ROLE OF LOW DYE TAPING FOR SHORT TERM TREATMENT OF PLANTAR FASCIITIS

Rajni Ranjan[1], Rakesh Kumar[2], Ramji Lal Sahu[3], Ankur Agarwal[4], Ajeet Singh[5]

[1]Associate Professor, Department of Orthopaedics, School of Medical Sciences & Research (Sharda Hospital).
[2]Senior Resident, Department of Orthopaedics, School of Medical Sciences & Research (Sharda Hospital).
[3]Professor, Department of Orthopaedics, School of Medical Sciences & Research (Sharda Hospital).
[4]Assistant Professor, Department of Orthopaedics, School of Medical Sciences & Research (Sharda Hospital).
[5]Assistant Professor, Department of Orthopaedics, School of Medical Sciences & Research (Sharda Hospital).

ABSTRACT

BACKGROUND

Plantar fasciitis is a common cause of foot discomfort. Different treatment modalities exist for its treatment. Low dye taping is often used in conjunction with other treatment options.

AIMS AND OBJECTIVES

Purpose of the study was to evaluate therapeutic effect of low dye taping in plantar fasciitis.

MATERIALS AND METHODS

In this prospective study, 56 patients were included. Low dye taping applied for one week. First step pain (Measured on VAS scale) and Foot Health Status Questionnaire domain of foot pain, foot function and general foot health were used to evaluate the patient prior to taping and after one week of low dye taping.

RESULT

Patient treated with low dye taping reported significant improvement in first step pain and Foot Health Questionnaires Score after one week of treatment. Five patients experienced an adverse event.

CONCLUSION

Low dye taping is effective in short term basis.

KEYWORDS

Plantar Fasciitis, Low Dye Taping, Visual Analogue Scale, Foot Health Status Questionnaire.

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INTRODUCTION

Plantar fasciitis is one of the common foot problems. It has been estimated that it affects as much as 10% of general population over lifetime.[1] The disorder is considered to be multifactorial in origin and can be triggered by obesity, excessive period of weight bearing activity and decrease range of movement.[2,3] The pain is most noticeable in the morning with first few steps and it is often described as 'first step pain.'[4,5] Many traditional options exists for the treatment of the condition including rest, stretching, orthotic night splint, low dye taping, anti-inflammatory agent, Extracorporeal Shockwave Therapy (ESWT) and surgery.[4,6,7] The purpose of our study was to investigate the therapeutic effect of low dye taping, a commonly used short term treatment for plantar fasciitis.

MATERIAL AND METHOD

Study was conducted in outpatient department of our hospital. Participants were included if diagnosed with plantar heel pain described as localised pain at plantar heel that was worst when first standing or walking after rest and that improved initially after standing, but worsened with increased activity. Fifty six patient who fulfilled inclusion and exclusion criteria were included in our study.

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Corresponding Author:
Dr. Rajni Ranjan,
1A-608, AWHO Township,
Gurjinder Vihar, Greater Noida-201310,
Uttar Pradesh.
E-mail: dr.r.ranjan04@gmail.com
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Inclusion Criteria

1. Age 15-60 year.
2. Symptom >2 weeks.
3. First step pain (Pain score >= 30 on VAS scale).

Exclusion Criteria

1. Inflammatory bone disease.
2. Metabolic bone disease.
3. Neurological anomaly.
4. Corticosteroid injection within 3 months.
5. Patient with known tape allergy.
6. Surgery for same condition in last six months.
7. History of foot/ankle fracture.
8. Bilateral heel pain.
9. Refusal to participate in study.

Outcome assessment was performed at baseline and after one week of low dye taping. Baseline variable that were taken included age, sex, daily working hours on feet, duration of symptom. Outcome measure included (i) First step pain measured on an 100mm visual analogue scale and (ii) The Foot Health Status Questionnaires, which contains four domain foot pain, foot function, foot wear and general foot health (Although, we excluded the footwear domain).

RESULTS

Fifty six patients were enrolled with symptom suggestive of plantar fasciitis. Patient range from 15 to 60 years; 25 patients were male (44.64%) and 31 were female (55.36%). Mean duration of symptom was 7.57 weeks. Majority of the patient spent more than 8 hours on their feet. There was significant difference in VAS score from pre-treatment to post-treatment after one week of low dye tapping. There was improvement in Foot Health Status Questionnaires score (Table No. 3). Five patients developed adverse event described as allergic reaction to the tape (n=3) and taping too tight (n=2). All adverse events get corrected on removal of tape.

Age	No.	Percentage
15-30	10	17.85%
31-45	26	46.43%
46-60	20	35.71%
Table 1		

Duration of Symptom	No.
>8 weeks	28
4–8 weeks	12
<4 weeks	16
Table 2	

	Pre-treatment	Post-treatment
First Step Pain (VAS score)	65.41	28.83
Foot Pain	43.08	64.62
Foot Function	51.15	71.54
Foot Health	32.69	48.46
Table 3		

DISCUSSION

Most commonly affected individual are middle aged women, obese person, athlete and male runner.[8] The two most common cause of this condition is years of overuse and trauma. The plantar fascia is a thick fibrous connective tissue, which originates at the medial tuberosity of the calcaneus and insert into the plantar plate of the metatarsophalangeal joint, base of proximal phalanges and the sheath of the flexor tendons. The plantar fascia act as bowstring to maintain and provide support for the longitudinal arch of the foot and to assist with dynamic shock absorption.[8] Poor biomechanics of foot can lead to foot pathology and associated plantar pain. The development of heel pain from plantar fascia strain appears to depend on the ability of tissue to handle force generated during weight bearing activity. When the force exceeds the tissue strength capability, micro tear occurs resulting in an inflammatory process.

Chronic inflammation of the site may lead to development of degenerative process.[8] Taping technique correct the underlying problem of poor foot biomechanics.[8] The taping technique prevents arch collapse and elongation of foot during weight bearing.[5] In clinical setting low dye taping results in almost immediate relief in symptom.[9] It is proposed that during this short term alleviation of symptom, the adjunct management option have time to reach therapeutical threshold.[9] Continuous taping is difficult as patient become sensitive to tape. This may lead to skin breakdown. Patient suitable for this technique should be carefully chosen to avoid an adverse effect.[7] Clinical resolution of plantar fasciitis symptom usually takes several months, therefore taping should as part of an intervention and not as a single treatment modality.

CONCLUSION

Low dye taping provides excellent relief in pain and stiffness on short term basis. Present study suggests that low dye taping is a beneficial technique for plantar fasciitis in short term treatment and can be used as immediate pain reliever.

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