Original Research Article

Radiological incidence of long plantar and short ligament enthesophytes in patients with symptomatic plantar fascitis

Challa Supradeeptha[1], Jagan Mohan Sontyana[2*], Satyaprasad J[3]

[1,2]Associate Professor,[3]Professor, Department of Orthopedics, GSL Medical College, Rajahmundry, East Godavari, Andhra Pradesh, INDIA.
Email: supradeep_challa@yahoo.co.in

Abstract

Background: This study is carried out to find out the incidence of long plantar and short plantar ligament enthesophytes in patients with symptomatic plantar fascitis using lateral ankle radiographs. **Materials and methods:** It is a prospective study including 300 ankles in 150 patients (100 female and 50 male) with mean age of 46 years with plantar calcaneal enthesophytes in lateral radiograghs of ankle by two orthopaedic surgeons. **Conclusions:** Out of 150 ankles 13 ankles showed long plantar ligament enthesophytes and one ankle showed short plantar ligament enthesophyte.
Key words: long plantar ligament, short plantar ligament, plantar fascitis

[*]**Address for Correspondence:**
Dr. Jagan Mohan Sontyana, Associate Professor, Department of Orthopedics, GSL Medical College, Rajahmundry, East Godavari, Andhra Pradesh, INDIA.
Email: supradeep_challa@yahoo.co.in
Received Date: 30/01/2019 Revised Date: 26/03/2019 Accepted Date: 08/05/2019
DOI: https://doi.org/10.26611/10201026

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 16 May 2019

INTRODUCTION

Heel pain is one of the most common complaint encounter in orthopaedic out-patient department[1]. plantar fascitis is the most common cause of heel pain and corresponds to 11 to 15% of all foot compaints[2]. Plantar enthesophyte is a common finding and has been reported in 11–27% of asymptomatic persons, as well as 73% of patients presenting with heel pain.[3,4,5] Plantar and Achilles spurs are highly prevalent in older people and the radiographic appearance of spurs differs between men and women. In individuals < 50 years of age, spur (Achilles and plantar) formation is more common in women than in men. Additionally, there was a notable moderate positive correlation between Achilles and plantar spurs for women <30 years of age[6]. Incidence of calcaneal spur in Indian population with heel pain is 59%[7]. Plantar calcaneal enthesophytes arise in five different locations: at the insertion sites of abductor digiti minimi and flexor digitorum brevis muscles; between the plantar fascia and these muscles; and, less frequently, within the plantar fascia and at the insertion site of the short plantar ligament as per Abreu MR *et al*[8]. The long plantar ligament attached to the inferior surface of the calcaneus between the posterior and anterior tubercles and this ligament extended distally and divided into two bands that attached to the cuboid (the more lateral and deep fibers) and to the second to fourth metatarsal bases (the more medial and superficial fibers)[9,10]. The short plantar ligament showed an independent and more anterior attachment to the calcaneus than long plantar ligament. it fanned out anteromedially to attach to plantar surface of cuboid, just proximal to the peroneus longus tendon tunnel[9,10].

MATERIALS AND METHODS

it is a prospective study done in GSL medical college, Rajahmundry, Andhra Pradesh from January 2018 to December 2018. The study population was the patients coming to department of Orthopaedics with complaints of posterior heel pain. Inclusion criteria were persistent heel pain for at-least 3 months and radiological presence of calcaneal spurs. Exclusion criteria include, age less than 18 years, patients with systemic arthropathy disorders and patients with previous history of significant trauma (foot bone fracture) to affected limb.

How to site this article: Challa Supradeeptha, Jagan Mohan Sontyana, Satyaprasad J. Radiological incidence of long plantar and short ligament enthesophytes in patients with symptomatic plantar fascitis. *MedPulse International Journal of Orthopedics*. May 2019; 10(2): 33-34. https://www.medpulse.in/Orthopedies/

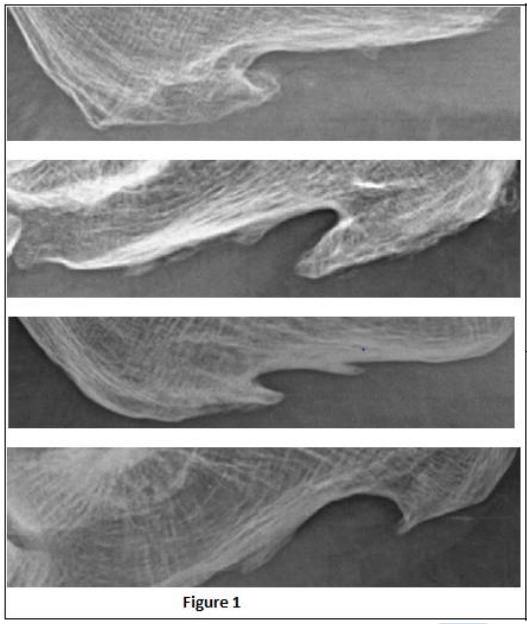

Figure 1

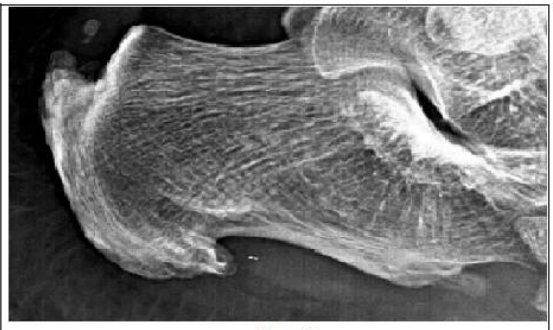

Figure 2

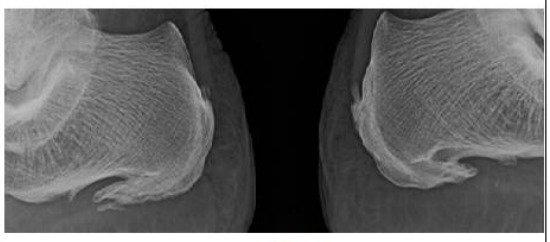

Figure 3

Figure 1: Long plantar ligament enthesophytes; **Figure 2:** Short plantar ligament enthesophytes; **Figure 3:** Bilateral long plantar ligament enthesophytes

RESULTS

Total of 300 ankle x rays were observed in 150 patients by two orthopaedic surgeons. 100 were women and 50 were male patients. Out of 300 ankle x rays, 13 patients have long plantar ligament enthesophytes (figure-1) and one patient have short plantar ligament enthesophyte (figure-2). Ten patients are females and 4 are males. twelve out of fourteen patients are at age group of 40-50 years and one patient age is 65 years. Out of 14 patients, three were doing house hold activities and eleven were manual labourers. one patient have bilateral long plantar ligament enthesophytes (figure-3).

DISCUSSION

Very few research papers were available regarding the presence of long plantar and short plantar ligament enthesophytes. Abreu *et al* described one calcaneum with enthesophyte at short plantar ligament attachment site[8]. Same as calcaneal enthesophytes, long plantar and short plantar enthesophytes are also observed in middle age group and manual labourers and person who stand for long time.

CONCLUSION

The study group is less numbers. Most of patients are manual labourers and bear foot walkers. The short comings of this study were that it involved only people living in and around Rajahmundry and a small sample size.

REFERENCES

1. Kwame EA, Kaiyu M. Heel pain: a systematic review. Chinese J Traumatology. 2015;18(3):164-9.
2. League AC. Current concepts review: plantar fasciitis. Foot Ankle Int 2008;29:358-66.
3. McCarthy DJ, Gorecky GE. Anatomical basis of inferior calcaneal lesions: a cryomicrotomy study. J Am Podiatry Assoc 1979; 69:527–536.
4. Rubin G, Witten M. Plantar calcaneal spurs. Am J Orthop 1963; 5:38–41.
5. Barret SL, Day SV, Pignetti TT, Egly BR. Endoscopic heel anatomy: analysis of 200 fresh frozen specimens. J Foot Ankle Surg 1995; 34:51–56.
6. Toumi *et al*. Changes in prevalence of calcaneal spurs in men & women: a random population from a trauma clinic.. BMC Musculoskeletal Disorders 2014, 15:87.
7. Lourdes RK *et al*. Incidence of calcaneal spur in Indian population with heel pain International Journal of Research in Orthopaedics. Int J Res Orthop. 2016 Sep;2(3):173-175.
8. Abreu MR, Chung CB, Mendes L, Mohana-Borges A, Trudell D, Resnick D. Plantar calcaneal enthesophytes: new observations regarding sites of origin based on radiographic, MR imaging, anatomic, and paleopathologic analysis. Skeletal Radiol. 2003 Jan; 32(1):13-21.
9. Lina Melão, Clarissa Canella, Marcio Weber, Pedro Negrão, Debra Trudell, Donald Resnic: Ligaments of the Transverse Tarsal Joint Complex: MRI–Anatomic Correlation in Cadavers AJR Sep 2009; 193:662– 671.
10. Ward KA, Soames RW. Morphology of the plantar calcaneocuboid ligaments. Foot Ankle Int 1997; 18:649-653.

Source of Support: None Declared
Conflict of Interest: None Declared