Since Syed has considered an 8-mCi dose to the patient, the resulting absorbed-dose estimates are considerably high.

Second, when a radionuclide with a physical half-life of 2.2 days is considered, the biologic half-life should be taken into account to estimate the absorbed dose. Apparently, Syed did not consider this. If we assume that our biologic distribution data obtained after intravenous administration of ^{203}Pb-acetate in rats are valid for humans, we find 15% of the administered dose has a biologic half-life of 12 hr whereas 30% has 12 days with a total initial uptake of 45% in the bone. Taking this into consideration, we estimated the absorbed dose to the skeleton using the same method followed by Syed to be 0.6 rads/mCi. We also found a biologic half-life of 16 hr for the activity in the liver with an initial uptake of 10% of the administered dose. Then the effective half-life is 12 hr reducing the liver-absorbed dose by a factor of 4 to 0.3 rads/mCi.

The assumption made by Syed that the spleen uptake is at least 5% of the administered dose seems to be unreasonable. Durbin, et al (*1*) have reported less than 1% initial uptake by the spleen and Scott, et al (*2*) have quoted less than 0.5% of the total activity after 1 day. Although our animal data for the spleen are incomplete, we also found much less than 0.5% after 2 days. Therefore, 5% uptake by the spleen appears unlikely unless proven otherwise. Then, taking 1% spleen uptake and assuming no biologic excretion, the absorbed dose can be estimated as 0.8 rads/mCi.

Considering a 2-mCi dose to a 70-kg patient and if our biologic data in rats are valid for humans, the absorbed dose to the skeleton is 1.2 rads, 0.6 rads (T_{eff} = 1.7 days) for the whole body, 0.6 rads for the liver, and about 1.5 rads (T_{eff} is taken as 2.2 days) for the spleen. If the activity in the liver, spleen, and kidneys is reduced by 50% with the use of HEDTA chelate as suggested by Syed, the absorbed dose for these organs will be reduced by another factor of 2. Then these are well within the accepted levels and are less than the doses due to some other radionuclides suggested in the literature for bone scanning.

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ARTHROSCINTIGRAPHY OF KNEE

I wish to comment concerning the article by Drs. Pozderac and Good (Arthroscintigraphy in acute synovial rupture of the knee, *J Nucl Med* 15: 7–9, 1974). First of all, just because the isotope leaks from the knee joint posteriorly does not necessarily mean that a posterior leakage is causing the patient's symptoms. In my experience with arthrography (I personally perform over 900 procedures a year) knee joints in a small percentage of normal people have a tendency to leak spontaneously when the patient exercises. The leakage is in the same area as is seen on the scintigram.

Second, a knee joint may leak posteriorly yet the patient still has deep-vein abnormalities. I have had one such patient in the last year. A venogram would be most helpful in evaluating patients such as the one presented in this article.

Third, it is stated that because of the small volume of radionuclide injected into the joint, pain caused by overdistention of the knee joint as may occur with gas arthrography is avoided and the likelihood of iatrogenic synovial rupture is also reduced. Five cubic centimeters positive contrast material injected into the knee joint should cause no more overdistention and no more likelihood of rupture than the small amount of isotope used. Even when one uses 30 cc of contrast material, it can be easily aspirated after a study (and 30 cc doesn't cause pain).

It is noted that the study was confirmed with an air arthrogram before treatment. Perhaps the air arthrogram was all that was needed although the positive contrast method would be even more accurate.

In summary, it seems more appropriate to study patients such as the one who presented with a positive contrast arthrogram as well as positive contrast venogram.

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