

## The role of bone scintigraphy in determining the etiology of heel pain

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In this study we aimed to determine the role of bone scintigraphy as an objective diagnostic method in patients with heel pain.

67 heels of 50 of 182 patients with defined features who attended the orthopedics outpatient clinic with heel pain over a 3-year period, were treated with combined methods such as nonsteroidal anti-inflammatory drugs (NSAID) and contrast baths, stretching exercises and changing of footwear habits. A one year follow-up was established. The criteria identified by Wolgin et al. were used in assessing the results of the treatment.

Subcalcaneal spur was demonstrated by radiography in 44 of the 67 heels. There were two different imaging patterns observed on three phase bone scintigraphy.

*Type I imaging pattern:* Focal increased activity in the heel region or normal activity on dynamic and the blood pool phases and focal increased activity at the inferior calcaneal surface in the late static phase.

*Type II imaging pattern:* Diffuse increased activity along the plantar fascia in the dynamic and the blood pool phase, and focal increased activity at the inferior calcaneal surface in the late static phase.

There were 34 (50.7%) type I and 18 (26.8%) type II imaging patterns on the scans. Type I and type II imaging patterns were described as osseous and fascial respectively. At the final examination, the results for pattern type I were good in 16 patients (66.7%), fair in 6 patients (25%) and poor in 2 patients (8.3%), whereas in pattern type II results were good in 12 patients (80%) and fair in 3 patients (20%). The recurrence frequency was 4.1% and 6.6%, respectively.

Subcalcaneal spur was determined in 70.5% of the patients with osseous pathology and 55.5% of the patients with fascial pathology. Based on this result, it can be ascertained that calcaneal spurs develop during the pathological process causing heel pain. Other findings supporting this claim were the differences in symptom periods of the patients with type I and type II imaging patterns and scintigraphies were normaly in 10 of 44 heels indicating subcalcaneal spurs on radiographies. These findings suggested that metabolic changes contributing to subcalcaneal spur were complete. Three phase bone scintigraphy is an objective method which can be used to diagnose heel pain, especially when determining the etiological factors and prognosis.

**Key words:** bone scan, heel pain, subcalcaneal spur