

# Tarsal Twist Manipulation in Foot pain- A single hand case report

<sup>1</sup>Pooja Saikia, <sup>2</sup>Faiznur Ahmed

<sup>1</sup>Assistant Professor and Research Scholar <sup>2</sup>Assistant Professor Physiotherapy Department  
University of Science and Technology, Meghalaya, India

## ABSTRACT--

**Background-** Ankle joint and foot pain now a day's comprises of around 70 percent injuries. Ankle sprain, planter fasciitis, calcaneal spur comprises of the majority of cases now a days.<sup>2</sup> A high body manipulation low amplitude thrust manipulation is a good evidence based treatment for majority of upper limb conditions.<sup>2, 4</sup> However in case of lower limb foot conditions, the research is very less. However a recent few papers shows that Tarsal Twist manipulation can be a significant help in different foot conditions.<sup>1</sup>

The purpose of this case study was to see if tarsal twist could really help in improving foot conditions pain.

**Case study-** A 33 year old housewife was suffering from planter fasciitis and was undergoing physiotherapy.<sup>3,5</sup> The patient was having planter fascia pain and decreased range of motion. The pain was more during sudden standing and walking and would get better on walking though not completely subsided.<sup>3,5,6</sup> The rehabilitation programme consists of the standard protocol of R.I.C.E, stretching, intrinsic muscle strengthening with a introduction of Tarsal twist manipulation<sup>5,6</sup>

**Outcome measures-** The patient showed much improvement pre and post test in the visual analog scale and foot function index scale. Outcome emasures showed good improvement post treatment.<sup>3,5,6</sup>

**Discussion-** A meaningful change in outcome measure and other limitations suggested that tarsal twist manipulation was significant in improving planter fasciitis.

**Key words-** Planter fasciitis, Tarsal Twist Manipulation, VAS, FFI

## INTRODUCTION

**Planter fasciitis** is result of degeneration. The tear usually occurs at the level of medial calcaneal tuberoses of heel and perifascial structures.<sup>3</sup> According to reseathier it is seen that 1 in 10 people will get planter fasciitis in their lifetime. Planter fasciitis is the most common cause of heel pain.<sup>3,5</sup> The planter fascia or deep fascia has a direct fibrocartilagenous attachment on the calcaneum and the central band is connected along medial and lateral band.<sup>5,6</sup>It diverges distally at mid tarsal level into five separate strands which are attached at the forefoot onto planter skin. The most common symptoms of planter fasciitis are pain across the sole predominantly in the heel region .Heel pain is more in the morning and after long periods of non weight bearing.<sup>3,5,6</sup>Patients also complain of dorsiflexion Complications of planter fasciitis can cause back and knee problems in future if left untreated. Sometimes it can even cause scar tissue formation.<sup>2</sup>

A high velocity low amplitude thrust joint manipulation is an intervention that has growing body evidence for management of neck and back pain<sup>1</sup>. However a new concept Tarsal Twist Manipulation has been shown to improve certain foot pain but its research is or case reports are relatively low The tarsal twist manipulation according to research can be performed in acute, subacute and chronic conditions.

Tarsal Twist Manipulation-

The patient is positioned supine with the affected lower extremity related in hip flexion –abduction- external rotation and knee flexion so that the lateral foot is resting on the plinth. To add more fulcrum, a towel roll under cuboid bone is an option.<sup>1</sup>

The clinician stands at the base of plinth, facing patients foot . The clinician will place the aspect thinner eminence of one hand on medial aspect of patient's calcareous. The clinician will place the first web space of other hand on medial proximal first metatarsal then mould their fingers around dorsum of foot and thumb around planter aspect of foot.<sup>1</sup>

The clinician then manufactures simultaneously everting calcaneus while inverting and abducting forefoot. Once barrier is achieved, the clinician will apply a high velocity, low amplitude thrust with direct line of drive from clinician sternum through both contact points on forefoot into abduction and calcaneus into eversion.<sup>1,4</sup>

### **Case presentation-**

A 33 year old housewife reported pain over the sole predominantly in heel since last 4 months before treatment. The pain was most noticeable in the morning and was more during sudden walking like getting up from the bed or desk. The pain significantly reduced after few minutes of walking. The patient complained of performing day to day daily living activities.

### **Examination-**

On examination, it was found that There was grade 3 tenderness on the planter aspect of heel Poor flexibility on calf (gastrocnemius soleus) Reduced dorsiflexion was seen. However other range of movements appeared fine. There was no swelling or redness seen.

### **Outcome measures-**

Measurement of pain was taken in Visual Analogue Scale compared to the healthy foot pre treatment. The scoring in The visual Analogue scale showed around 7 which was severe. Another outcome measure Foot Function Index was taken. A score of 8 was seen in foot function index.

### **Therapeutic interventions-**<sup>5,6</sup>

**Stretching-** Passive calf stretching was given, Active calf stretching was thought to the patient in the form of leaning against the wall. The knees are both bend towards the heel until a mild pull in back of legs Planter fascia stretch was thought to roll over a frozen ball.

**Strengthening** like towel curls, towel pick up, calf raises were taught.

**Ultrasound-** 1 MHz, mode pulsed was given with intensity of 0.2-0.8 watt/cm<sup>2</sup>

**Cryotherapy** was administered for 15 minutes twice a day.

An additional tarsal twist manipulation was included.

There was a treatment of four weeks. The patient symptoms drastically improved after 4 weeks.

### **Discussion-**

Following a 4 week treatment, The patients symptoms improved significantly. The outcome measures showed a scoring of 3 in Visual Analogue Scale and a score of 2 in Foot Function Index. The patient daily activities were significantly better than before with full range of dorsiflexion.

### **Conclusion-**

Hence from this case study, we can conclude that tarsal twist manipulation can be a good way of improving planter fasciitis patients with traditional conservative therapy in a supportive way.





### References-

- 1) Katherine C. Kimbrough, SPT et al. Unique Practice Technique: Introducing the Tarsal Twist Manipulation Int J Physiotherapy. Vol 8(3), 193-197, September (2021)
- 2) Martin RL, Davenport TE, Reischl SF, et al. Heel pain – plantar fasciitis: Revision 2014. J Orthop Sports Phys Ther. 2014; 44(11):A1-A23.
- 3) Mohammad Ali Tarran Plantar fasciitis National Library of Medicine. 2012 Aug; 17(8): 799–804
- 4) Evans DW, Lucas N. What is ‘manipulation? A reappraisal. Man Ther. 2010;15:286e291
- 5) League AC. Current concepts review: plantar fasciitis. Foot Ankle Int 2008;29:358-66
- 6) Radford JA, Landorf KB, Buchbinder R, Cook C. Effectiveness of calf muscle stretching for the short-term treatment of plantar heel pain: a randomised trial. BMC Musculoskeletal Disord 19: 8: 36, 2007.
- 7) Cole C, Seto C, Gazewood J. Plantar fasciitis: evidence-based review of diagnosis and therapy. Am Fam Physician. 2005;72:2237–42
- 8) Digiovanni BF, Nawoczinski DA, Malay DP, Graci PA, Williams TT, Wilding GE, Baumhauer JF. Plantar fascia-specific stretching exercise improves outcomes in patients with chronic plantar fasciitis. A prospective clinical trial with two-year followup. J Bone Joint Surg 88A:1775 – 81, 2006.
- 9) Riddle DL, Pulisic M, Pidcoe P, Johnson RE. Risk factors for Plantar fasciitis: a matched case-control study. J Bone Joint Surg Am. 2003 May;85-A(5):872-7. Erratum in: J Bone Joint Surg 85A (7):1338, 2003

IJRTI