3) The scintiscan can be of significant value in evaluation of patients with suspected or early stage of bone tumors, even if the patients had negative skeletal roentogeno- grams. The profile scanning especially, would be very useful as a screening procedure to find out bone lesions with ^{85}Sr.

Diagnosis of Hormones Responsible for Breast Cancer, and Hormonal Activity in Serum

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A simplified method for determination of hormones responsible for breast cancer was studied using tumor slices in vitro. ^{32}P-uptake into nucleic acid of tumor slices was activated by addition of dependent hormones, and was suppressed by sensitive hormones. Spontaneous and cortisol. Responsible hormones for breast cancer were varied individually. This method is manifestation of hormonal influence for tumor itself. From these results, the postoperative desirable treatment for breast cancer were suggested.

Etrogens, androgens activity in serum were determined by use of castrated rat uterus and prostata. Cortisol activity were also determined by castrated-adrenalectomized rat liver. The RNA-polymerase activity or protein synthesis of these organs were activated by the existence of steroid hormones. Determination of hormonal activity in serum is difficult by other method, and needed a good deal of serum, so the present method is useful by 2 ml serum test. But enzymatical activity except hormones, protein effects and usual stock of castrated animals are remaining problems for this method.

Clinical Application of Radioactive Isotopes in the Diagnosis of Breast Cancer

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The application of ^{33}P in the diagnosis of breast cancer:

To differenitate between the malignant and the benign tumors, 79 breast tumor patients were given radioactive phosphate solution intravenously at the dose of 6 to 8 μCi per kg body weight. The ^{32}P incorporations by the tumor or the contralateral normal breast were assessed by means of a Geiger-Müller counter placed over the skin surface. Both malignant and benign tumors were divided into three groups from the percent increase in the ^{32}P incorporation by the tumor over the control. Thirty-two malignant tumors comprised 23 tumors of the group A ($>$30%), 3 of group B (20~30%), and 6 of group C ($<$20%), while 47 benign tumors did 4 of group A, 6 of group B and 37 of group C. Six malignant tumors of the group C were consisted of the 2 small ($<$1 cm in diameter), the 3 deeply located and the one scirrhous tumors. Two of the 4 benign tumors of the group A showed huge fibroadenoma and other 2 did premenstrual mastopathia. The minimum diameter of cancer detected by this method was 1.2 cm. The results would lead to the conclusion that it is not so worthy to apply this method to the diagnosis of early breast cancer.