

**USE OF THE C-SCAN IN EVALUATION OF PERIPHERAL LYMPHEDEMA****C. Ketterings, S. Zeddeman**

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**ABSTRACT**

*The C-(cutaneous)-scan constitutes a simple way to evaluate the status of the lymphatic system of swollen and apparently normal extremities. We have termed the procedure C-scan because this expression emphasizes the injection of the radiotracer into the cutis. Only one scintiscan, which takes approximately 15 minutes, is performed 3 hours after injection, in contrast to other investigative procedures including standard lymphangioscintigraphy, which utilize multiple scannings that unnecessarily prolong the duration of the study. The C-scan method is semi-quantitative and distinguishes pathologic conditions of the lymphatic system by means of whole body scintigraphy and by measuring the radioactivity in specific regions of interest rather than by examining solely differences in delay of transport. Both a qualitative image and a quantitative assessment are thereby produced. The C-scan is performed using a general purpose gamma camera in line to a multiprocessor computer system. Scintiscanning is performed 3 hours after an intracutaneous injection of 20 MBq of Tc99m nanocolloid (Solco) distally into the dorsum of the extremity. The image obtained is divided into regions of interest and the radioactivity in these regions is calculated as the percentage of the total radioactivity counted. The C-scan is easy to perform and can be repeated if necessary every 2 days. The effects of various treatments of lymphedema, either non-operative or operative, can be assessed short-term, and examples are provided. In conjunction with limb volume measurements, the C-scan gives an accurate impression of changes in the lymphedematous extremity before, during, and after treatment. Applications of this imaging technique are shown after combined "decongestive" physiotherapy, lymph-venous anastomosis, ablative (debulking) surgery, liposuction, and thermotherapy.*