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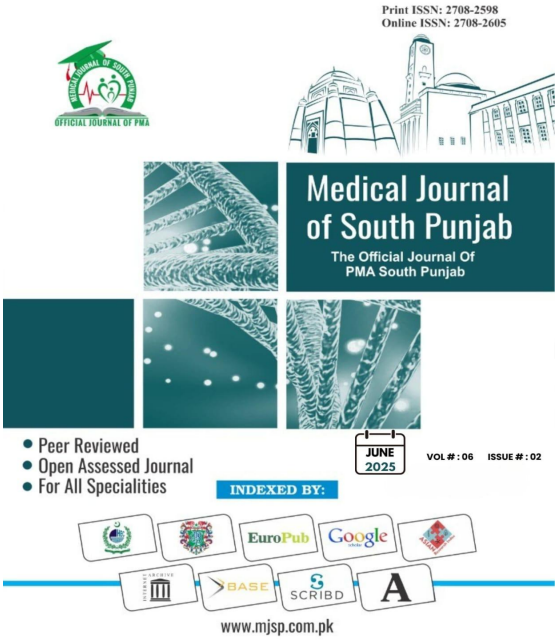

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Clinical outcomes of Arthroscopic Partial Mensisectomy for Chronic Mensical Tears in Early Post Operative Period

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ABSTRACT

Objective: To evaluate the clinical outcome of arthroscopic partial meniscectomy in patients with chronic meniscal tears in early postoperative period.

Methods: Study was retrospective that was carried out in Orthopaedic department of Sligo university hospital from January 2020 to March 2021. Study was started after ethical approval from hospital committee. Main variables of study were discharge status, knee score preoperative, at 6 weeks and 12 weeks duration. SPSS version 23 was used for data analysis.

Results: The mean preoperative knee score of the patients was 49.46±5.59. While, the mean knee score after 6 and 12 weeks of operation was gradually increase, (p=0.000). The mean knee score of male and female were almost equal, (p=0.173). Mean knee score at different age groups were also almost equal, (p=0.329). The mean knee score of lateral group was higher than medial group after 6 and 12 weeks of operation, (p<0.001).

Conclusion: Arthroscopic partial meniscectomy is an effective surgical procedure for chronic or irreparable meniscal tears. Procedure improves the knee function in very short period of time after surgery as proved by improvement in WOMET knee score.

Keywords: Arthroscopy, Partial Meniscectomy, Meniscal Tear, Western Ontario Meniscal Evaluation (WOMET)

1. INTRODUCTION

Application of arthroscopy is quiteadvanced and is being used in diagnostics and surgeries of knee pathology, especially African countries in Sub-Saharan region are leading in this regard[1]. Most of the patients having torn meniscus opt for arthroscopic surgery[2]. Meniscal tear is most occurring knee injury, with frequency of 61 out of every 100,000 people in UK annually. One of the Procedures for treating meniscal tears is Arthroscopic partial meniscectomy[3].

It is observed that arthroscopic partial meniscectomy intensifies load across the knee joints making them susceptible to osteoarthritis in future, therefore some researchers advised non-surgical management in specified cases[4]. So it is necessary to analyse the pros and cons of arthroscopic partial meniscectomy. While performing knee arthroscopy meniscal tear was found in the patient[5]. Patient's age, sex and weight have been recorded to predict the subsequent outcome after arthroscopic partial meniscectomy. Meniscal tears are quite frequent in knees with tear of the anterior cruciate ligament[6].

Arthroscopic partial meniscectomy is a better choice as compare to total meniscectomy because of preservation of non damaged part of meniscus[7]. This procedure also preserves the biomechanics of knee joint and helpful in early rehabilitation and mobility. Analysis of patients disease progress can be made through patient reported outcomes measurement (PROM) which is an effective tool for assessment of functional outcomes after arthroscopic meniscectomy[8]. Another useful method is Knee Injury and Osteoarthritis Outcome Score (KOOS) that can analyze patient's pain, sport and recreation, activities of daily living, quality of life and other signs and symptoms[9].

Another evaluation tool is Western Ontario Meniscal Evaluation Tool (WOMET) knee score which is also very useful in assessment of clinical outcomes after arthroscopic partial meniscectomy and patient's satisfaction after procedure[10,11] . Study was carried out to evaluate the clinical outcomes using WOMET score after arthroscopic partial meniscectomy for management of chronic meniscal tears at 6 weeks and weeks after surgical procedure.

2. METHODOLOGY

Study was retrospective designed and carried out in Orthopaedic department of Sligo university hospital, Ireland from January 2020 to March 2021. Study was started after obtaining ethical approval from hospital ethical board. Informed written consent was obtained from patients after detailed information about study purpose. Symptomatic patients of meniscal tears affecting single knee, meniscal tears diagnosed by MRI and diagnostic arthroscopy were included in study. Meniscal tears affecting both knees, coexisting femoral and tibial fracture and ligamentous injuries, lower limb deformity, active infection of knee were not included.

Retrospectively history of medical illness (diabetes mellitus, cardiac disease), mechanism of injury, intensity of pain and inspection about swelling was noted. Radiographs and magnetic resonance imaging of affected knee was reviewed. Whole operative procedure was done under standard anaesthesia and standard surgical procedure was performed. Follow up and WOMET score was measured at 6 weeks and 12 weeks after meniscectomy.

SPSS version 23 was used for calculation of mean and SD for numerical data like age and knee score. Frequency and percentages were calculated for categorical data like gender day of discharge. Test of significance were applied and p value ≤ 0.05 was taken as significance.

3. RESULTS

Thirty seven patients were included in this study, both genders. The mean age of the patients was 51.86±11.69 years. Majority of patients were between ages 36-50 years. Male female ratio was 1.18. Majority of the patients i.e. (75.7%) discharged in the same day (Table:I).

Table-1:Demographic variables of the patients

Variable	N (%)
Gender	
Male	20 (54.1%)
Female	17 (45.9%)
Age distribution	
25-35 years	8 (21.6%)
36-50 years	17 (45.9%)
>50 years	12 (32.4%)
Discharge status	
At same day	28 (75.7%)
At next day	9 (24.3%)

Table-2:Baseline and early functional outcome of the patients had arthroscopic partial meniscectomy

Knee score	Mean±S.D	Median±I.Q.R
Pre-operative	49.46±5.59	48.72±9.42
Post-operative at 6 weeks	75.85±6.97	76.61±9.55
Post-operativeat 12 weeks	92.42±10.33	93.23±10.20
P-value	0.000	

Table-III: Stratification of data

Variable	Mean±S.D	Test of sig.	P-value
Gender			
Male	90.27±7.69	t=-1.393	0.173
Female	94.95±12.55		
Age distribution			
25-35 years	95.55±6.67	F=1.147	0.329
36-50 years	92.05±11.71		
>50 years	88.52±11.45		

The mean knee score of lateral group was higher than medial group after 6 and 12 weeks of operation, (p<0.001) (Table. IV).

The mean preoperative knee score of the patients was 49.46±5.59. While, the mean knee score after 6 and 12 weeks of operation was gradually increase, (p=0.000) (Table. II). The mean knee score of male and female were almost equal, (p=0.173). Mean knee score at different age groups were also almost equal, (p=0.329) (Table. III).

Table:IV: Outcomes/Mean knee score

Knee score		Mean±S.D	P-value
Pre-operative	Medial	43.11±3.02	0.000
	Lateral	63.92±4.54	
Post-operative at 6 weeks	Medial	73.68±6.47	0.000
	Lateral	86.74±5.47	
Post-operative at 12 weeks	Medial	91.74±4.94	0.000
	Lateral	98.82±6.07	

4. DISCUSSION

Meniscal trauma is one of the most frequent knee injuries and arthroscopy is the most appropriate procedure of diagnosing and managing these injuries. The meniscus is known for its function in knee biomechanics and it is imperative to protect it from degenerative osteoarthritis, though not all meniscal injuries can be reconstructed[12].

In our study 54.1% of patients (20 patients) were males while 45.9% of patients (17 patients) were females. Prevalence of male patients is comparable to results by Maffulli et al[13] and Orlando Júnior et al[14] in their studies male to female ratios were 2.5:1 and 5.5:1 respectively. Majority of these cases are sports injuries, Pabian et al[15] reported 33.3% of such cases respectively.

While non-traumatic cases of meniscal tears were recorded by Englund et al[16] were 31% respectively. After appearance of symptoms the average time patients took to visit the medical professionals is 23 months, whiles hortest duration was 4 months and 60 months was the longest duration. There is a good possibility that this long delay before treatment is caused by the lack of understanding about the availability of treatment alternatives in the country by primary health professionals and patients[17].

Another study done by Pathania et al[18] observed 42% patients consulted after 2 years following the appearance of symptoms. Out of Total 31 cases of unilateral meniscal tears 61% were of right knee while 39% of left knee with a ratio of 1.6:1. 68.4% of patients had their right knee suffered from medial meniscus tears and 31.6% suffered from lateral meniscal tear in right knee. In left knee cases 66.6% of patients had tears in medial menisci and 33.4% of patients had tears in lateral menisci. Possible reason for high rate occurrence of medial meniscus problem is its less mobility than the lateral meniscus. Therefore, it has greater chances to hem in between condyles when joint strained unusually.

It was found contrasting from the observations made by Williams et al[19] whose findings were as follow, 10% meniscal tears were in white zone, 30% were in red-white zone and remaining 60% were in red zone. WOMET score parameters were used to measure the results with average score 0f 46.7 before surgery and after six weeks increasing trend was noted with average 75.6 and after twelve weeks the average score was 87.7. Which is statistically very significant $p<0.05$, validating patient comfort with the procedure and also demonstrate relieving of symptoms with duration of time.

Remarkable WOMET score improvement was recorded by Cao et al[20] after surgery at 3 and 9 months intervals. Additionally Pathania et al[18] observed adequate knee scores at 6 weeks and 9 months intervals. The link between age of our patients and the following surgery WOMET knee scores at 12 weeks were not statistically significant with a $p > 0.05$.

Furthermore this study did not obtain a statistically significant relation between knee score and the gender of a patient $p > 0.05$. Babalola et al[21] recorded significant improvement in WOMET scores at 7 months after surgery with substantial improvement in medial partial meniscectomy as opposite to partial lateral meniscectomy. However, these results were not statistically significant. Above results reinforced the fact that arthroscopic partial meniscectomy has a significant impact in the management of meniscal tears in the short term.

5. CONCLUSION

Arthroscopic partial meniscectomy is an ideal and most effective surgical procedure for chronic or irreparable meniscal tears. Procedure improves the knee function in very short period of time after surgery as proved by improvement in WOMET knee score.

6. REFERENCES

1. Pan H, Zhang P, Zhang Z, Yang Q. Arthroscopic partial meniscectomy combined with medical exercise therapy versus isolated medical exercise therapy for degenerative meniscal tear: A meta-analysis of randomized controlled trials. Int J Surg. 2020;79:222-232. doi: 10.1016/j.ijsu.2020.05.035.
2. Katz JN, Losina E. The cost-effectiveness of arthroscopic partial meniscectomy: comparing apples and oranges. Osteoarthritis Cartilage. 2018;26(2):152-153. doi: 10.1016/j.joca.2017.11.004.
3. Li J, Zhu W, Gao X, Li X. Comparison of Arthroscopic Partial Meniscectomy to Physical Therapy following Degenerative Meniscus Tears: A Systematic Review and Meta-analysis. Biomed Res Int. 2020;2020:1709415. doi: 10.1155/2020/1709415.
4. Okanu FO, Onuoha KM, Itakpe S. Evaluation of the Early Functional Outcome Following Arthroscopic Partial Meniscectomy for Meniscal Tears. Journal of Biosciences and

Medicines, 2020;8:32-42.
5. Furumatsu, T, Okazaki, Y, Okazaki, Y. Injury patterns of medial meniscus posterior root tears. Orthop Traumatol Surg Res 2019;105(1):107–111.
6. Cinque ME, DePhillipo NN, Moatshe G, Chahla J, Kennedy MI, Dornan GJ et al. Clinical Outcomes of Inside-Out Meniscal Repair According to Anatomic Zone of the Meniscal Tear. Orthop J Sports Med. 2019;7(7):2325967119860806.
7. Burki A, Bajwa M, Bajwa M, Pervaiz H, Amin S, Bukhari SA. Patient reported outcomes measurement after arthroscopic partial meniscectomy for chronic meniscal tears. PAFMJ. 2021];69(5):1129-3.
8. Jiang D, Luo X, Ao Y, Gong X, Wang Y, Wang H. Risk of total/subtotal meniscectomy for respective medial and lateral meniscus injury: correlation with tear type, duration of comp-laint, age, gender and ACL rupture in 6034 Asian patients.BMC Surg2017;17(1):127-35.
9. FribergerPajalic K, Turkiewicz A, Englund M. Update on the risks of complications after knee arthroscopy.BMC Muscu-loskeletDisord 2018;19(1):179-85.
10. Sihvonen R, Paavola M, Malmivaara A, Itälä A, Joukainen A, Nurmi H, et al. Arthroscopic partial meniscectomy versus placebo surgery for a degenerative meniscus tear: A 2-year follow-up of the randomised controlledtrial. Ann Rheum Dis 2018;77(1):188–95.
11. Giwa SO. ARTHROSCOPIC MENISECTOMY. J West Afr Coll Surg. 2017 Jan-Mar;7(1):x-xiii. PMID: 29951461; PMCID: PMC6018032.
12. Wang JY, Cheng CY, Chen AC, Chan YS. Arthroscopy-Assisted Corrective Osteotomy, Reduction, Internal Fixation and Strut Allograft Augmentation for Tibial Plateau Malunion or Nonunion. J Clin Med. 2020 Apr 1;9(4):973.
13. Maffulli N, Longo UG, Campi S, Denaro V. Meniscal tears. Open Access J Sports Med. 2010 Apr 26;1:45-54. doi: 10.2147/oajsm.s7753.
14. Orlando Júnior N, de Souza Leão MG, de Oliveira NH. Diagnosis of knee injuries: comparison of the physical examination and magnetic resonance imaging with the findings from arthroscopy. Rev Bras Ortop. 2015 Oct 19;50(6):712-9.
15. Pabian P, Hanney WJ. Functional rehabilitation after medial meniscus repair in a high school football quarterback: a case report. N Am J Sports Phys Ther. 2008;3(3):161-9.
16. Englund M, Guermazi A, Gale D, Hunter DJ, Aliabadi P, Clancy M, Felson DT. Incidental meniscal findings on knee MRI in middle-aged and elderly persons. N Engl J Med. 2008 Sep 11;359(11):1108-15.
17. Adekoya-Cole TO, Enweluzo GO, Akinmokun OI, Orakwe DE. Basic arthroscopy: a review paper. Nig Q J Hosp Med. 2011 Oct-Dec;21(4):303-5. PMID: 23175896.

18. Pathania VP, Kulshreshtha V, Arora NC. Arthroscopic evaluation and management of meniscal injuries of the knee. Med J Armed Forces India. 2001 Apr;57(2):99-103.

19. Williams RJ 3rd, Warner KK, Petrigliano FA, Potter HG, Hatch J, Cordasco FA. MRI evaluation of isolated arthroscopic partial meniscectomy patients at a minimum five-year follow-up. HSS J. 2007 Feb;3(1):35-43.

20. Cao H, Zhang Y, Qian W, Cheng XH, Ke Y, Guo XP. Short-term clinical outcomes of 42 cases of arthroscopic meniscectomy for discoid lateral meniscus tears. Exp Ther Med. 2012 Nov;4(5):807-810.

21. Babalola OR, Laiyemo AE, Itapke SE, Madubueze C, Shodipo O, Okanu F, Alatise K. Arthroscopic partial meniscectomy - short-term clinical outcome in an orthopaedic center in southwestern Nigeria. J West Afr Coll Surg. 2017;7(1):1-8.