (25.7%) patients.

#### IV. DISCUSSION:

Knee arthroscopy may relieve painful symptoms of many problems that damage the cartilage surfaces and other soft tissues surrounding the joint. Common arthroscopic procedures for the knee include: Partial meniscectomy (removal of the meniscus), repair of a torn meniscus, or meniscus transplantation. This current study was carried out in the Department of Orthopaedic, TMSS Medical College and Hospital. The duration of the period from July 2021 to June 2022. A total of 35 patients were participate in the study. In this study the mean± SD age of the patients was 63.25±2.58 years. Minimum 3(8.6%) of the patients were within the age group of >70 years and 10(28.6%) of the patients were within the age group of 60-65 years. Here, 55% of the patients were female and 45% were male. In this study, 7(20%) of the patients had no difference in management, treatable condition was found in 11(31.4%) of the patients and 17 (48.6%) of the patient's procedure done through arthroscopy. In another study, forty-two cases (23 %) a surgically treatable condition was found, which was of particular value if the patient had originally been thought to be a hysteric or a malingerer. In thirteen other cases (7 %) a procedure was performed through the arthroscope, or a biopsy taken that would not have been done if arthrotomy had been necessary. In this study, Clinical diagnosis was confirmed in 19(54.3%) patients, smaller incision was used in 6(17.1%) patients, different diagnosis was found 6(17.1%) patients and additional diagnosis were found in 4(11.4%) patients. In a previous study, Exact knowledge of the pathology within the knee made a smaller incision possible in sixty-seven (26 %) of the patients. For example, a retained posterior horn fragment could be removed through a single posterior incision, or a loose body could be localized and removed through a stab incision.[16] In this study, 15(42.9%) of the patient's condition were not amenable to operation, exploratory arthrotomy were avoided in 12(34.3%) patients and the procedure was done in 8(22.9%) patients through arthroscopy. In another study, the diagnosis before operation was altered in forty patients (16 %) and an additional diagnosis was made in twenty (8 %). None of these changes, however, constituted an important change in management. Patients in whom open operation was avoided (196 arthroscopies). In another study 114 (58 %) of these patients the diagnosis before arthroscopy could not be confirmed or the condition seen at arthroscopy was judged not to be amenable to operation. The outcome in these patients was reviewed in 106 of the 114 patients: eight patients could not be traced. The mean interval between arthroscopies and review was two years and one month, with a range of six months to seven years. Fourteen of the 106 patients reviewed had subsequently undergone operation, but only six of these reported that they were improved. [16] In this study, future strategy was planned in 17(48.6%) patients, joint of 9(25.7%) patients were not opened and different operation were done in 9 (25.7%) patients.

#### V. CONCLUSION:

Knee arthroscopy has shown to be a dependable and extremely accurate diagnostic method with minimal morbidity and few consequences. The management of knee diseases may be significantly impacted by the information obtained. While arthroscopy was first thought to be most useful in the examination of knees

with challenging diagnostic issues, its application led to a significant change in patient care in 51% of cases that were thought to be typical orthopaedic cases.

Its main benefits were the ability to determine which patients did not need the suggested arthrotomy and the ability to design the surgical approach more precisely. While arthroscopy did not change the course of treatment for other individuals, it did make it possible to provide more assurance or a definitive prognosis than would have been otherwise feasible.

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