EFFECTIVENESS OF MAITLAND MOBILIZATION TECHNIQUE (TALOCRURAL GLIDES) AND KINESIO TAPING ON POSTERIOR ANKLE IMPINGEMENT SYNDROME IN DANCERS

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ABSTRACT:
OBJECTIVE:

- *To find out the effectiveness of Maitland glide technique on posterior ankle impingement syndrome in dancers.*
- *To find out the effectiveness of kinesio taping on posterior ankle impingement syndrome in dancers.*

MEASURES: *Numerical pain rating scale Single limb balance test used for pre-test and post-test. Paired t-test will be used to compare the pre and post test values.*
RESULT: *From the pre and post test values it was proven that the kinesio taping and maitland glide technique(talocrural glides) have significant effect on posterior ankle impingement syndrome.*
CONCLUSION: *From the result, it is concluded that Maitland mobilization technique (talocrural glides) and Kinesio taping is effective for posterior ankle impingement syndrome.*

Key Words: *Posterior ankle impingement syndrome (PAIS)*

INTRODUCTION:

Posterior ankle impingement syndrome (PAIS) refers to a mechanical conflict at the back side of the ankle. It is a spectrum of clinical disorders characterized by posterior ankle pain during plantar flexion [1] in certain sports such as football ,ballet, acro-gymnastics and high jumping where hyper plantar flexion of the ankle takes place .PAIS has become more commonly recognized, particularly in athletes because of increased awareness [2-4] and more advanced imaging. Conservative treatment may be indicated in the early stage of PAIS[16].

Posterior ankle impingement is a common cause of chronic ankle pain[10] may be caused by bony or soft tissue impingement, specifically flexor hallucis longus irritation, invertion trauma/ sprain, forced plantar flexion causing anterior sheering of tibia, hypertrophy of os trigonum impacting posterior tibia . This is also known as os trigonum syndrome and posterior tibiotalar compression syndrome [11]. The os trigonum is formed by the congenital non union of the lateral posterior talar process to the body of the talus.The flexor hallucis longus runs between the medial and lateral posterior talar processes.Impingementt ot the os trigonum on the posterior distal tibia may occur with extreme plantar flexion of the ankle as in ballet or soccer.developes when the articular capsule is pinched between the tibia and the os trigonum,leading to soft tissue inflammation,thickening, and increased impingement like symptom(16).The os trigonum is the most common cause of symptomatic PAI . Symptoms of PAIS are thought to result from two main mechanisms impaction of osseous structures against each other, where the posterior talar prominence may be compressed between the posterior tibia and posterior calcaneal tuberosity, as well as compression of soft tissue structures between two opposing bony structures. Variations to the posterolateral talus include an unusually long lateral tubercle of the posterior talar process, and failure of fusion of a secondary ossification center found posterior to the lateral tubercle resulting in an os trigonum. As a result of an injury, inflammation and tissue damage may occur at the ankle which may restrict range of motion(plantar flexion)[16] and reduce strength, stability, flexibility, gait and function. If not corrected, this limited range of motion will disturb normal joint arthrokinematics and could affect performance.

The Maitland physical therapy approach is safe and gentle way to alleviate pain[21], reduce inflammation, restore movement and maximize function. Ankle mobilization techniques used are posterior-

anterior (PA) on talus, anterior –posterior (AP) on talus, distraction of subtalar joint and talocrural distraction[18].

The ankle kinesio taping techniques are designed to support and reduce stress on structures located at the back of ankle. The purpose of taping is to restrict undesired motion.

MATERIAL AND METHODS:

MATERIAL:

- Kinesio tape
- Treatment couch

PROCEDURE:

An individual with PAIS was selected based on inclusion and exclusion criteria. Detailed procedure was explained in patient's words and informed consent obtained. The patient assessed for posterior impingement by impingement test in which the patient was made to lie prone with flexed knee of the affected limb(right side), forced plantar flexion was done by holding on the posterior aspect of the ankle. The pain reproduced on forced plantar flexion. Subject with positive impingement sign proceeded with the treatment protocol (Maitland mobilization techniques, kinesio taping)

MAITLAND MOBILIZATION TECHNIQUE

- **Anterioposterior talocrural glide** – To increase plantar flexion
- **Posteroanterior talocrural glide** – To increase dorsiflexion
- **Talocrural distraction** – To increase the joint play for ankle joint

KINESIO TAPING

Folded the kinesio tape to 2 " ,cut two small triangles at the folded end ,unfolded the tape (diamond cutouts),placed 2nd and 3rd toes in the cutouts ,then pulled rest of the tape to the back of the heel with 80% stretch(decrease plantar flexion). Applied another piece of tape on to lateral side of the foot and stretched the tape across the arch pulled it up diagonally to the back of the foot. A piece of tape right at the talocalcaneal junction .

Instrumentation: The proposed work was carried out with **SINGLE LIMB BALANCE TEST(SLBT) and NUMERIC PAIN RATING SCALE (NPRS).**

Table: 1 Pre test and post test value

	TEST	SCORE
NPRS	Pre test	8
	Post test I	6
	Post test II	3

GRAPH: 1 Graph showing pre and post test value

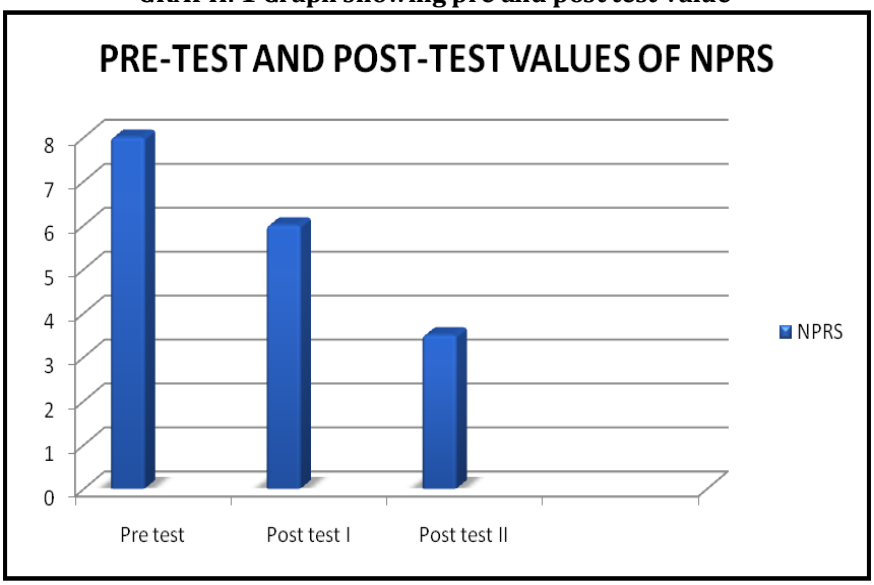
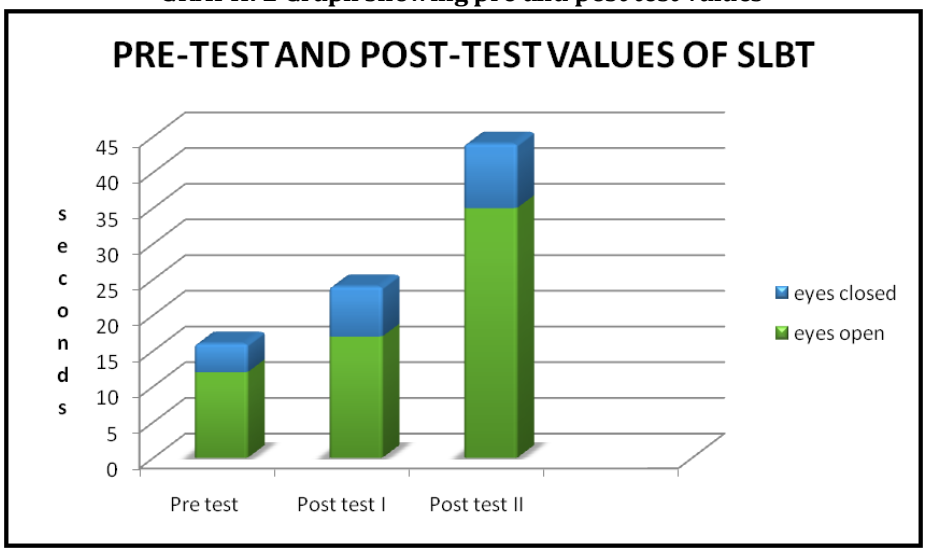


Table: 2 Pre test and post test values of group B

	TEST		SCORE
SINGLE LIMB BALANCE TEST(seconds)	Pre test	EYES OPEN	12
		EYES CLOSED	4
	Post test I	EYES OPEN	17
		EYES CLOSED	7
	Post test II	EYES OPEN	35
		EYES CLOSED	9

GRAPH: 2 Graph showing pre and post test values



RESULT:

From the pre and post test values it was proven that the kinesio taping and maitland glide techniques have significant effect on posterior ankle impingement syndrome.

The pre test value of NPRS (8) was reduced to NPRS (6) on post test taken after two sessions of intervention by kinesio taping and maitland mobilization techniques, which further reduced to NPRS (3) on post test taken at the end of the third week.

The pre test value of Single Limb Stance Test (SLST) with eyes open was (12), and with eyes closed was (4) seconds, the post test I value of (SLST) with eyes open had increased to (17 secs) and with eyes closed increased to (7 secs). The post test II value taken at the end of third week (SLST) with eyes open increased to (35 secs) and with eyes closed increased to (9 secs).

CONCLUSION:

From the result, it is concluded that Maitland mobilization technique(talo crural glides) and Kinesio taping is effective for posterior ankle impingement syndrome. Pain significantly reduced, the ankle stability has been greatly improved and the range of motion at ankle joint improved.

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CONFLICT OF INTEREST:

The authors declare no conflict of interest.

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