



Immediate effects of Mulligan mobilization with movement in weight bearing position in single sitting for Osteoarthritis knee: A Case Report

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Abstract

The most common joint disorder that causes disability is osteoarthritis (OA). People with knee osteoarthritis (OA) occasionally experience episodes of knee instability that affect their everyday tasks. Physical therapy for knee OA is currently aimed at reducing discomfort, increasing range of motion, and enhancing functional performance. In the present study our goal was to study immediate effects of Mulligan Mobilization in knee osteoarthritis patients. Mulligan mobilisation was performed on a 55-year-old woman in a weight-bearing role to minimise discomfort, increase mobility, and strength, and thus improve functional capacity.

Conclusion: Mulligan Mobilization showed significant progression in terms of pain, knee ROM, strength and functional movement.

Keywords: Mulligan mobilization, weight bearing position, OA Knee.

INTRODUCTION

Knee Osteoarthritis is found to be 1.18 per 1000 per year in men and 2.8 per 1000 per year in women. OA (commonly termed as wear and tear of the joints) generally affects hips and knees.¹ Pain, reduction in strength and mobility, therefore reduction in functional ability, are the main symptoms of OA.² People who have KOA and chronic pain experience mental changes including depression, anxiety, and fear.³

Joint mobilisation, one of the treatment techniques, has shown to be an incredible modality for reducing knee pain, as well as improving functional capability such as substantial improvement in range of motion (ROM) and strength in affected individuals.⁴

Some studies that used MWM in individuals with a diagnosis of KOA showed immediate results in reducing pain, improvement in functional aspects and increase in ROM.⁵ Present study is aimed to see the

effect of a newly designed antero - posterior rotational translatory glide in medial direction.

Case Description: This is a report presenting physiotherapy (PT) management to reduce pain, improve mobility, and restore functional capacity and Quality of life.

Patient History: A 55-year-old woman, complains of bilateral medial knee pain since 1 year, with right knee being more painful than the left knee. She expressed that with activity modification or rest, the aggravated knee pain would ease. Being a Homemaker, she continued to do household chores even with her infrequent knee pain. She then visited hospital where few investigations were done and she was diagnosed with grade II OA (right) according to Kellgren and Lawrence and she was referred to PT Department. During her first visit, she complaint: 1) Pain in both knees (right>left), 2) Limitation in Right knee

movement,3) Difficulty in performing daily activities - difficulty in squatting, was unable to kneel on knees for longer duration, and had difficulty to climb stairs. She said the pain to be 6/10 on the pain scale (VAS). Patient completed a self-report measure of physical function and disability, the Knee Outcome Survey–Activities of Daily Living Scale (ADLS). The patient's score at first physical therapy visit was 62 out of a highest possible score of 100.

Physical Examination:

She belonged to Overweight category. She came to PT department independently, putting less weight on right leg thus having antalgic gait. Palpation revealed tenderness along the medial tibiofemoral joint lines bilaterally, no signs of swelling was noted.

ROM and Strength examination revealed (Table 1) limitation in right knee flexion, and hamstring muscle strength was good.

Diagnosis was done on the basis of subjective and objective examination for OA knee.

Treatment procedure:

Treatment protocol was designed for first three clinic visits with 2–3 day interval between each consultation

Procedures for the intervention:

Session started with warmup exercises followed by some strengthening exercises with theraband. The glides were then delivered in a weight-bearing posture, with the patient putting her right leg on a low stool and lunging forward when flexion was the restricting movement. Anantero - posterior rotational translatory glide in medial direction was delivered until the painful movement began, and the force was sustained until the patient was returned to the starting position. When the patient performed the painful movement, the procedure consisted of three glides.

Outcome:

Outcome measures	Pretreatment	Posttreatment
1. VAS	6	2
2. Knee Outcome Survey–Activities of Daily	62/100	90/100

Living Scale (ADLS)		
3. ROM (Knee flexion)	0-120°	0-140°
4. Strength-Hamstring (MMT)	Good	Good

Table 1) Table showing pre and post treatment results.

Discussion:

The benefits of using antero - posterior rotational translatory glide in medial direction in knee osteoarthritis were illustrated in this case study. Improvements in outcome measures accomplished over the course of three therapy sessions demonstrated a major treatment impact in minimising pain, enhancing functional activities of daily life, and increasing knee range of motion.

Kellgren and Lawrence classification Grade 2, demonstrates possible narrowing of the joint space with definite osteophyte formation. This glide antero - posterior rotational translatory glide in medial direction reduced pain considerably. Biomechanical, neurophysiological, and non-specific mechanisms were used to categorise the pain-relieving effects of manual therapy techniques ⁶The correction of positional faults by the treatment glide may be the biomechanical mechanisms in Mulligan's technique. Mulligan's passive methods may have temporarily preserved the normal kinematics of osteoarthritic knee, resulting in immediate pain relief. The neurophysiological processes, which involve pain control at the spinal level, may also be responsible for the immediate effects by pain gate mechanisms⁷, at peripheral level mechanism could be the dispersal of inflammatory mediators⁸

Mulligan's techniques produced immediate impact in improving knee pain and restoring functional mobility in knee OA, according to MadhuraBhagat, Y.V. RaghavaNeelapala, and RanganathGangavelli, when compared to a sham intervention. The research offers tentative evidence for non-specific mechanisms of pain relief in addition to the lateral forces that cause the correction of positional faults.⁸

This research by Matheus G. Gomes, MSc, PT, Anaysa F. Primo, Linda L.J.R, et al found that after a course of MWM, ratings for pain relief (VNS and PPTs), physical function (WOMAC), and emotional aspects (BDI) improved in specific population with KOA, but with minimal follow-up.⁹

Another research by Aishwarya Pramod Benkar et al. on the Carryover Effect of Mulligan's Mobilization with Movement under Water Versus Land Based Mulligan's Mobilization with Movement on Functional Mobility of Knee found that both types of Mulligan's Mobilization with Movement were equally successful in reducing pain and improving physical functions. Underwater Mulligan's mobilisation with movement increased the functional mobility of the knee joint better.¹⁰ So, we can further use mulligan mobilization under water for better results.

Consent:

Informed consent was taken.

Conclusion:

This patient within 2-3 visits of Mulligan Mobilization with antero posterior rotational translatory glide has shown significant reduction in pain, improved mobility and strength and great improvement in gait pattern and thus patient returned to her daily routine without pain and discomfort.

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