protein, A/G ratio, ZTT, TTT, CCF, BSP, SGOT, SGPT) were within normal limits.

Measure of Scintigram: As shown in the figure, the angle L by AC (a tangent of upper edge) and BC (a tangent of lower adge), the angle H by DC and the horizontal line, the distance of A and B (1) were measured. D is mid-point of 1. M is centerline of the body. 1 is pararell to M.

Result:

L—41.6±3.7° (standard deviation) 30 cases (75%)

H—5.4±5.2° (standard deviation) 26 cases (65%)

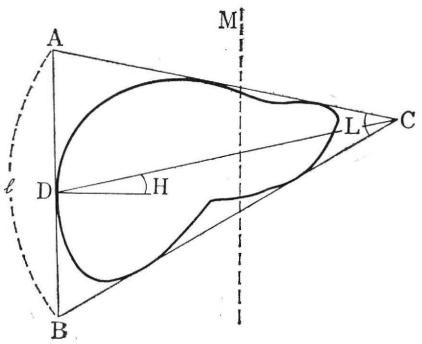
I—17.0±1.1 cm (Standard deviation) 34 sases (58%)

Both L and 1 within standard deviation 28 cases (70%)

Both L and H within standard deviation 22 cases (55%)

Visualization of the spleen—4 cases were (±) degree, other 36 cases showed negative.

Conclusion: ^{198}Au liver scintigram of normal 40 cases were measured. Among these measurements, L, 1 and visualization of the spleen, were available for the defferentiation of normal and abnormal ^{198}Au liver scintigram.



Review of 1,000 Scintigrams of the Liver

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From May 1962 to October 1966 were performed 1,130 scintigrams in our department and objective confirmation of the diagnosis was obtained in about 400 instances. Objective diagnosis was established by autopsy, laparoscopy, laparotomy and follow-up over one-year period on the basis of the clinical course and biochemical datas.

In this series, four scintigrams recorded simultaneously, each with cut off level of 20, 35, 45, and 55%. This multi-cut-off technique has been useful to increase the accuracy of diagnosis.

Scintigrams were classified into 25 patterns and studied the relationship of the pattern to the disease.

In review of those patterns which had over 20 instances, the highest diagnostic probability was obtained in "multiple filling defect." In 31 instances demonstrated multiple filling defect, 29 (93.5%) were proved to have cancer of the liver.

Second, of 25 instances with huge filling defect, cancer of the liver was proved in 23 (92%).

In 35 instances of atrophy of the right lobe and hypertrophy of the left lobe with moderate spleen visualization, 32 (91.4%) demonstrated liver cirrhosis. In 39 normal patterns, 31 (79.5%) was proved to be normal.

In a review of patterns with fewer instances, there were 8 patients of hypertrophy both lobes with mottled appearance, in all of which cancer of the liver was present.

lobe with marked spleen visualization were

All 3 instances of the hypertrophy of left Banti's syndrome.

In contrast, low diagnostic probability is observed in those patterns, hypertrophy of the left lobe, hypertrophy of the left lobe with mild spleen visualization and hypertrophy of both lobes with moderate spleen visualization.

The degree of the spleen visualization is closely related to liver cirrhosis. In 60 instances of postnecrotic cirrhosis, moderate

spleen visualization (ranging from 5 to 15 cm in longiitudinal diameter) appeared in 50 patients (83.3%). On the other hand, in the present series there were 82 instances of moderate spleen visualization and 63 (76.8%) of these had liver cirrhosis in some degree.

Basic Study of Visualization of the Spleen in ^{198}Au Liver Scintigram

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The visualization of the spleen in ^{198}Au liver scintigram is frequently noted in various liver diseases including liver cirrhosis and occasionally in accute hepatitis. Our studies aim at clarfying the mechanism of this visualization in the liver scanning.

No close relationship was seen between spleen scanning using ^{51}Cr labeled heat-damaged red cells and visualization of the spleen in ^{198}Au liver scintigrams. However, clearance of ^{51}Cr from the blood seemed to be closely correlated with the visualization of the spleen in ^{51}Cr spleen scintigram.

In the rats, in which fairly large amounts of Au colloid were infused intraverously, the uptake ratio of the spleen and bone mallow to the liver showed to be considerably high: those Au colloids, once accumulated in the spleen, seemed to be discharged again into the blood stream for about 3h after the infusion.

In the carbon tetrachloride treated rats, the clearance of the intravenously infused Au and of indian ink colloids from the blood, showed to be gradualy increased for at least 48 hours after the intoxication, and the uptake of the colloid in the spleen was found to be increased. In the chronic CCl_4 induced liver injuries, the clearance of the colloids from the blood was decreased with increased uptake of the spleen. No definite difference in the splenic uptake per gram of the spleen was noted between the acute and chronic liver injuries. However, the spleen in chronic liver injury was greater in weight than in acute one. On the other hand, the hepatic uptake of the colloids decreased with no changes of the weight of the liver in the chronic liver injuries.

These findings might suggest that the uptake of the colloids by the RES of the liver is decreased by the parenchymal injuries and the increased uptake by the splenic RES contributes to the visualization of the spleen in the liver scistigram.

Other factors such as blood flow in the visualization of the spleen have been investigated.

Spleen Visualization in Liver Scanning by Colloidal Radiogold with Refference to the Clinical Evaluation of Liver Diseases

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The diagnostic value of the spleen visualization in liver diseases were examined using ^{198}Au collid. The diagnosis of the patients was based on histological findings by liver