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Clinical Presentation

Role of Physiotherapy in the Rehabilitation of Meniscal Injuries

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Abstract

Meniscal injuries are among the most common knee pathologies encountered in orthopedic and sports medicine practice. They can result from acute trauma or degenerative processes and often lead to pain, swelling, mechanical symptoms, and functional limitation. Physiotherapy plays a pivotal role in both conservative management and postoperative rehabilitation of meniscal injuries. This article reviews the anatomy and function of the meniscus, mechanisms of injury, clinical presentation, and emphasizes the role of physiotherapy in restoring knee function, reducing pain, and preventing long-term complications.

Keywords: meniscal injury; physiotherapy rehabilitation; knee injury; conservative management; postoperative rehabilitation

Introduction

The menisci are crescent-shaped fibrocartilaginous structures located between the femoral condyles and tibial plateau. They play a crucial role in load transmission, shock absorption, joint stability, and proprioception of the knee joint. Injury to the meniscus can significantly impair knee biomechanics and functional performance.

Meniscal injuries may be managed conservatively or surgically, depending on the type, severity, and patient characteristics. Physiotherapy is a cornerstone of treatment, essential for symptom control, functional recovery, and prevention of secondary joint degeneration.

Anatomy and Function of the Meniscus

The medial and lateral menisci differ in shape, mobility, and injury susceptibility. The medial meniscus is less mobile and more commonly injured. The menisci:

- Distribute axial loads across the knee joint
- Enhance joint congruency
- Provide shock absorption
- Contribute to joint lubrication and nutrition
- Aid proprioceptive feedback

Damage to the meniscus alters load distribution, increasing the risk of cartilage degeneration and osteoarthritis.

Mechanism and Types of Meniscal Injuries

Meniscal injuries may occur due to:

- Twisting movements on a flexed knee
- Sudden changes in direction during sports
- Degenerative changes in older individuals

Common types of tears include:

- Longitudinal
- Radial
- Horizontal
- Bucket-handle
- Complex tears

The management approach influences the rehabilitation strategy.

Clinical Presentation

Patients with meniscal injuries typically present with:

- Knee pain localized to the joint line
- Swelling or effusion
- Locking or catching sensation

- Restricted range of motion
- Difficulty with squatting, stair climbing, or pivoting activities

Physiotherapy assessment focuses on pain, swelling, range of motion, muscle strength, gait, and functional limitations.

Role of Physiotherapy in Conservative Management

Many meniscal injuries, particularly stable or degenerative tears, can be managed non-surgically. Physiotherapy aims to:

1. Pain and Inflammation Control

- Cryotherapy
- Electrotherapy modalities
- Activity modification

2. Restoration of Range of Motion

- Gentle passive and active knee mobilization
- Stretching exercises for hamstrings, quadriceps, and calf muscles

3. Muscle Strengthening

- Quadriceps strengthening (especially vastus medialis obliquus)
- Hamstring and gluteal strengthening
- Closed kinetic chain exercises to enhance joint stability

4. Proprioception and Neuromuscular Training

- Balance and coordination exercises
- Functional movement training

5. Functional Rehabilitation

- Gait training
- Return-to-activity progression
- Sport-specific drills where appropriate

Role of Physiotherapy in Postoperative Rehabilitation

Following meniscal repair or meniscectomy, physiotherapy is essential for optimal recovery.

Early Phase

- Pain and edema management
- Protected weight bearing as advised
- Gentle range-of-motion exercises

Intermediate Phase

- Progressive strengthening
- Restoration of full knee motion
- Proprioceptive and balance training

Advanced Phase

- Functional strengthening
- Agility and endurance training
- Gradual return to sports or occupational activities

Rehabilitation protocols are individualized based on the surgical procedure and patient response.

Prevention of Long-Term Complications

Physiotherapy helps reduce the risk of:

- Knee instability
- Recurrent injury
- Early onset osteoarthritis

Education on proper biomechanics, activity modification, and long-term exercise adherence is an integral component of rehabilitation.

Conclusion

Physiotherapy plays a vital role in the rehabilitation of meniscal injuries, whether managed conservatively or surgically. A structured and individualized rehabilitation program focusing on pain control, muscle strengthening, proprioception, and functional restoration is essential for optimal outcomes. Early intervention and adherence to physiotherapy protocols significantly improve knee function and quality of life while minimizing long-term complications.

Conflict of Interest

The authors declare no conflict of interest.

References

1. Beaufils, P., Becker, R., Kopf, S., Matthieu, O., & Pujol, N. (2017). The knee meniscus: Management of traumatic tears and degenerative lesions. *EFORT Open Reviews, 2*(5), 195–203.
2. Englund, M., Guermazi, A., & Lohmander, L. S. (2009). The role of the meniscus in knee osteoarthritis: A cause or consequence? *Radiologic Clinics of North America, 47*(4), 703–712.
3. Fox, A. J., Bedi, A., & Rodeo, S. A. (2012). The basic science of human knee menisci: Structure, composition, and function. *Sports Health, 4*(4), 340–351.
4. Herrlin, S. V., Wange, P. O., Lapidus, G., Hållander, M., Werner, S., & Weidenhielm, L. (2007). Is arthroscopic surgery beneficial in treating non-traumatic, degenerative medial meniscal tears? *Knee Surgery, Sports Traumatology, Arthroscopy, 15*(4), 393–401.
5. Logerstedt, D. S., Snyder-Mackler, L., Ritter, R. C., & Axe, M. J. (2010). Knee pain and mobility impairments: Meniscal and articular cartilage lesions. *Journal of Orthopaedic & Sports Physical Therapy, 40*(6), A1–A35.
6. Thorlund, J. B., Juhl, C. B., Roos, E. M., & Lohmander, L. S. (2015). Arthroscopic surgery for degenerative knee: Systematic review and meta-analysis of benefits and harms. *BMJ, 350*, h2747.