

Physiotherapy Management for the patient with chronic planter fasciitis and / or Heel pain with faulty biomechanics: A systematic progression of physiotherapy intervention applied to a selected case.

Md. Feroz Kabir¹, Sharmila Jahan², Sonjit Kumar Chakrovorty³

Abstract

Background: Chronic heel pain and planter fasciitis is one of the common disorder attending at musculo-skeletal physiotherapy department which is not only believable but also establish fact as pursued our clinical experiences. This is because the obesity, shoes quality & biomechanics and entire bodily fitness are disquieting which leads different kinds of foot pain and injury. This case was Mr. Rahim (False name) who has been suffering from severe pain at his entire heel extends to half of the foot especially medial portion with hard small swelling at his right foot. *Methodology:* This was a comprehensive case study with Complete Follow-up Management by experienced Senior Physiotherapists who all have specialized training on Manipulative Therapy. *Result & Discussion:* The studied case presented with severe pain (VAS score 09 out of 10) at his entire heel extends to half of the foot especially medial portion with hard small swelling at his right foot. He diagnosed by physician as general heel pain and taken some analgesics and one triamcinolone acitanoid injection at his heel but did not responded well as during medication and after injection he relieved pain about 40% but after that it recur again with severe intensity. This case was diagnosed here as planter fasciitis with inappropriate biomechanics at his right foot. It was started with the treatment of tendo-achilis stretching, gentle followed by Deep Transverse Friction Massage (G/D TFM) with ice compression. Gradually it was progressed the physiotherapy treatment as calf muscle stretching & strengthening, tibialis anterior strengthening, planter fascia stretching, shoes modification and ultrasound therapy. After progressive 15 session physiotherapy in 25 days period the treatment counter good results as the pain was almost abolished (VAS-1 out of 10) then progressive two weeks self-rehabilitation program at home responded absolute pain free and return to his normal activities. *Conclusion and Recommendation:*

Physiotherapy is one of the choice of treatment of any kind of musculo-skeletal mechanical problems where the analgesics are almost failed intervention. This case guided the practitioners about the management of heel pain patients who might have faulty biomechanics. The case management should be highly systematic in sense of diagnosis and treatment where clinical reasoning in every steps is very important. Further case-control trial should be done for more authentication of the applied treatment and progression.

Key Words: Planter Fasciitis, Heel pain, Physiotherapy Treatment

1 Clinical Physiotherapist, Dhaka University Medical Center

2 Clinical Physiotherapist, Dhaka University Medical Center

3 Associate Professor & Consultant Physiotherapist, M. H. Shamarita Medical College

Correspondence: Email: physioferoz@gmail.com; cell: +880 1765932545

Introduction:

Plantar fasciitis is the musculo-skeletal conditions which mostly leads inferior heel pain and happens about 10% populations at USA whereas there are about more than 600,000 outpatient visits annually in the United States due to heel pain (Riddle and Schappert, 2004).

Sedentary and also active peoples of all ages may affects in this problems. The person who are obese, more time working in standing position or flat foot they mostly affected in this problems. Physiotherapist's clinical experiences nearly conclude that it may happen due to direct or indirect trauma or injury of planter fascia from the stress of over use or overload mechanisms (Riddle, et. al., 2003).

There has no evidence strongly supports about the effectiveness of any treatment for plantar fasciitis whereas most patients improve without specific therapy or by using conservative measures (Buchbinder, 2004). Biomechanics

correction with shoe modification and stretching exercises may be beneficial for planter fasciitis. Although there has no strong evidence regarding the use of NSAIDs, their effectiveness in managing other musculoskeletal conditions makes them reasonable choices for adjunctive therapy (Pfeffer, et. al., 1999).

The patients who do not improve after initial treatment, corticosteroid injection or dexamethasone iontophoresis may provide short-term benefit. However, these therapies do not improve long-term outcomes (Crawford and Thomson, 2003) and may cause plantar fascia rupture (Acevedo and Beskin, 1998).

Rationale and Justification of the Study:

The case study is the mirror of the clinicians which gives direct implication of the applied intervention. If the applied interventions if helpful for the clients then others can use it

and can certify its authenticity. This type of case study can guide for future studies as required. Sometimes the time and budget can stand as barrier of the clinical study but clinicians are treating patients regularly where there has a strong land of clinical case studies. So this type of case study is highly essentials where its required necessary support to the clinicians as possible.

Assessment findings with concluding the clinical hypothesis: The case presented with severe pain (VAS score 09 out of 10) at his entire heel extends to half of the foot especially medial portion with hard small swelling at his right foot. He was 56 years obese case with 76kg body weight with diabetes mellitus, Hypertension and sedentary life styles. Mostly he works with standing posture with shoe using 10-12 hours daily. Pain increased on early in the morning and standing after long time sitting and after some movement gradually the pain decreases but discomfort which disturb his occupation. Sometimes he has taken office leave due to this problems.

He diagnosed by physician as general heel pain and taken some analgesics and one triamcinolone acetonide injection at his heel but did not responded well as during medication and after injection he relieved pain about 40% but after that it recur again with severe intensity.

On palpation there has pain, hard feeling and local tenderness at inferior and medial portion of foot and heel. Soft shoes and tendo-achilis stretching gives some relief but hot compression leads more discomfort. X-ray of right foot showed mild calcaneal spur and decrease the middle arch of foot.

The occasional incidences of morning pain experienced by this patient appear to follow an inflammatory pattern. This, coupled with local palpatory tenderness at the calcaneal entheses, is a common presentation for patients with plantar fasciitis (Thomas et al., 2010; Young et al., 2004). Restricted talocrural dorsiflexion of 5° has also been documented as increasing the likelihood of developing plantar fasciitis (Young et al., 2004). This patient also had a positive Windlass test which has been shown have a positive likelihood ratio of 28.7 and a high specificity of 0.99 for plantar fasciitis (Alshami et al., 2007). There is therefore some research evidence to support my hypothesis of plantar fasciitis as the main peripheral nociceptive driver.

As the aetiology behind plantar fasciitis is poorly understood (Meyer et al., 2002; Thomas et al., 2010; Young et al., 2004) it is more difficult to determine that leads to this patient's symptoms. Mechanical overload is the most commonly accepted theory for the development of plantar fasciitis (Thomas et al., 2010).

Clinical reasoning and clinician's expertise conclude the clinical hypothesis as plantar fasciitis with faulty biomechanics with calcaneal spur.

Interventions, Results and Discussion: It was started the physiotherapy treatment as tendo-achilis stretching (10 stretch x 3 sets x 2mins interval), gentle followed by Deep Transverse Friction Massage (G/D TFM- 2-3mins x 2 sets x 3mins interval) with ice compression (20mins x 1 set) at his right planter fascia and heel. After (regular one session) 5

session when the continuous pain decreased (VAS-06 instead of 09) then it was applied Ultrasound Therapy for 3mins daily after all procedures and also gradually it was progressed the physiotherapy treatment as calf muscle stretching & strengthening, tibialis anterior strengthening, planter fascia stretching, shoes modification and guided home exercises. The shoes were modified with proceeding the arch of the shoes which were very comfortable for the patients. After 10 session of treatment the pain was decreased as VAS-04 instead of 09. Then all exercises program were progressed as intensity, velocity and repetitions with times followed by kinesio taping three session as 2days interval and 2days existed. After progressive 15 session physiotherapy in 25 days period the treatment counter good results as the pain was almost abolished (VAS-1 out of 10) then progressive two weeks self-rehabilitation program at home responded absolute pain free and return to his normal activities.

As it was continuous pain so it indicated that there has inflammation so calf muscle stretching may relieve the stress on heel and ice application decreases the inflammatory signs. The calf muscle and tibialis anterior muscle strengthening exercises helps to stabilize the ankle joint as well as foot. The UST may speed up the inflammatory process. The kinesio taping helps to stabilize the ankle and save from further trauma. As there has some faulty biomechanics so that the kinesio tape and shoe modification helps to correction of faulty biomechanics.

Limitations of the study: It was a single case study so that there was no chance to compare the treatment with another patient and group.

Conclusion & Recommendation:

Planter fasciitis is usually treated by physiotherapist when seek conservative treatment where the manual therapy is the choice of treatment but it have to be applied by the well trained and well experienced physiotherapist. As Manipulative therapy has good implications whereas it also can harm if applied with untrained hand as it's an arts of handling. This case guided the practitioners about the management of heel pain patients who might have faulty biomechanics. The case management should be highly systematic in sense of diagnosis and treatment where clinical reasoning in every steps is very important. Further case-control trial should be done for more authentication of the applied treatment and progression.

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