three types, based on half life and thrombin time.

1st group: half life of plasma disappearance is short and thrombin time is delayed; 2nd group: half life is short but thrombin time is normal; 3rd group: both of them are normal.

1st group contained liver cirrhosis, nephrotic syndrome, and malignant tumor, etc.; 2nd group, aortitis syndrome, and collagen-like disease; 3rd group, normals. There seem to be certain characteristics among the groups about ^{131}I-fibrinogen plasma disappearance and thrombin time. But euglobulin 'ysis time was indefinite in these groups.

Between the 1st and the 2nd group, we found some difference of half-life of radioactivity remaining in a body. In 1st group, half life of plasma disappearance as well as remining radioactivity was short, but in 2nd group half life of remaining radioactivity in body was not so short inspite of plasma dsappearance being as short.

Conclusions: There seem to be two different processes of catabolism of fibrinogen. In 1st group, fibrinogenolytic process plays a greater role, but in 2nd group, coagulation process plays a greater role, although we must consider about tissue factors. Fibrinolytic activity was less related to fibrinogen catabolism. Investigations will be continued on.

X. Neoplasm

The Possibility for Delineation of Human Tumors with Labeled Tumor Affinity Compound

K. Hisada, T. Hiraki, H. Kawanishi, S. Ohba and S. Rikimaru

Department of Radiology, School of Medicine, Kanazawa University, Kanazawa

There is some limitation in the size of a space occupying lesion detectable by scintiscanning (scintigraphically negative delineation) as in liver scanning, due to radioactivity in the surrounding tissue and respiratory movement of the organ and to other factors. In the scintigraphically positive delineation of a tumor, on the other hand, there is far less limitation. The image of the tumor itself might be enlarged by respiratory movement. Theoretically extremely small tumors should be detectable provided they are much more radioactive than the surrounding tissue.

Out of 14 compounds examined in a series of animal experiments using Yoshida sarcoma, ^{131}I-fibrinogen showed the highest affinity for tumorous tissue compared with surrounding normal tissue. ^{131}I-Albumin, ^{131}I-globulin and ^{197}Hg-neohydrin showed relatively high affinity for tumorous tissue next to ^{131}I-fibrinogen and ^{131}I-thyroxine, ^{131}I-triiodothyronine and ^{75}Se-methionine lower affinity and ^{131}I-PVP no.

One mCi of ^{131}IHSA was administered intravenously to each of 12 patients with malignant tumors and they were scanned at 3, 24 and 48 hours. Four of the 12 cases showed good tumor delineations by scanning. These included cancer of the left maxillary sinus (squamous cell carcinoma), a focal metastatic lesion of the left lower femur from pulmonary cancer (squamous cell carcinoma), a giant cell tumor of the left femur (Grade II) and cutaneous metastasis of the left lower leg from pulmonary cancer (undifferentiated cell carcinoma).

Fair tumor delineation was obtained in two cases, one of cancer of the larynx (squamous cell carcinoma) and the other of reticulum cell sarcoma of the neck.

Poor delineation was seen in three cases, one of pulmonary cancer (undifferentiated

cell carcinoma), the second of hepatic cancer (hepatocellular carcinoma) and the third of cancer of the left kidney (adenocarcinoma).

No scintigraphic delineation was obtained in three cases, the first of metastatic cancer of the pelvis from a parotid tumor (malignant mixed), the second of metastatic cancer of the pelvis from pulmonary cancer (adenocarcinoma) and the third of Virchow's node metastasis of ovarial cancer (adenocarinoma).

Thus we succeeded in obtaining positive delineation of tumors in the thin part of the body, namely the extremities, head and neck. As for malignant tumors of the trunk it is extremely difficult to obtain positive delineation with the 1 mCi dose of ^{131}IHSA and a scanner with a 2 inch crystal detector.

In addition to ^{131}IHSA, 1 mCi of ^{203}Hg neobydrin was administered intravenously to two patients. Good tumor delineation was obtained in the case of right parotid tumor and poor delineation was seen in the case of pulmouary cancer (squamous cell carcinoma).

Studies on the Lymphatic Vessel Injection Under Gastro-Serous Membrane in the Therapy of Gastric Cancer

J. YANADA

Department of Surgery, Kyoto Prefectural University of Medicine

In addition to the évidement operation of lymphatic glands in a radical operation for gastric cancer, the author has tried to inject the radiocolloid (^{198}Au, ^{177}Lu and ^{90}Y) into the lymphatic vessel under the gastro-serous memberane prior to gastrectomy.

The radiocolloid injected was taken mostly in the injected area and in the lymph nodes araund the stomach. The radiocolloid has affinity to the reticuroendothelial system such as liver and spleen. Using the therapy to the gastric cancer, the radiocolloid needs a large quantity. If the radiocolloid damages the reticulo-endothelial (cells) its curative effect may reduces and therefore, the author carried out the examination of reticulo-endothelial system, by using of Kongorot method and white cell caluculation.

On the first group (0.01 mc/kg, intravenous injection) the reticulo-endothelial function and white cell counts were not changed.

On the second group (0.05 mc/kg, intravenous injection) the reticulo-endothelial function and white cell counts were seen their decrease in the week after injection but were recovered gradually.

On the third group (0.1 mc/kg, intravenous injection) its function decreased in a day after injection and in the week most decreased.

Clinically the author tried to inject the radiocolloid into lymphatic vessel under the gastro-serous membrane prior to gastrectomy. Microradioautogram of the lymph nodes with metastasis of cancer, which were removed after the radiocolloid injection, revealed the presence of enouph radioactivity in these lymph nodes. Therefore, even if lymph node metastasis of cancer cannot be removed completely by évidement operation, therapeutic effects may be produced by the radioactivity in the lymph node itself and by the cross irradiation of radioisotopes taken into the circumfernential lymph system.