Qualitative Patterns of Lower Extremity Lymphoscintigraphy in Patients with Suspected Lymphedema.

Department of Nuclear Medicine, Samsung Medical Center

Joon Young Choi*, Kyung Han Lee, Sun Jung Kim, Seok Boo Yoon, Sang Eun Kim and Byung-Tae Kim

To evaluate the relationship between qualitative lymphoscintigraphic patterns and clinical information, we retrospectively reviewed lymphoscintigraphies of 97 patients clinically suspected of lower extremity lymphedema.

Seventeen male and 80 female patients were studied (mean age 49±15, range 11-76). Twenty-one of the patients had bilateral edema. Lymphoscintigraphy was performed by injecting 1mCi of ^{99m}Tc-antimony sulfide colloid subcutaneously into the first and second interdigital space of each foot. Images acquired at 1 min, 1 hr and 2 hr were scored for time to regional lymph node & lymph vessel visualization, size & number of lymph nodes, and grade & location of dermal backflow or collaterals. Results of other studies were used whenever available.

Three main categories were recognized by the qualitative criteria: 1)normal flow pattern (17), 2) obstructed pattern (72) and 3) enhanced pattern (8). Final diagnosis was made clinically after considering all available information. Of the 72 patients with obstructed pattern, 12 were diagnosed as having primary lymphedema while 60 had secondary lymphedema. The primary lymphedema group could not be differentiated from the secondary lymphedema group by any of the qualitative lymphoscintigraphic findings. The location of dermal backflow corresponded well to the clinical swelling sites. In the secondary lymphedema group, the presence of collateral lymph vessels showed good correlation with symptom duration ($p<0.05$), and past history of cellulitis was associated with non-visualization of lymph vessels ($p<0.05$). The enhanced pattern was not indicative of any specific clinical situation. The normal pattern group also had various disease entities.

In conclusion, lymphoscintigraphic patterns appear to demonstrate the adaptative state of lymphatic dynamics in patients with lymphedema and deserves further investigations to evaluate its utility in the management of such patients.