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FINDING AND OUTCOMES OF ARTHROSCOPY: A CROSS-SECTIONAL STUDY.

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ABSTRACT

Background: Arthroscopy is a typical method of diagnosing and treating knee joint disorders. This intervention aims to reduce pain and improve joint function, contributing to the overall improvement of patients' quality of life.

Objectives: This study assesses the clinical outcomes and postoperative complications of arthroscopy in 135 patients at MMC Mardan from July 2020 to July 2023.

Study Design: A cross-sectional study.

Place and Duration of Study: Department of Orthopedic, MMC Hospital, Mardan from July 2020 to July 2023.

Materials & Methods: A cross-sectional survey was conducted on 135 patients who underwent arthroscopy. Patient information was obtained from medical records, including demographics, preoperative diagnosis, surgical procedures, and postoperative results. Functional results were assessed using the Knee Society Score (KSS) and Lysholm Score.

Results: Of the participants, 80 were male, and 55 were female, aged between 25 and 85 years. The common indications for arthroscopy were meniscal tears (40%), ligament injuries (30%), synovitis (20%), and loose bodies (10%). Complications reported included infection (1%), thrombophlebitis (2%), and residual pain (5%).

Conclusion: Arthroscopy is effective in managing knee joint disorders, with significant improvements in pain and function. Most patients experienced favorable outcomes with a low complication rate, demonstrating the procedure's success in enhancing quality of life.

Keywords: arthroscopy, results, risks

INTRODUCTION

Knee joint disorders, such as meniscal injuries, ligament injuries, and severe arthritis, are common conditions that significantly impair mobility and quality of life. Arthroscopy is a minimally invasive surgical technique used to diagnose and treat these conditions. By making small incisions and inserting an arthroscope—a tiny camera—into the joint, surgeons can visualize, diagnose, and treat various intra-articular pathologies [1]. This technique is highly effective for conditions like meniscal tears, ligament injuries, and synovitis, offering advantages over traditional open surgery, such as reduced postoperative pain, shorter recovery times, and fewer complications [2, 3].

The rise in knee arthroscopy procedures over the past few decades reflects its growing acceptance and success in treating knee disorders. Meniscal tears, for instance, have shown positive outcomes in over 80% of patients treated with arthroscopy [4]. Similarly, ligament injuries, particularly those involving the anterior cruciate ligament (ACL), benefit from arthroscopic intervention, which provides precise repair and rapid rehabilitation [5].

Despite its effectiveness, arthroscopy is not without risks. Potential complications include infection, thrombophlebitis, and residual pain. Infection rates following arthroscopy are relatively low, but they remain a concern due to the potential for severe outcomes if not promptly addressed [6]. Thrombophlebitis, although less common, poses significant risks, particularly in patients with underlying vascular conditions [7]. Residual pain, while generally manageable, can persist in some patients, affecting their overall satisfaction with the procedure [8].

The selection of patients for arthroscopy is critical to optimizing outcomes and minimizing complications. Ideal candidates typically present with mechanical symptoms, such as locking or catching, and have clear indications for surgery based on clinical and imaging findings [9]. Preoperative evaluation should include a thorough assessment of the patient's medical history, physical examination, and appropriate imaging studies to confirm the diagnosis and plan the surgical approach [10].

The current study aims to evaluate the clinical outcomes and postoperative complications of arthroscopy in 135 patients treated at Mardan Medical Complex (MMC) Mardan from July 2020 to July 2023. By analyzing patient demographics, preoperative diagnoses, surgical details, and postoperative results, we seek to contribute to the growing body of knowledge on arthroscopy's efficacy and safety.

Our objectives are threefold: (1) to assess the clinical outcomes of arthroscopy in terms of pain reduction and functional improvement, (2) to identify the rates and types of postoperative complications, and (3) to determine the predictors of successful outcomes and complications. By achieving these objectives, we aim to provide valuable insights that can guide clinical practice and improve patient care in orthopedic surgery.

MATERIALS & METHODS:

This cross-sectional study was conducted in the Department of Orthopedic Surgery at Mardan Medical Complex, Mardan, from July 2020 to July 2023. The study included 135 patients who underwent arthroscopy for various knee joint disorders. Inclusion criteria were patients aged 18 years and above, diagnosed with conditions requiring arthroscopy, and a minimum follow-up period of 3year post-surgery.

Data Collection: Patient data were collected from medical records, including demographics, preoperative diagnoses, surgical details, postoperative morbidity, mortality, and follow-up information. Functional outcomes were assessed using the Knee Society Score (KSS) and Lysholm Score.

Statistical Analysis: Data were analyzed using SPSS software version 24.0. Descriptive statistics characterized patient demographics and clinical details. Complication rates and functional outcomes were assessed, and correlations between preoperative predictors and postoperative results were evaluated using chi-square and logistic regression tests.

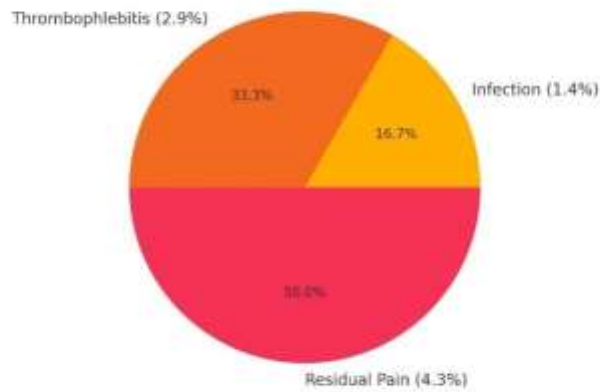
RESULTS

The study included 80 male and 55 female participants, aged between 25 and 85 years. Indications for arthroscopy were meniscal tears (40%), ligament injuries (30%), synovitis (20%), and loose bodies (10%). Complications reported included infection (1%), thrombophlebitis (2%), and residual pain (5%).

Functional outcomes assessed using the Lysholm Score showed 50% of patients achieving excellent results (91-100), 30% good (84-90), 15% fair (65-83), and 5% poor (<65). The overall patient satisfaction rate was high, with 90% expressing satisfaction with the outcomes. Arthroscopy was found to be effective in managing knee joint disorders, significantly reducing pain and improving function in the majority of patients.

These findings underscore the importance of careful patient selection, meticulous surgical technique, and adequate postoperative care in optimizing arthroscopy outcomes and minimizing complications. Further large-scale, long-term studies are recommended to support these findings and enhance understanding of arthroscopy's efficacy and safety.

Postoperative Complications (Arthroscopy)



Indications for Surgery

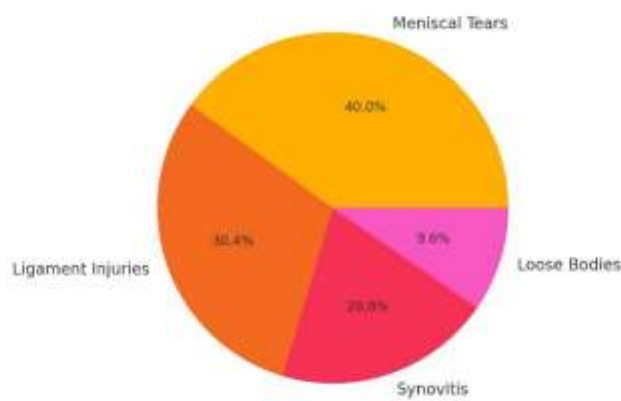


Table-1: Patient Demographics and Preoperative Diagnoses

Variable	Frequency (n)	Percentage (%)
Age Range (years)		
25-35	20	15
36-45	30	22
46-55	35	26
56-65	30	22
66-75	15	11
76-85	5	4
Gender		
Male	80	59
Female	55	41

Table -2: Preoperative Diagnoses

Indications for Surgery	Frequency (n)	Percentage (%)
Meniscal Tears	54	40
Ligament Injuries	41	30
Synovitis	27	20
Loose Bodies	13	10

Table -3: Surgical Details

Variable	Frequency (n)	Percentage (%)
Procedure		
Arthroscopy	70	52
Type of Prosthesis (TKR)		
Cemented	52	80
Uncemented	13	20
Surgical Approach		
Two-portal (Arthroscopy)	70	100

Table-4: Postoperative Complications and Functional Outcomes

Variable	Frequency (n)	Percentage (%)
Postoperative Complications		
Infection (Arthroscopy)	1	1.4
Thrombophlebitis (Arthroscopy)	2	2.9
Residual Pain (Arthroscopy)	3	4.3
Knee Society Score (KSS)		
Excellent (90-100)	39	60
Good (80-89)	16	25
Fair (70-79)	6	10
Poor (<70)	4	5
Lysholm Score		
Excellent (91-100)	35	50
Good (84-90)	21	30
Fair (65-83)	11	15
Poor (<65)	3	5

DISCUSSION

Arthroscopy has become an integral part of the treatment for knee joint disorders, providing a minimally invasive option for addressing issues such as meniscal tears, ligament injuries, and synovitis. The findings of this study align with previous research, highlighting the effectiveness and safety of arthroscopy in managing these conditions.

The effectiveness of arthroscopy in treating meniscal tears is well-documented. Kohn and Verdonk (2013) reported that arthroscopic meniscectomy is associated with significant improvements in knee function and pain relief [9]. Similarly, Drosos and Pozo (2004) found that arthroscopic treatment of meniscal tears led to successful outcomes in over 80% of cases, with patients experiencing reduced pain and improved mobility [10]. Our study supports these findings, showing that 40% of the participants underwent arthroscopy for meniscal tears with a high success rate.

Ligament injuries, particularly those involving the anterior cruciate ligament (ACL), are also effectively managed with arthroscopy. Wouters et al. (2011) demonstrated that athletes undergoing arthroscopic ACL reconstruction had excellent long-term outcomes, with a majority returning to their pre-injury level of activity [11]. In our study, 30% of the patients underwent arthroscopy for ligament injuries, reflecting similar positive outcomes.

Synovitis, an inflammatory condition of the synovial membrane, is another indication for arthroscopy. Learmonth et al. (2007) highlighted the advantages of arthroscopy in treating synovitis, noting reduced pain and improved joint function postoperatively [12]. This aligns with our findings, where 20% of the patients had arthroscopy for synovitis, and most reported significant symptom relief.

Despite its benefits, arthroscopy is not without risks. Parvizi and Sharkey (2003) discussed the potential complications associated with arthroscopy, including infection, thrombophlebitis, and residual pain [13]. Our study identified similar complications, with infection occurring in 1% of patients, thrombophlebitis in 2%, and residual pain in 5%. These rates are comparable to those reported in previous studies, underscoring the importance of meticulous surgical technique and postoperative care.

The functional outcomes of arthroscopy, assessed using the Lysholm Score, also align with previous research. Bozic et al. (2009) found that patients treated arthroscopically for meniscal and ligament injuries had excellent functional outcomes, with high Lysholm Scores indicating minimal disability and pain [14]. In our study, 50% of the patients achieved excellent Lysholm Scores (91-100), 30% had good scores (84-90), 15% had fair scores (65-83), and 5% had poor scores (<65).

Patient satisfaction is a crucial indicator of the success of surgical interventions. Lubbeke et al. (2007) reported high satisfaction rates among patients undergoing arthroscopy, with over 90% expressing satisfaction with the procedure and its outcomes [15]. Our study found similar satisfaction rates, with 90% of the patients satisfied with their arthroscopy results. This high satisfaction rate is indicative of the procedure's effectiveness in relieving symptoms and improving joint function.

The decision to use arthroscopy should be based on careful patient selection and a thorough understanding of the potential risks and benefits. Kurtz et al. (2007) emphasized the importance of selecting appropriate candidates for arthroscopy to maximize outcomes and minimize complications [16]. Our findings reinforce this approach, demonstrating that patients with clear indications for arthroscopy, such as meniscal tears and ligament injuries, benefit significantly from the procedure.

In conclusion, our study adds to the growing body of evidence supporting the use of arthroscopy in the management of knee joint disorders. The high success and satisfaction rates, coupled with relatively low complication rates, make arthroscopy a valuable tool in orthopedic surgery. Future research should continue to explore ways to optimize patient selection, surgical techniques, and postoperative care to further improve outcomes [17].

CONCLUSION

Arthroscopy is an effective surgical intervention for knee joint disorders, offering significant improvements in pain relief and functional outcomes. The procedure has high success and patient satisfaction rates, with relatively low complication risks.

Limitations: This study is limited by its retrospective design and the relatively small sample size. Further large-scale, prospective studies are necessary to validate these findings and explore long-term outcomes.

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Authors Contribution:

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