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Original Article

Prevalence of Heel Spur in Teachers

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ABSTRACT

Calcaneal heel spur is a typical foot problem that impairs the community and can affect people of all ages. Heel spur cause pain during walking and prolong standing. Calcaneal spurs' pathogenesis is poorly known. Heel spurs are found in around half of all individuals with plantar fasciitis. **Methods:** A cross-sectional investigation was carried out among 141 (both genders) participants mainly teachers by profession from the different hospitals of Lahore. Research was done in order to determine the incidence of heel spur in teachers. Data was collected by questionnaire and checking their radiographs. Descriptive analysis using SPSS version 26.0 to find results. **Results:** Overall prevalence came out as 79 (56%) teachers indicate heel spurs and 62 (44%) indicate no heel spur. **Conclusion:** The finding of this study showed that prolong standing can be the cause of foot pain and cause changes. Participants indicate foot pain due to heel spurs.

INTRODUCTION

The calcaneus (Latin for "heel bone") is the longest, biggest, and strongest of the tarsal bones. It forms the anterior pillar supporting the foot's bony arches [1]. A calcaneal spur or heel spur is a bone protrusion or enthesophyte from the calcaneus. It is classified into two categories based on where it is located on the calcaneus. It is called a dorsal heel spur or Achilles spur if it develops on the back of the heel, while it is considered a plantar spur (PS) or calcaneal spur if it develops on the sole [2]. The plantar calcaneal spurs (PCS) are a bony protrusion from the calcaneal tuberosity that have been examined using dead bodies, radiography, histology, and surgery [3]. Some authors utilize microscopy or subjective judgment to characterize them as projections greater than 1 or 2 mm [4]. Apart from toenail troubles, heel spur syndrome is said to be the most frequent painful foot syndrome. Heel spur syndromes account for roughly 15% of all foot disorders [5]. PCS are most commonly caused by the tuberosity's medial process, although they can also be caused by the lateral processes or the sulcus. PCS has a wide range of anatomical appearances that can be classified as simple or irregular. Simple PCS are triangle constructions with a large base that taper to a sharp apex [6]. They have well developed trabecular and smooth sclerotic cortical margins. Irregular spurs, on the other hand, have poorly defined edges and no distinct trabecular [4]. It is currently unknown if a PS could trigger plantar fasciitis (PF). According to an analysis of relevant literature, some authors described a patient with PS who did not have PF, whereas others suggested a link between the two. Nevertheless, we encounter people with painful PF but no PS in the literature [7]. Calcaneal spurs were seen in 45% to 85% of plantar fasciitis patients, as well as 10% to 63% of asymptomatic controls. The existence of plantar calcaneal spurs is very highly associated with osteoarthritis [8]. PS has been referred to as spur syndrome, runners share, and calcaneal periostitis in the past [9]. Pain is frequently worse during weight-bearing activities, and it might be even worse first thing in the morning or after a lengthy time of sitting. The majority of people who suffer from plantar heel discomfort are in

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their forties or fifties, and many of them are overweight [10]. Plettner was the first to recognize the PCS in 1900. Only a few studies have been conducted on the prevalence of PCSs and dorsal calcaneal spurs in the general population. In the literature, an incidence rate ranging from 11% to 46% has been recorded. People who are older, have osteoarthritis, or are obese are at a higher risk [11,12]. Spur production in the Achilles tendon and plantar fascia may be related to the transmission of mechanical stress from one place to another, although the relationship between spur development and age and sex is yet unknown [12,13]. Calcaneal spurs' pathogenesis is poorly known. According to the longitudinal traction hypothesis, recurrent traction of the plantar fascia into the calcaneus causes inflammation and reactive enthuses ossification. An alternate vertical compression hypothesis claims that these spurs form as a result of repeated compression rather than traction [14]. Manchester foot pain and disability index (MFPDI) was developed based on previous studies. There are 19 statements in total. A total of 45 individuals seen by rheumatologists, 33 patients seen by general practitioners for a foot condition, and 223 people who responded to a community survey on foot problems such heel spurs were tested [15]. Heel spurs are found in around half of all individuals with pf, however they are generally an unintentional finding that has little to do with the patient's symptoms. A thicker heel aponeurosis of more than 5 mm can be seen on ultrasonography. M.A. Fakharian et al, based on the findings, it can be concluded that while a spur is unlikely to be the cause of pain, it can be a predisposing factor for heel discomfort. Another possibility is that pain and spurs share a same aetiology [16]. The most prevalent cause of calcaneal pain is a heel spur, which is a common condition among adults. Although the exact cause of heel spur is unknown, it has been claimed that heel spur is caused by repetitive traction of the plantar fascia's insertion into the calcaneus and repetitive compression. Calcaneal heel spur is a typical foot problem that impairs 15–20 percent of the community and can affect people of all ages. Overweight, older, and female patients are more likely to experience calcaneal spur symptoms. Although a calcaneal heel spur can be mistaken for PF, basic clinical testing and physical examination results can help differentiate the two [16-18].

METHODS

It was a cross-sectional study and for this purpose, the collection of data, questionnaires and X rays (to find radiographic changes) were used for investigating the prevalence of heel spur in teachers. The sample size was calculated using non-probability convenient sampling technique. Written consent was taken from the teachers and the significance of the study was explained before filling the questionnaires.

RESULTS

In sample of 141 participants, 45 (31%) were in age group of 35 – 40 years, 57 (40%) were 41 – 45 years age group, 18 (12%) from 46 – 50 age group, 19 (13%) from 51 – 55 and 2 from 56 – 60 group (Figure 1). In sample of 141, 79 (56%) indicate heel spurs and 62 (44%) indicate no heel spur (Table 1,2).

	Frequency	Percent
Yes	79	56.0
No	62	44.0
Total	141	100.0

Table 1: Descriptive statistics of heel spur diagnosed in radiographic findings?

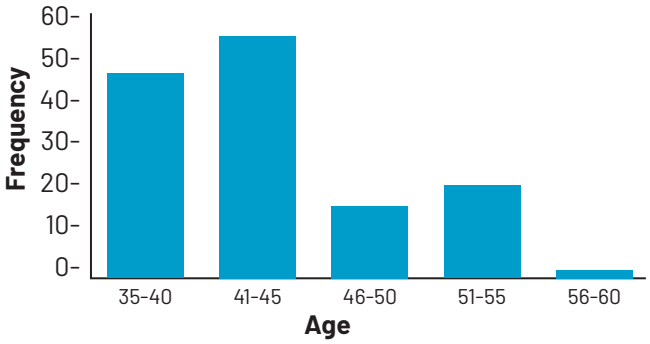

Figure 1: Graphical representation of heel spur diagnosed in radiographic findings

Age	Frequency	Percent
35-40	45	31.9
41-45	57	40.4
46-50	18	12.8
51-55	19	13.5
56-60	2	1.4
Total	141	100.0

Table 2: Descriptive statistics of age

DISCUSSION

The prevalence of spurs may related to age and sex. The rate of heel spur and Achilles spur increased with advancing age. They continued to increase after age 70. PF is the most prevalent cause of plantar heel pain, and it has both intrinsically and extrinsically origins. Excessive weight-bearing activity and improper footwear are examples of external influences. Excessive foot pronation, overweight, limited ankle dorsiflexion, and autoimmune

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disorders, the most frequent of which is PS, are all internal causes. In a recent study, Johal K S highlighted the relationship between PS and PF. The authors found that PS was more prevalent in PF patients than in the comparison subjects. Patients with bigger PS had much worse physical function than those with lesser spurs, according to a study by Kuyucu et al. The researchers concluded that larger spurs were associated with significantly worse pain and function. The authors rechecked lateral X-rays of 1228 calcanei and spotted a 14.6% common occurrence of PCS. Females had a 17.7% incidence and males had a 13% incidence. In their research of 1027 lateral ankle X-rays, Riepert et al found that the frequency of pcs and dorsal calcaneal spur was 11.2% and 9.3%, respectively. They also discovered that as people become older, the frequency of plantar calcaneal spur and dorsal calcaneal spur increases. There was also a question about the association between gender and incidence, and Females tend to have pcs while males tend to have dorsal calcaneal spurs. The incidence of PCS in previous studies was 12.4%, which is lower than the rate reported in many published researches. Possibly, this is due to the fact that a PCS isn't particularly clearly defined. In order to ascertain a true calcaneal spur, the authors used the definition of Prichasuk and Subhadrabandhu as well as Davis et al, which defines a spur as up to 2 mm in length. Furthermore, the study population's age profile is a significant determinant. Calcaneal spurs are usually common in individuals who are elderly, according to several research. Menzetal discovered that 55 percent of their At least one calcaneal spur was present in patients aged 62 to 94, whereas Banadda et al 31 found that 50 percent of patients older than 51 years had at least one PCS. In our study of 1103 individuals, the average age was 37.9 years. This could explain why spurs are less common. There was an average age difference of 18 years between patients with and without spurs [19]. We admit that their research has some flaws. They were unable to contact 24 percent of the patients who were diagnosed with a PCS, therefore the 76 percent follow-up rate must be regarded a flaw. The authors did not conduct a clinical examination of the patients. While such a project might have enhanced accuracy in identifying plantar fasciitis, it would have also reduced the study's size.[20]. Patients who come to our outpatient department with radiographic evidence of a spur are more than twice as likely to experience foot discomfort as those who do not have a spur. PCS, contrary to popular opinion, are important in this regard. In this current study, I wanted to check the prevalence of heel spurs in teachers and results were satisfying 79 (56%) indicate heel spurs and 62 (44%) indicate no heel spur. Mostly teachers complain about foot pain due to prolong standing and it also affect their living.

CONCLUSION

The finding of this study showed that prolong standing can be the cause of foot pain and cause changes. Participants indicate foot pain due to heel spurs.

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