

Mila Todorović-Tirnanić*, Vladimir Obradović,
Ruben Han, Branislav Goldner, Đorđe Stanković,
Dimitrije Sekulić, Tomislav Lazić, Božidar Đorđević

DIAGNOSTIC APPROACH TO REFLEX SYMPATHETIC DYSTROPHY AFTER FRACTURE: RADIOGRAPHY OR BONE SCINTIGRAPHY

Abstract: In the light of the difficulty of interpretation of bone X-rays after bone fracture and immobilization in patients with reflex sympathetic dystrophy (RSD), the aim of this paper was to estimate the value of bone scintigraphy in early diagnosis of post-fracture RSD, as well as to compare its value with bone X-rays.

Forty-four adult patients with bone fracture, after the period of immobilization (lasting 2-22 weeks) were investigated by bone X-rays and bone scintigraphy. In 22 of them three phase bone scintigraphy was performed, while in 22 others only delayed bone scintigrams were obtained. Thirty-seven patients had RSD after fracture, while seven patients had fracture without RSD (control group). Twenty-eight patients with RSD were in the first, while nine were in the second clinical stage of RSD.

The best distinction between the control group and the RSD patients was achieved by delayed bone scintigrams. The sensitivity (97%), positive predictive value (97%) and accuracy (95%) of delayed bone scintigrams were very high compared to the values for radiography, which were: 73%, 90% and 70% respectively. Bone scintigraphy also displayed higher specificity (86%) and negative predictive value (86%) than radiography (57% and 29% respectively). In the first clinical stage the difference between the accuracy of bone scintigraphy (97%) and radiography (63%) was greater than for the whole group. In the second stage of RSD the accuracy of bone scintigraphy (86%) and radiography (81%) was similar. Three phase bone scintigraphy is not necessary for the diagnosis of post-fracture RSD: it is sufficient to perform delayed bone scintigraphy.

It is concluded that bone scintigraphy is to be preferred to radiography for the early diagnosis of post-fracture RSD in the first clinical stage. In the second stage the diagnostic capabilities of bone scintigraphy and radiography are more comparable.

Key words: reflex sympathetic dystrophy, diagnosis, bone scintigraphy, radiography