

of ^{32}P . The cancer tissue showed a high concentration of ^{32}P in the autographic localization while the noncancerous tissue did not.

The relationship of the cancer tissue to the localization of ^{32}P is under study.

Effect of Sexual Hormones on the Uptake of Radioactive Phosphorus Into Mammary Carcinoma Tissue

— In vitro Test for Prediction of Hormone Dependency

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It has been well established that some of mammary carcinoma are dependent on hormones. According to our experience, after patients with mammary carcinoma had each been treated with endocrine ablative therapy, only half of them were effective. Therefore, the prediction of hormone dependency of individuals before definitive surgical therapy should be of great importance.

To know the hormone dependency, an in vitro test by incorporation of radioactive phosphorus into nucleic acids of breast cancer cells under the influence of estradiol- 17β and testosterone was investigated.

There were two types of mammary carcinoma classified; one was accelerated uptake of ^{32}P by the administration of estradiol and effective to ablative therapy, and the other was not accelerated and ineffective.

The influences of testosterone were not so remarkable as to those observed on estradiol. In the almost cases, the reverse results were obtained.

Accordingly, this in vitro test using estradiol by the uptake of radioactive phosphorus is considered to be useful in the preoperative evaluation of hormone dependent mammary carcinoma.

Tumor Scanning with Radioisotope Labeled Tumor Affinity Compounds

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On a scintiscan tumor is delineated as a filling defect conventionally (negative delineation) and there is some limitation in the size of the defect to be detected due to various factors. In scintigraphically positive delineation of a tumor, theoretically extremely small tumor should be detectable provided they are much more radioactive than the surrounding tissue. For this reason, a series of basic experiments has been carried out on Yoshida sarcoma-bearing rat using 27 kinds of radioisotope substances. Among these substances, ^{131}I -antifibrin antibody, ^{131}I -fibrinogen, ^{131}I -fibrinolysate, ^{131}I -albumin, $^{99\text{m}}\text{Tc}$ -albumin, ^{197}Hg -chlormerodrin, $^{203}\text{Hg}\text{NO}_3$, ^{203}Hg -

hematoporphyrin- Na_2 and ^{131}I - γ -globulin were proved to have affinity to solid tumor transplanted subcutaneously, and these several materials have the value of clinical trials. However, ^{197}Hg -chlormerodrin renders the detection of deep situated lesions difficult because of marked absorption of the photons by overlying tissues. Moreover, radioactive compounds having a high affinity to the liver and kidney are not suitable for scanning of the abdominal tumor.

We have reported tumor scanning of the patients using ^{131}I -RISA previously. $^{99\text{m}}\text{Tc}$ was substituted for ^{131}I as a labeling nuclide of albumin. 6 patients with cancer were