

Association of High Serum Uric Acid with Retrocalcaneal Bursitis

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Abstract

Retrocalcaneal bursitis is an inflammatory condition of the bursa located in between the calcaneus and the Achilles tendon. Calcaneal bursitis is most commonly caused usually by repetitive trauma or overuse and pressure generated conditions, such as athletes wearing tight-fitting shoes, increased serum uric acid, ill-fitting footwear, foot or ankle deformity, rheumatoid arthritis, and seronegative spondyloarthropathies etc. The study was performed on 50 patients with retrocalcaneal bursitis who had attended at OPD of National Institute of Traumatology and Orthopaedic Rehabilitation during January 2017 to December 2018. This is an observational type of study to find out the association of high serum uric acid with retrocalcaneal bursitis. High serum uric acid concentration was significantly associated with retrocalcaneal bursitis. About 46% patients had high serum uric concentration while male and female patients had almost equal distribution. Other causes were external pressure (50%), trauma (32%), rheumatoid arthritis (4%) and idiopathic (6%).

Keywords: Retrocalcaneal bursitis, high serum uric acid, external pressure, trauma, rheumatoid arthritis.

Introduction

Retrocalcaneal bursitis is an inflammatory condition of the bursa situated in between the calcaneus and the anterior surface of the Achilles tendon [1]. Anatomically there are usually two bursae situated just above to the attachment of the Achilles (calcaneal) tendon. [2] Anterior/deep to the retrocalcaneal (subtendinous) bursa, [2] and Posterior / superficial of the Achilles tendon that is the subcutaneous calcaneal bursa, it is also called the Achilles bursa. [3][4][5] It is also called as Achilles tendon bursitis.

Inflammation to the calcaneal bursae is the most commonly caused by repetitive (cumulative) trauma or overuse and condition is stimulated by the pressure, such as when athletes wearing tight-fitting shoes. Retrocalcaneal bursitis may be associated with high level of serum uric acid, rheumatoid arthritis, and seronegative spondyloarthropathies. The presenting features of retrocalcaneal bursitis are usually pain in the dorsal of the heel, specially when running in the uphill, pain may be worsen when rising on the toes, tenderness in the dorsal of heel and gradual swelling at the dorsal of heel. Good clinical practises usually includes evaluation of the

tendon, bursa and also calcaneum by careful history taking, observing of the region for bony prominence and swelling in the local area with palpation in the maximal tenderness area. Biomechanical abnormalities, joint stiffness and proximal soft tissue tightening can exacerbate an anatomical predisposition to retrocalcaneal bursitis, they warrant correction when present [6].

Plain radiographs of the calcaneus may reveal any bony deformity. However, on weight-bearing lateral radiographs, the retrocalcaneal recess often appears normal even in patients with retrocalcaneal bursitis. Magnetic resonance imaging (MRI) may also demonstrate the bursal inflammation. Ultrasonography usually potentially useful tool for the diagnosis of the pathologies of the Achilles tendon. [7]

This study was aimed to find the association of high serum uric acid with retrocalcaneal bursitis. The hyperuricemia is defined as ≥ 7 mg/dL for men and ≥ 6.0 mg/dL for women [8]

Materials and methods:

Study Population:

The study was performed on 50 patients with retrocalcaneal bursitis who had attended at OPD of National Institute of Traumatology and Orthopaedic Rehabilitation during January'2017 to December'2018. This is an observational type of study to find out the association of high serum uric acid with retrocalcaneal bursitis. After completing a questionnaire all individuals under the study underwent a detailed clinical history, musculoskeletal examination and laboratory testing. Retrocalcaneal bursitis was diagnosed by pain, tenderness and swelling at the back of heel.

Study Variables:

Study of main variable was concentration of serum uric acid. Furthermore, we have included the following; age, gender, history of trauma, external pressure such as tight-fitting shoes, ill fitting footwear, associated disease such as rheumatoid arthritis or seronegative spondyloarthropathies.

Statistical Analysis:

The analyses were done in all the 50 patients who were included in the study. Frequencies (expressed as percentage) were used to describe the data.

Results:

During the 2 year study period 50 patients were diagnosed as retrocalcaneal bursitis who were included in the study.

Table 1: Association of serum uric acid with retrocalcaneal bursitis

Serum Uric Acid	Male	Female	Total
High	13	10	23
Normal	16	11	27

Among 50 patients of retrocalcaneal bursitis 23 (46%) patients were associated with high serum uric acid. Out of 29 male patients 13 patients

Out of 50 patients 29 (58%) patients were male and 21(42%) were female. Mean age was 42.06 (SD 10.96) years where range of age was 22-67 years. (45% of male patients) had high serum uric acid concentration. Whereas 10 female patients (48% of female patients) had high serum uric acid level.

Table 2: Association of other causes with retrocalcaneal bursitis

Causes of retrocalcaneal bursitis	No. of Patients	Percentage
Trauma	15	30
External Pressure	25	50
Rheumatoid arthritis	2	4
Seronegative spondyloarthropathies	0	0
None	3	6

Half of the patients were associated with external pressure such as tight fitting shoes. About 15 patients (30%) had history of previous trauma. Only 2 case had rheumatoid arthritis, but no one

had seronegative spondyloarthropathies. Out of 50 cases of retrocalcaneal bursitis 16 patients (32%) had more than one cause. Three patients had not associated with any significant causes.

Discussion:

In this study 50 retrocalcaneal bursitis patients were assessed to find the cause. External pressure such as tight fitting shoes was the leading cause of retrocalcaneal bursitis. Half of the patients had history of external pressure. Second cause of retrocalcaneal bursitis is high serum uric acid. About 46% patients had high serum uric concentration while male and female patients had almost equal distribution. Other causes were history of trauma (32%), rheumatoid arthritis (4%) and idiopathic (6%). In this observational study, high serum uric acid concentration was significantly associated with retrocalcaneal bursitis.

Conclusion:

There are many causes of retrocalcaneal bursitis. In our study about half of retrocalcaneal bursitis had high serum acid. So it can be said that high serum uric acid is an important cause of retrocalcaneal bursitis.

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