



## Scintigraphic imaging with $^{99m}\text{Tc}$ -HMPAO labeled leukocytes in neutropenia due to increased neutrophil sequestration

GIOVANNI CARULLI,\* ELENA LAZZERI,<sup>o</sup> GINETTA LAGOMARSINI<sup>#</sup>

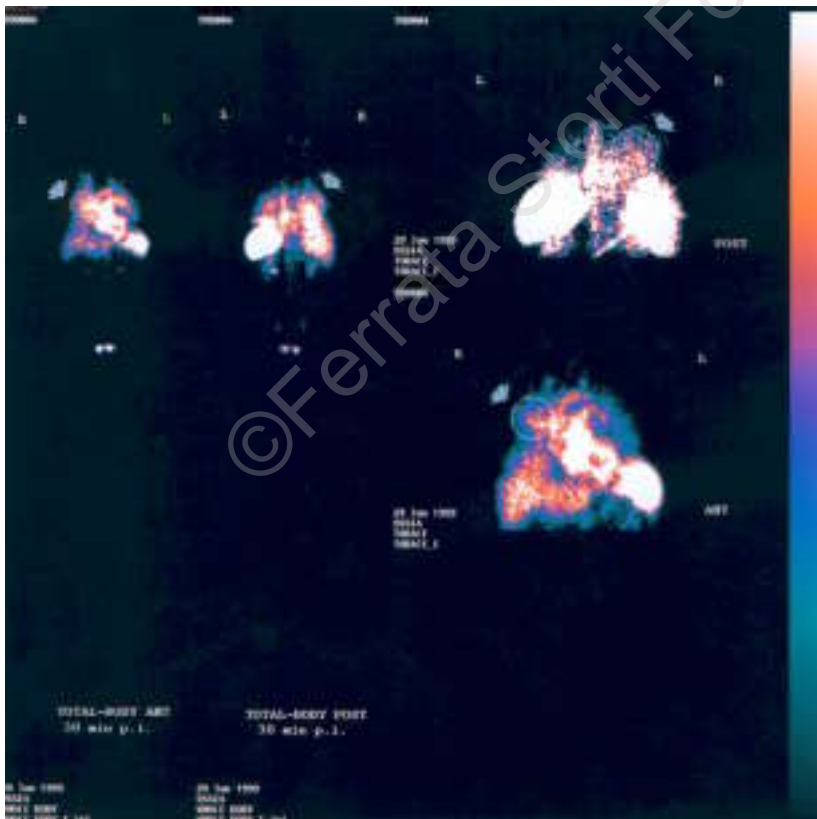
\*Division of Hematology, <sup>o</sup>Division of Nuclear Medicine, Department of Oncology, Transplants and Advanced Technologies, University of Pisa; <sup>#</sup>4th Unit of Anesthesia and Critical Care Medicine, AOP, Santa Chiara Hospital, Pisa, Italy

A female patient presented with fever ( $38.5^{\circ}\text{C}$ ), without evidence of specific sites of infection, followed by progressive neutropenia (nadir value  $0.3 \times 10^9/\text{L}$ ). Antibiotics produced no effects. Mechanisms leading to impaired neutrophil production were excluded. Whole-body scintigraphy with technetium- $^{99m}$ hexamethylpropyleneamineoxime ( $^{99m}\text{Tc}$ -HMPAO)-labeled autologous leukocytes<sup>1</sup> was performed, and a site of leukocyte sequestration localized at the medium lobe (right lung) was detected (Fig-

ure 1). Imaging with  $^{99m}\text{Tc}$ -HMPAO-labeled leukocytes, used to detect abscesses and evaluate cases of fever of unknown origin, is also useful for diagnosing mechanisms of increased neutrophil sequestration/utilization.

### References

1. Lazzeri E, Manca M, Molea N, et al. Clinical validation of the avidin/indium-111 biotin approach for imaging infection/inflammation in orthopaedic patients. *Eur J Nucl Med* 1999; 26:606-14.



**Figure 1.** Scintigraphy with  $^{99m}\text{Tc}$ -HMPAO-labeled leukocytes (30 min after injection). Left side: whole body scintigraphy. A site of leukocyte sequestration (arrows) involving the right lung is shown. Right side: imaging of the lungs. A site of leukocyte sequestration involving the middle lobe (arrows) is shown.

Correspondence: Giovanni Carulli, M.D., Division of Hematology, Santa Chiara Hospital, via Roma 67, I-56100 Pisa, Italy. Phone: International +39-050-992185 - Fax: international +39-050-555497