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An Unexpected Clotting Problem with I-125-Labeled Fibrinogen (Human) Sensor

We would like to point out a complication that may arise from injection of I-125-labeled fibrinogen* for detection of deep-vein thrombosis.

A study was ordered on a patient with dermatomyositis who had diffuse soft-tissue edema. Venipuncture was difficult in this patient, and when the technologist finally located a vein, he noticed that there were a number of small clots in the syringe. Because of this, no injection was made. The sample was brought back to the laboratory where a closer examination revealed a number of small fibrinous clots, none measuring larger than 1–2 mm. Unless one looked very closely, they would be difficult to see. On the day before this experience, another patient had been injected with material from the same lot number and no clotting was noted at that time.

Although there is no proof, we submit that the clotting occurs secondary to release of tissue thromboplastic substances into the syringe during difficult venipuncture. If so, this would represent a complication of technique and not of the material itself. The package circular included with the kit does not mention any warning concerning difficult or prolonged venipuncture.

As a result of this experience we have changed our injection procedure for this study. The I-125-labeled fibrinogen is now injected through a butterfly infusion set in which the 30-cm plastic tubing has been prefilled with normal saline. A 3-ml, saline-filled syringe is attached to the butterfly and venipuncture is performed. The tubing is then flushed with saline, and the syringe exchanged for that containing the radiotracer. This is injected, the saline is re-attached, and the line again flushed.

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Visualization of Hepatic Lesions with Upright Views

The idea of Mettler and co-workers (*1*) that reduction of hepatic motion would improve detection of hepatic lesions by scintigraphy is a good one. I wish they had shown data indicating whether gated hepatic scans would improve lesion detection. They did show, by means of gated imaging, that hepatic motion was least evident in the upright position. However, this was demonstrated on only one or two normal volunteers; no data were given to indicate whether hepatic motion would be small in the upright position in all or most normal people, or whether this would be true in patients with various diseases. For example, in patients with dyspnea or tachypnea, hepatic motion might be increased in any position. It is also unfortunate that the sitting position did not have the same effect of reducing hepatic motion as did the upright position. Many patients who cannot be scanned in the upright position could probably be scanned in the sitting position and thereby benefit from reduced hepatic motion if this had been the case.

In Fig. 1A and B, Mettler et al. proposed to indicate the improvement in hepatic lesion detection when liver scanning is performed in the upright position in contrast to the supine position. This may in fact be true, but their illustrations do not support this theory. Figure 1A shows an anterior view of the liver (incorrectly labeled AP supine), in which the intensity setting has been increased to the point of producing "white-out," thereby obscuring any lesions that might have been present. Figure 1B shows the same hepatic image at a lower intensity setting, now demonstrating several "cold" lesions. The authors suggest that the reason for lesion detection in Fig. 1B is that the image was obtained in the upright position. Since Fig. 1A is so much more overexposed than Fig. 1B, they cannot attribute the difference to the patient being scanned in the upright position. This work could have been greatly improved by the performance of more studies on normal patients or patients with disease to determine whether hepatic scanning in the upright position is indeed preferable.

No broad conclusions can be drawn from information derived from one or two patients, especially when changes in lesion detectability can be accounted for by technical factors other than position. I hope that the paper under discussion does not lead to the widespread use of hepatic scanning in the upright position, until further verification has been obtained.

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