

Technetium-99m human immunoglobulin scintigraphy in patients with adhesive capsulitis: A correlative study with bone scintigraphy

Özlem ŞENOCAK,* Berna DEĞİRMENÇİ,** Özhan ÖZDOĞAN,** Elif AKALIN,*
Gülhan ARSLAN,** Burcu KANER,* Cengiz TAŞCI** and Özlen PEKER*

*Departments of *Physical Medicine and Rehabilitation and **Nuclear Medicine,
Dokuz Eylül University School of Medicine, İzmir, Turkey*

Adhesive capsulitis (AC) is a disorder that is characterized by shoulder pain and progressive limitation of both active and passive shoulder motion. Although the underlying pathological mechanisms of the disease are not well understood, the inflammatory reactions depending on the stage have been demonstrated histologically. The purpose of the study is to investigate the inflammatory changes that can be demonstrated with Tc-99m HIG in AC, and to determine the presence of correlations between scintigraphic findings and the clinical assessment. Twenty-one patients (12 females and 9 males) with a mean age of 50.57 ± 8.49 were included in the study. AC was diagnosed according to recognized criteria. The planar X-ray images of the affected shoulders of all patients were normal. The patients were evaluated with the Constant Scoring System, and the functional and pain assessment parts of the American Shoulder and Elbow Surgeons' Form (ASES). Three phase bone scans and Tc-99m HIG scintigraphy were performed at least two days apart. Bone scan and Tc-99m HIG scintigraphy were evaluated visually and HIG uptake was evaluated in comparison with the contralateral normal shoulder. Bone scan demonstrated hypervascularity in 9 of the 21 patients (43%), whereas increased osteoblastic activity was detected in 19 (90%) in the affected shoulder. Tc-99m HIG uptake was positive in 12 (57%), and negative in 9 (43%) patients. All patients with increased Tc-99m HIG accumulation in the affected shoulder, also had increased osteoblastic activity on Tc-99m bone scintigraphy. A significant correlation was found between HIG uptake and constant, functional and pain scores. The difference between these scores was also statistically significant in patients with HIG positive and negative uptake. This study indicates that there is a good correlation between Tc-99m HIG scan findings and clinical scores. Tc-99m HIG accumulation in the affected shoulder may be related to continuing inflammatory reaction to AC. Tc-99m HIG scan may be a noninvasive, complementary method for demonstrating continuing inflammatory changes and may help in staging the disease.

Key words: adhesive capsulitis, technetium-99m human immunoglobulin, technetium-99m MDP, inflammation