
To evaluate three-views hepatic scintigraphy with gammacamera as a routine examination, we compared SOL on hepatoscintigram with the corresponding findings on abdominal angiogram. Gammacamera Model GCA 401 was used for hepatic scintigraphy. Fifteen minutes after injection of Tc-99m hepatoscintigram was taken on anterior, posterior and rt.lateral view. Forty cases who undergone hepatic scintigraphy and abdominal angiography were studied.

1) Twenty seven cases (67.5%) had corresponding findings on both hepatoscintigram and abdominal angiogram as to SOL.
2) Six cases (15%) were false positive, and three cases (7.5%) were false negative on hepatoscintigram compared with findings on abdominal angiogram.
3) Most of these false positive cases had chronic liver disease. These cases had no abnormal findings of all three views on hepatoscintigram.
4) In the false negative cases, a size of localized lesions in the liver was below 2 cm in diameter.


We have reported the automated computerized pattern characterization of off-line data of liver scintigrams, which were taken on Polaroid films and devined into a computer through flying spot scanner and A/D converter. The automated computerized pattern recognition and differential diagnosis have been also reported with good results. This time, we report the automated computerized pattern characterization of on-line data of liver scintigrams, which are taken through a scinticamera minicomputer on-line system. The characteristics of our algorithm is in its contour extraction of liver. We used smoothing, threshold holding, modified merging technique and two dimensional matching technique, in which contours of liver and spleen are extracted in anterior view and posterior view liver scintigram referring to each other informations using two dimensional matching techniques.


Evaluation of metabolizable HSA-MM as a liver and spleen imaging agent were studied. HSA-MM were commercially obtained, and each subjects such as 2 normal volunteers and 48 patients with various liver diseases received 4 mCi i.v. by bolus injection. Purity of labeled HSA-MM was shows similar to those of Sn-colloid and phytate by paper chromatography. (A) Following results was obtained in 2 normal volunteers; (1) Blood clearance at 20 min after injection were as follows; HSA-MM 4-6.6%, Sn-colloid 6.5% and phytate 17.6%. (2) Maximum liver uptake was found at 8-9 min by HSA-MM, 9 min by Sn-colloid and 10 min by phytate. (3) Spleen-liver ratio was shows 0.5 -0.9 with HSA-MM, 0.6 with Sn-colloid and 0.1 with phytate. (4) Time activity curves with HSA-MM, Sn-colloid and phytate were expressed as a fraction of the 30 min uptake.

Liver scintigraphy is widely employed as a screening test in various liver diseases, but only a few reports on its diagnostic efficacy have appeared in the literature. In order to obtain a quantitative value of diagnostic efficacy on the static liver image, 404 cases with confirmed diagnoses were collected from 8 different institutions which include 148 normals and 138 SOL. 

The radiotherapeutic used are 99m-Tc phytate of 378 cases, 99mTc Sn colloid 19 cases and others 7 cases. Imaging instruments employed are Anger camera of 309 cases and scanner of 95 cases. Each case consists of three images, A-P, P-A and right lateral, and the images were read by 11 nuclear medical specialists of different institutions. Results of interpretation are analyzed by ROC curve for the detection of space occupying lesions. The 11 doctors who read the images showed remarkably similar ROC characteristics. Diagnostic efficacy is significantly low in the detection of lesions smaller than 3 cm compared to those larger than 3 cm.