



EFFECT OF EXERCISES IN GRADE 3 B/L OA KNEE WITH GENU VARUM --SINGLE CASE STUDY

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ABSTRACT

Exercises like isometrics exercises, stretching exercises, strengthening exercises, range of motion, gait training showed improvement in Bilateral osteo arthritis patient who posted for surgery. Patients 'life style improved and it was demonstrated by outcome measures like WOMAC score, NRS pain scale, TUG.

INTRODUCTION

There are so many treatment methods are recommended for OA knee. Medical, surgical, physiotherapy and life style modifications are in practise globally. In old age so many could not get fitness for surgery and they depend on any alternative like medicine etc. But this pain medicine leads to other systemic complication like Gastritis etc. if the patients became immobile due to fear of pain, this also results in inactivity and obesity. This results in other old age complications.

OBJECTIVE

To know the efficacy of several type of exercise for 6 weeks in patient with bilateral knee with genu varum.

BACKGROUND OF STUDY

The subject of this case study was 76 years female, known case of hypertensive under medication, under control and for 5 years. She was capable to do domestic work.

h/o

Subject was known case of OA knee bilaterally, for 10 years. And recommended for B/L TKR. She refused and willing to undergo trial physiotherapy.

O/E

She had pain during walking, stair activities in bilateral knee joint Rt>Lt. She found difficulty in turning during sleep, difficulty in sit to stand like ADL. Bilaterally she had x-ray evidence of grade 3 with b/l genu varum. She was treated with IFT for pain relief, and exercises for b/l lower limb weekly 6 days 30 min for each side, for 6 weeks

O/E

Subject was Short stature, having BMI 27. Subject was able to walk inside house with holding wall and with knee braces. She was walking with waddling gait due to

pain during stance. Patient was having varicose veins in anterior thigh and posterior calf bilat. her findings were;

- Range of knee flexion decreased in both to 110 deg. But right knee had 15 deg quadriceps lag.
- Muscle power was decreased in right extensors to 3+ and both knee flexors-3+, both hip adductors 3+, abductors-3+, both hip flexors 3+, both hip extensors 3+.
- Both feet medial arch collapsed and marked weakness around ankle and foot to 4- respectively
- Q angle both knees were increased and right -25, left knee-21.
- NRS score right side 7, left side 5.
- 7 minutes walking test unable to perform
- Single leg standing test positive
- WOMAC score was 68 in right knee and in left knee 51
- Crepitus heard in bil knee movement.
- Stair activity and floor level activities were painful.

Interventions

- For pain relief pain killers were given for 5 days. IFT for both knee, 15 minutes once daily for 2 wks given.
- Isometric exercises to Gluteus muscles, hip Adductors, Quadriceps, Hamstrings were given.
- Range of movement Exercises to both hip, knee, ankle joint.
- Resistance exercises with minimal weights and progression made by the tolerance.
- Stretching exercises to Hamstrings, Adductors, IT band, TA given
- Core exercises, intrinsic foot exercises.
- Gait training given with knee brace. With medial insole in footwear.
- Progression made by resisted exercises with weights within pain tolerance, repetition of exercises, increasing the hold time

- From 3rd week hot water fermentation given;

Test	Right Knee		Left knee	
	Pre	Post	Pre	Post
NRS	7	4	5	3
WOMAC	68	46	51	34
Single leg stance	-	5 sec	6 sec	15 sec
MMT	3	4-	3+	4
Inter condylar distance	Pre test distance 22cm Post test distance 22cm			

Gait improved able to walk continuously for 20 minutes without support. With walking aid able to manage more than 40 minutes

Able to do stair with step by step

RESULTS

After the intervention there was marked increase in muscle performance and WOMAC score. Knee pain was reduced after the interventions. Activities were improved and functional independency was satisfactorily achieved.

DISCUSSION

1. Kwangyun Choi et al, in his article in 2013 stated that genu varum corrected by stretching exercises, range of motion exercises. In this study, due to exercises, insole and knee brace, the compression force was reduced and further worsening was prevented. This was proved by the pain relief in one compartment and progression of ADL.
2. Sora Par et al, in 2016 stated that TheraBand exercises, stretching exercises reduce genu varum deformity and reduce the distance between knee joints. In this study further worsening was prevented.
3. Kim L. Bennell et al in RCT, 2011 discussed about the strengthening exercises to quadriceps and neuro muscular exercises was effective in OA knee. In present study the resisted exercises for quadriceps reduced pain and improved functional ability.
4. Sora Kawabata et al in 2020, in a systematic review discussed about the effects of various exercises and stated no additional benefits. In this study, subject showed improvement in pain and muscle function.

CONCLUSION

Surgical treatment is cost effective and patient could not afford and in old age, associated illness also preventing the surgical treatment. A set of exercises may be beneficial for old age patient to get rid of pain. Comparatively exercises said to be cheaper than other treatment.

REFERENCES

1. Sora Kawabata et al, Kenji Murata, Moeka Sonoo, Effects of exercise therapy on joint instability in patients with osteoarthritis of the knee: A systematic review; *Osteoarthritis and Cartilage Open*, December 2020; 2(4): 100114.

2. Kevin R. Vincent, MD, PhD Resistance Exercise for Knee Osteoarthritis *PM R*, May, 2012; 4(50): S45–S52. doi: 10.1016/j.pmrj.2012.01.019.
3. Jun Iwamoto, Yoshihiro Sato, Tsuyoshi Takeda, and Hideo Matsumoto, Effectiveness of exercise for osteoarthritis of the knee: A review of the literature; *World J Orthop*, May 18, 2011; 2(5): 37–42. Published online 2011 May 18. doi: 10.5312/wjo.v2.i5.37.
4. Bennell KL, Hinman RS. A review of the clinical evidence for exercise in osteoarthritis of the hip and knee. *J Sci Med Sport*. 2011;14:4–9. [PubMed] [Google Scholar]
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