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Physiotherapy Treatment In Osteoarthritis Of Knee: A Case Study

Yukta Telrandhe[1], Akshata Guhe[2,] Shiril Nagarkar[3], Shweta Panchbudhe[4], Kunal Saoji [5], Vasant Gawande [6]

1Physiotherapy, Datta Meghe College of Physiotherapy
2 Assistant Professor, Department of Community Physiotherapy, Datta Meghe College of Physiotherapy, Nagpur
3HOD & Professor, Department of Cardiovascular and Respiratory sciences, Datta Meghe College of Physiotherapy, Nagpur
4Assistant Professor, Department of Cardiovascular and Respiratory sciences, Datta Meghe College of Physiotherapy, Nagpur
5 Assistant Professor Dept. of Orthopedics Datta Meghe Medical College, (Datta Meghe Institute of Medical Sciences) Nagpur
6 Professor Dept. of Orthopedics Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences Sawangi (Meghe) Wardha
EMail: guhea@yahoo.com

ABSTRACT-

Osteoarthritis (OA) is a frequent condition among the elderly and one of the most common causes of disability. Knee OA is becoming more common as the general population's average age rises. Knee OA is caused by age, weight, and joint stress caused by repetitive activities, particularly squatting and kneeling. Knee OA is caused by a number of causes, including cytokines, leptin, and mechanical stresses. The attribution of pain to knee OA should be approached with caution in patients with knee discomfort. Because a significant part of knee OA patients are asymptomatic, and due to the low sensitivity of radiographic examination, identification of knee OA in a number of patients is not achievable. In this review, we'll look at the data we've gathered.

The most common treatment for adhesive capsulitis is conservative maintenance. Soft tissue mobilization techniques are used in conjunction with a home exercise regimen that includes active assisted exercise. In this case study, we focus on restorative and compensatory management, which includes reducing OPD visits and encouraging a home programmed.

KEY WORDS: OSTEOARTHRITIS**,** KNEE JOINT, FUNCTIONAL TRAINING

INTRODUCTION –

Osteoarthritis (OA) is one of the most common conditions that causes impairment, especially among the elderly. OA is the most common articular disease in the industrialized world, and it is a primary source of chronic disability, primarily due to knee and hip OA (1,2). The economic costs of OA are considerable, including treatment expenditures, costs for those who must adapt their lives and homes to the condition, and costs associated with decreased work productivity. (3,4)

Knee OA is a chronic disease that affects the entire joint, including the articular cartilage, meniscus, ligaments, and peri-articular muscle, and can be caused by a variety of pathophysiological causes. Millions of people are affected by this painful and crippling condition. (5) Age (33 percent of people over 75 have

symptomatic and radiographic knee OA), female sex, obesity, heredity, and significant joint injury are all risk factors. People who have OA have more comorbidities and are more sedentary than people who do not have OA. Reduced physical activity is associated with a 20% increase in age-adjusted mortality.

Bony enlargement in knee OA and pain elicited with internal hip rotation in hip OA are two physical examination findings that can help diagnose the condition. (6) The median age of KOA diagnosis is 55 years, and most patients with the condition live for roughly 30 years [7]. Because there is presently no cure for OA, treatments are focused on lowering pain and improving function. Systematic reviews (SR) are a valuable tool for synthesizing the efficacy of therapies for KOA, however most of these reviews do not take long-term hazards into account. (8) (9)

PATIENT INFORMATION –

60 years patient Retried from (CRPF) police. He is right dominance. weight is 81 kg,height is 6.4inch (BMI: 26.72(kg/m2)). He stays at Ground floor, Slap house. He Complains of Pain in both knee in the last 2 month and Pain while stair climbing up-stairs in the past 3 months.

HISTORY OF PRESENT ILLNESS: (HOPI)

Patient was alright before 3 months ago, he started experiencing pain and difficulty in bending both knee then he visited his family doctor where he was given medications for pain relief and then was referred to the ayurvedic hospital where he was given massage for 15-20 days. He didn't get relief therefore he was referred to physiotherapy, then he visited physiotherapy department.

CLINICAL FINDING-

Subjective

- Patient Profile: 60 Y/O male.
- Present Illness: Patient Presented to The Hospital with Reference from Orthopedic with Pain in both knees. On Examination he was a diagnosed case of osteoarthritis of knee with the help of a diagnostic special test and radiography of knee joint.
- Past Medical History: Hypertension From 1 Year
- Medications: Thiazide Diuretics, Thyroxin Sodium
- Social History: Retired from CRPF police Lives with his wife, And One Son who is earning.
- Patient Complaints: Complains of Pain and Difficulty in bending both the knee
- SOCIOECOMOMIC STATUS: Upper middle class according to kuppswami scale.

Observation-

POSTURE-

(Patient is in standing position)

- Endomorph body built

- Right shoulder is depressed.
- Knee joint are moved apart from line of gravity (BOWELING OF LEGS).
- Decreased in arch of foot in ankle joint (flat foot).
- GAIT PATTERN: waddling gait.

OUTCOME MEASURE

- Pain on VISUAL ANALOGUE SCALE
- SITE OF PAIN: medial side (inferior boarder of femur) of right knee joint .
- TYPE OF PAIN: Pricking
- ONSET: Gradual.
- Duration: Intermittent.
- NUMERICAL PAIN RATING SCALE:
- At Activity pain:6
- At rest: 3

- AGGRAVATING FACTOR: Walking for long distance, stair climbing, cross sitting on floor.
- RELIEVING FACTOR: Sleeping, sitting on chair.

PERSONAL HISTORY-

- DIET- VEGITARIAN
- APPETITE- ADEQUATE
- BOWEL – NOT DISTURBED
- BLADDER – INTACT
- SLEEP- DISDURBED DUE TO PAIN

TENDERNESS

- Grade 2 tenderness on medial side (inferior boarder of femur) of right knee joint.

- **RANGE OF MOTION**

KNEE	LEFT ACTIVE	LEFT PASSIVE	RIGHT ACTIVE	RIGHT PASSIVE	END FEEL
FLEXION	0-120°	0-125°	0-110°	0-120°	Soft tissue approximation
EXTENTION	120°-0	125- 0°	110°-0	120°-0	TISSUE STRETCH

RESISTED ISOMETRICS

WEAK AND PAINFULL FOR KNEE FLEXION AND EXTENSION

MANUAL MUSCLE TESTING -

MUSCLE	**KENDALL GRADE**
HIP FLEXOR	4+ IN AVAILABLE RANGE OF MOTION
HIP EXTENSOR	3+ IN AVAILABLE RANGE OF MOTION
HIP ABDUCTOR	3 +IN AVAILABLE RANGE OF MOTION
HIP ADDUCTOR	3 IN AVAILABLE RANGE OF MOTION
KNEE FLEXION	4+ IN COMPLETE RANGE OF MOTION
KNEE EXTENSION	3+ IN AVAILABLE RANGE OF MOTION

DIAGNOSTIC ASSESMENT

RADIOGRAPH-

LATERALVIEW OF KNEE JOINT- REDUCED JOINT SPACE IN BOTH KNEE JOINT

DIAGNOSTIC SPECIAL TEST- Anterior Drawers test (-ve), Clarke test positive B/L knee

Functional Diagnosis- 60 Years Old Male Patient Complains About Pain And Difficulty In Climbing Stairs Up And Down Which Is 6/10 On Vas And Difficulty In Bending Both Thye Knee.

ICF (INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY, AND HEALTH)[2]

STRUCTURE AND SUNCTIONAL IMPAIRMENT	**ACTIVITY LIMITATION**	**PARTICIPATION RESTRICTIONS**
PAIN AND TENDERNESS	DIFFICULTY IN BENDING BOTH THE KNEES	LESS INVOLVEMENT IN HOUSEHOLD ACTIVITIES
JOINT SPACE REDUCED	DIFFICULTY IN DRESSING	LESS TIME FOR RECREATIONAL ACTIVITIES
BONE SPURS	DIFFICULTY IN DRIVING	NO ABLE TO ATTEND SOCIAL GATHERING
CAPSULAR THICKNEING	DIFFICULTY IN LONG STANDING	
BOWLING OF LEGS (GENU VARUM)	DIFFICULTY IN WALKING	
REDUCED RANGE OF MOTION	DIFFICULTY IN CLIMBING THE STAIRS	
RIGHT SHOULDER DEPRESSED		

FACILITATOR CONTEXUAL FACTOR	**BARRIER CONTEXUAL FACTOR**
COOPERATIVNESS AND ALERTNESS	AGE OF THE PATIENT
FAMILY SUPPORT	DEGENRATIVE CHANGES
KNOWLEDGE ABOUT THE CONDITION	COMORBITIES INCLUDING HYPERTENSION
NO ADDICTIONS	NO ADDEQUATE TRASPORT FACILITY FROM HOME TO CBR CENTER

THERAPEUTIC INTERVENTION-

PATIENT OBJECTIVES:

1) PATIENT EDUCATION

2) Relieve discomfort;

3) Increase range of motion;

4) Enhance mobility

5) IMPROVE STRENGTH

6) RESTORATION MAINTENANCE

7) Stay away from complications.

INTERVENTIONS –

PATIENT EDUCATION-

- AVOIDING LOND STANDING ACTIVITIES
- PROVIDING INFORMATION ABOUT THE HEALING STAGES
- MAINTAINING PAINFREE MOBILITY
- ACTIVITY MODIFICATION
- GIVING REST TO THE JOINT
- PROPER POSTURE MAINTENANCE

RESTORATIVE MANAGEMENT-

- **PAIN MANAGEMENT –**

(a) Apply a hot pack/moist pack for 20 minutes three times a day, before and after exercise.
(b) Gentle oscillation approach with occasional passive / active assistance in a pain-free range.
c) Mobilizations of grade 1 and 2 at the knee joint

- **SOFT TISSUE MOBILITY MAINTENANCE -**

1. Passive range of motion in all directions with pain reduction can be progressed to active aided.

2. Sliding a ball or a napkin on a table in the appropriate directions is one of the activities. 2-3 times each day if pain isn't too bad

3. Glides and joint distraction (grade 1 and 2)

4. Active workouts for the knee joint, with free weights added later

- **PROGRESSION WITH INCREASE JOINT AND SOFT TISSUE MOBILITY**

1. Technique for passive joint mobilization with grade 3 and 4 patients
2. Self-stretching to increase the restricted range of motion
3. 10 times modified joint tracking and functional mobility

- **STRENGTHENING OF KNEE STABILIZERS**

-5 second holds in all planes, 1 set of 10, isometric in all planes

-Free weights and TheraBand were added afterwards.

- **PROGRAM FOR EXERCISE AT HOME**

1. Active, pain-free mobility with assistance

2. Side-lying abduction with the aid of a cushion

3. Static quadriceps and hamstrings

4. Raise your leg straight and stretch your calf muscles

5. Strengthening exercises for the VMO

6. Heel slides help to strengthen the gluteus maximus.

7. Standing on one leg with dynamic quadriceps (alternate leg)

8. Heel lifts and semi-squatting

FOLLOW-UP AND OUTCOMES-

Mr. G. Das had a 2-month session with a strict home exercise protocol of active assisted exercise of 2 sets with 10 repetitions on a daily basis for 8 weeks with the exercises presented to be effective in decreasing pain with 2 on the patient's vas and restoring range of motion of flexion of right side is 128, flexion of left knee is 130 when measured with goniometer.

DISCUSSION-

Osteoarthritis is a complicated and multifaceted joint disease that primarily affects the knees. Multiple explanations have been offered, but no clear a etiology or understanding of the disease's natural course has emerged. Based on those theories, a variety of treatments have been devised and evaluated, some of which have proven to be more effective than others, but all of them aim to reduce pain, improve function, and delay the need for surgical joint replacement. All current guidelines agree that water or land-based exercise should be tried first for symptom control, then other therapies such as topical or oral drugs should be tried later. If these are ineffective, a patient can receive IA treatments, which appear to have some advantage over oral medicines, but with some placebo effect contribution. (10) Among these medicines, IA CS has been one of the most explored, although the current results may not be clear, since efforts to understand the specific mechanism of action, analgesic efficacy, indication, and safety profile are still continuing. Recent research has been unable to provide a solid and clear response on how patients can use IR CS. (11) According to some writers, joint effusion, synovial membrane thickness, a high BMI, psychological problems, and knee discomfort could all be variables. (12)

In order to reduce pain, improve range of motion (rom), and function in patients, a therapeutic home exercise programmed and mobilization are strongly advised. Electrotherapy can aid with pain alleviation in the short term (13)

In this case report, the patient has been diagnosed with osteoarthritis of the knee. The mainstay of rehabilitation was peripheral joint mobility and a home exercise programmed. The patient came to the community rehabilitation clinic with bilateral knee pain and limited range of motion. Because the patient was unable to visit the opd on a daily basis after the 10-day continuous programmed, due to a lack of transportation, the patient was advised to do home exercises for the next three weeks with two sets each day.

CONCLUSSION-

Compensation management and a three-week at-home programmed. The session programmed consisted of two sets of ten repetitions every day. Because of the decrease in discomfort, increased range of motion, and efficiency in conducting work with home exercise and compensatory management, the patient was satisfied with the treatment.

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