Prevalence of Gout in Presenting Heel Pain

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Introduction

Approximately 11% of patients seen in clinic will present with heel pain.[1] The majority of these will be diagnosed with plantar fasciitis which is the most common cause of heel pain.[2] The remaining patients will have varying diagnosis'. Most of these will result from varying biomechanical issues. It is important for the foot and ankle specialist to be cognizant of heel pain caused by other sources. Some systemic causes of heel pain include benign or metastatic disease (bone tumors etc), Paget's Disease, seronegative arthropathies, Sarcoidosis, Sickle Cell, Rheumatoid Arthritis, and Gout.[3,12] Many of these are addressed in the literature to some extent. The prevalence of gout is increasing with our aging population. It has been reported that 4% of the population has a clinical diagnosis of gout, and nearly 21% of the population has elevated uric acid levels. [4] The frequency of gout affecting the heel has been not been directly addressed in literature.

Purpose

This study explores one of many possible systemic causes of heel pain: gout. Gouty involvement of tendons and other soft tissue structures in the lower extremity is well documented.[5] The prevalence of gout associated with heel pain has not been directly addressed in the literature. The purpose of this study is to identify the prevalence of elevated uric acid levels in patients experiencing heel pain (posterior, plantar, or both).

Methodology & Hypothesis

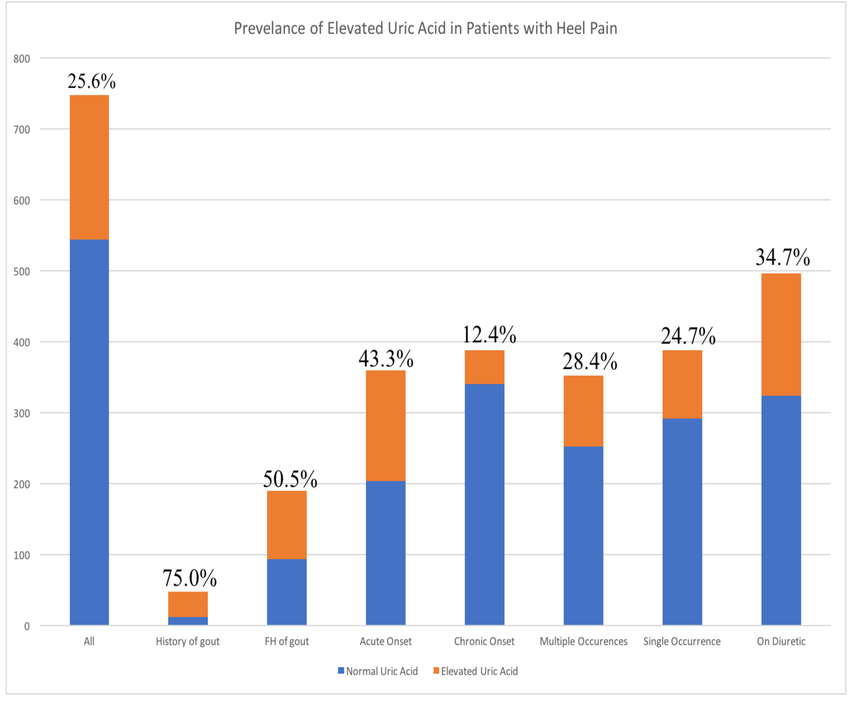
IRB approval was obtained from the Henry Ford Health System. Population was selected from patients presenting to the Henry Ford Medical Group podiatry clinics in the metro Detroit area. Inclusion criteria consisted of heel pain whether acute or chronic, or posterior or plantar. Consenting patients agreed to have their uric acid levels tested and to be treated for gout if it was found to be elevated. Exclusion criteria was refusal to be treated for gout if found to have elevated uric acid level. Blood was drawn for each patient, and each patient completed a heel pain questionnaire. Statistical significance was set at $p<0.05$ and analyses was performed using SAS 9.4. The authors hypothesized that there would be a positive correlation between heel pain and elevated uric acid levels.

Literature Review

There are no studies directly addressing the frequency of gout associated with heel pain. Many articles have been published showing the affects of gout on soft tissues of the lower extremity. A New Zealand based study utilizing dual energy CT showed the achilles tendon as the most common site for gout infiltration followed by the peroneals, and then tibialis anterior.[5] Shuper et al presented a case of gout involving the posterior tibial tendon and associated tenosynovitis.[7] Lougataris et al present a case in which gouty infiltration of both peroneal tendons was discovered during surgical repair.[8] Spontaneous tibialis anterior rupture has been reported in multiple case studies.[9,10] Daoussis et al presented a case of foot drop caused by gouty infiltration of the common peroneal nerve.[11]

Results

N:	748
Age:	54.3 ± 10.8 years
Gender:	Female 484 Male 264
BMI:	33.7 ± 7.7
Height:	66.8 ± 3.8 in
Weight:	213.8 ± 51.9 lbs



•Figure 1. Statistically significant findings.

Analysis & Discussion

Gout commonly affects soft tissue, and this study gives indication that gout may affect the plantar fascia in many cases. This study is limited in some regards. There was not a control group to establish uric acid levels in patients without heel pain or history of gout. The sample size was relatively small given that this was a clinical population study. The gender division was not divided equally between men and women. Strengths include narrowing the group to only patients with heel pain. This study serves well to justify multiple follow up studies. A follow up with a larger population with a large control group to compare uric acid levels between general population and patients with heel pain may be warranted. Additional studies comparing treatment modalities for these patients would also be beneficial. The findings of this study may provide indication for checking uric acid level in patients with acute heel pain.

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Affiliations/Financial Disclosure

All authors declare that there is no conflict of interest, and they have no financial interests to disclose.

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