Motility Society and the Society of Nuclear Medicine. *Am J Gastroenterol.* November 19, 2008 [Epub ahead of print].

Linda C. Knight
Henry P. Parkman
Alan H. Maurer
Temple University School of Medicine
Philadelphia, Pennsylvania

DOI: 10.2967/jnumed.108.050443

Scintigraphy or Multidetector CT Angiography for Suspected Pulmonary Embolism?

TO THE EDITOR: Leonard Freeman's perspective on the use of the ventilation–perfusion scan (*1*) will be a useful resource for those of us struggling to educate our clinicians on the relative utility of scintigraphy and multidetector CT angiography in the diagnosis of pulmonary embolism. Like him, we instituted triage using the clinical history and the chest radiograph findings to determine which modality to use. Those with abnormal radiograph findings or a clinical history of significant preexisting cardiopulmonary disease proceed directly to multidetector CT angiography. In the 3 y or so since the introduction of this system, we have seen a significant reduction in the number of indeterminate results with scintigraphy, but some patients still end up getting the wrong investigation, often as a result of insufficient clinical information being available to the radiologist. We are attempting to remedy this problem by using a specific request card for the investigation of suspected pulmonary embolism, and this remedy is currently being piloted.

I note that Dr. Freeman specifically mentions the presence of fluid, atelectasis, and consolidation on the chest radiograph as disqualifying factors for scintigraphy. As he states, this type of gross change is relatively unusual, and in my experience, indeterminate ventilation–perfusion findings are most frequently the result of preexisting chronic obstructive pulmonary disease. These patients often have chest radiograph findings that are relatively normal, with the only changes being some overinflation and a subtle increase in bronchovascular markings. On the occasions when I have gone ahead with a ventilation–perfusion scan slightly against my better judgment because the chest radiograph showed only minor changes of chronic obstructive pulmonary disease, I have nearly always regretted it, the resulting images showing widespread matched defects of ventilation and perfusion. If the vetting process is delegated to radiologists not directly involved in the pulmonary embolism imaging service, it is important that they realize that consolidation, atelectasis, and effusions are not the only findings that make patients unsuitable for scintigraphy, or these radiologists may give the all clear to chest radiographs showing quite marked changes of chronic obstructive pulmonary disease.

REFERENCE

1. Freeman LM. Don't bury the V/Q scan: it's as good as multidetector CT angiograms with a lot less radiation exposure. *J Nucl Med.* 2008;49:5–8.

Bob Bury
Leeds Teaching Hospitals Trust
Leeds, United Kingdom

DOI: 10.2967/jnumed.108.050419

REPLY: I am most appreciative of Dr. Bury's kind comments about my views on the use of ventilation–perfusion scintigraphy versus multidetector CT angiography for the study of pulmonary embolic disease. It appears as if we are in accord on most issues; most importantly, the overuse of CT angiography with its associated excessive radiation exposure, particularly to the female breast. The use of the plain chest radiograph for determining which modality to apply has worked quite well.

The one area where we appear to have some difference is how to handle the patient with chronic obstructive pulmonary disease who may have only minimal radiographic changes of "overinflation and a subtle increase in bronchovascular markings." The frequent ventilation–perfusion scintigraphy result of multiple matched defects that troubles Dr. Bury has not been a problem for us. This combination of findings clearly falls into the low-probability category. To my knowledge, we have not had any problem or adverse feedback from our clinicians in calling these studies low probability. An ongoing retrospective review of over 1,200 ventilation–perfusion studies that were performed in 2007 shows that we gave an "intermediate" or "indeterminate" interpretation in less than 5% of our examinations.

I would like to refer Dr. Bury and other interested parties to a recent prospective comparison of ventilation–perfusion scintigraphy and CT angiography by Anderson et al. that showed a similar outcome for the 2 procedures (*1*). This comparison should also be of great assistance to nuclear medicine physicians and radiologists who are trying to convince their clinicians to cut down on the excessive use of CT angiography in studying patients with suspected pulmonary embolic disease.

REFERENCE

1. Anderson DR, Kahn SR, Rodger MA, et al. Computed tomographic pulmonary angiography vs ventilation-perfusion lung scanning in patients with suspected pulmonary embolism: a randomized controlled trial. *JAMA.* 2007;298:2743–2753.

Leonard M. Freeman
Montefiore Medical Center
Bronx, New York

DOI: 10.2967/jnumed.108.050450