Subclavian Vein Obstruction Demonstrated with Thallium-201

TO THE EDITOR: Although deposition of thallium-201 (201Tl) in arm veins has been noted for many years (1), the mechanism and dynamics of this accumulation is unknown. The recent report by Drs. Gal and Port (2) reinforces the fact that when 201Tl arm vein uptake occurs, it can be significant enough to reduce myocardial activity and interfere with clinical interpretation.

Venous 201Tl activity can also produce image artifacts. Recently, a 65-yr-old white male with a past history of lung carcinoma and left pneumonectomy was referred for a 201Tl myocardial scan. The 201Tl (2.2 mCi) was injected at peak exercise through a left arm vein. The anterior images (Fig. 1) were remarkable in that in addition to myocardial and right lung activity, there were venous collaterals partially overlying the heart. Delayed images at 3 hr show very little residual venous activity. In view of the venous artifact, a repeat 201Tl study was performed with a right arm injection and there was no venous activity. This case illustrates that 201Tl uptake in veins may be a transient phenomenon and may be accentuated by relatively low flow rates as in venous collaterals.

References

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Anterior View on Bone Scan for the Early Diagnosis of Bacterial Lumbar Spondylitis

TO THE EDITOR: The value of the bone scan in the early diagnosis of infectious spondylitis has already been demonstrated (1–3). However, at the lumbar level the accumulation of the bone-seeking agents can sometimes occur without being noticed in the posterior view, while this can easily be seen in the anterior view. The following observation illustrates the importance of systematically recording an anterior view of the lumbar spine when the diagnosis of spondylitis is suspected. The bone scan of the patient was performed 3 hr after the i.v. administration of technetium-99m hydroxyethylene diphosphonate (HMDP) (8 MBq/kg). The blood-pool and delayed images were recorded with a large field-of-view gamma camera.

A 50-yr-old woman was hospitalized for acute febrile lumbar pain 2 mo after hysterectomy for fibroma. Sedimentation rate was 103 mm after 1 hr. X-ray studies showed disk compression at L4-L5, with major lateral osteophytes without erosion of vertebral plates; no reference films were available for evaluation of the duration of compression. On the bone scan, the anterior view of the lumbar spine confirmed the suspicion of spondylitis. It revealed two strips of uptake, more intense on the right side, separated by a cold linear area (Fig. 1A). The posterior view showed a nonspecific image with only a slight increase in the uptake by the L4 inferior plate, but also other focal uptakes due to the advanced lumbar arthrosis (Fig. 1B). The discal puncture was carried out on the right side, i.e., on the side of the more intense uptake; it yielded a bloody, serous fluid from which a Staphylococcus epidermidis was isolated. This strain coagulase negative responded to almost all antibiotics. The patient was treated with oxacillin and sismicin for one month then switched to virginiamycin and rifampin for the following 2 mo. At this time, a second bone scan (not shown) was performed, showing that the L4-L5 uptake had slightly decreased.

The lumbar anterior view on the bone scan is of great value in the diagnosis of infectious lumbar spondylitis. First, it reduces the number of false negatives as shown in this case. We have also observed two additional cases in which the posterior view of the bone scan had been interpreted as almost normal or nonspecific, while the anterior view revealed a significant uptake pattern. Second, it gives much better im-

REPLY: Belzberg and Kiess present an interesting example of venous uptake of thallium-201 (201Tl) apparently related to venous obstruction on the same side as the thallium injection. We have no experience with this type of patient. None of the patients reported in our study had any surgery, trauma, or thrombophlebitis that might have caused venous occlusion. This report suggests that in patients with venous obstruction or a history of unilateral carcinoma of the lung or chest surgery, 201Tl should be injected on the contralateral side.

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