The scintigram of carcinoma revealed that cold nodules were seen in 87.1 per cent, warm nodules in 12.9 per cent and hot nodules in none. In adenoma, on the other hand, cold nodules were seen in 68.8 per cent warm nodules in 29.4 per cent and hot nodules in 1.8 per cent. Cold nodules constituted the majority of carcinoma and adenoma, but a 20 per cent difference was thus noted between both lesions. Consequently, it is rather difficult to differentiate between these two by the scintigram alone. Generally speaking, however, cold nodules may be considered to present definite indications for surgery.

Moreover, in view of the fact that even a small carcinoma frequently shows a cold nodule on the scintigram, the possibility of such a small cold nodule being malignant is much greater. On the other hand, if a large nodule shows warm on the scintigram, this nodule may usually be considered benign. There is scarcely any possibility of a hot nodule being carcinoma.

When the site of nodule in the thyroid is compared between carcinoma and adenoma, the lower pole of the lobe was most frequently involved in both groups except for large tumors occupying the whole lobe on one side. Since the carcinoma involves the upper pole of the lobe and the isthmus more frequently than adenoma, a cold noduls located at the upper pole of the lobe and the isthmus has a greater chance of being malignant. As described above, the scintigram appears to be useful in the differentiation between adenoma and carcinoma, and may provide useful information for the management of thyroid nodules.

The scintiscanning with radioactive iodine is also excellent clinical examination for the diagnosis of agenesis, dysgeneses and/or ectopia of the thyroid. Our clinical data of substernal goiter, ectopic thyroid and aplasia of right lobe of the thyroid were presented. These anomalies revealed frequently a mass at the anterior neck and should be differentiated with functioning autonomus thyroid nodule on the scintigram. This can be confirmed by demonstrating radioactivity in previously nonfunctioning parenchyma following administration of TSH.

Evaluation of Cardiovascular Diagnosis by Using a Scinticamera

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Studies were carried out on 246 patients with congenital heart disease (92 cases), acquired heart disease (62), aortci aneurysm (31), obstructive disorder of peripheral artery (9), normal cases (39) and others by a scintillation camera. This method has been used to demonstrate hemodynamic changes in the heart and the vessels by pho/gamma scintillation camera with a 1600 ward memory system after administration of ^{99m}Technetium or ^{113m}Indium through peripheral vein. The conventional dose was 10mCi in a 3 to 5cc volume of normal saline solution. In the cases of A.S.D. and V.S.D., a dilution curve of a right cardiac area showed distinctive double peaks curve caused by recirculation, and with comparison of the dilution curves of left and right ventricle areas a shunt volume correlative to a result from cardiac catheterization was estimated. In some cases rarely the double peaks dilution curve was not seen, however, in such a case diagnosis was also possible from phenomenon such as distension of build-up time and increase of a ratio of C_2 over C_1 (C_1 is count rate at the curve reach peak and C_2 is count rate at twice of peak time). This cal-

culation of analysing the curves is also useful to estimate clinical severity of valvular diseases.

In acquired heart diseases, decrease of peak concentration and distention of (Disappearance time + Build-up time) were seen in the dilution curve and from that clinical severity could be decided.

In aortic aneurysms, detection of the lesion was very easy on a scintiphoto just like as on a traditional angiography and also estimate of condition of lesion could be carried out by analysis of radioistope counts in the lesion.

Thus the scintillation camera has been used successfully to construction of the dilution curve in each part of the heart and vessel which was hard to construct from a traditional radiocardiogram. This advantage is very profitable for qualitative and quantitative analysis of heart disease.

Scintigraphic and Angiographic Findings in Patients with Tetralogy of Fallot after Blalock-Taussig's Anastomosis

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Pulmonary perfusion scan is a safe and effective method for the evaluation of the distribution of pulmonary blood flow in various cardio-respiratory diseases.

In this study, we performed pulmonary perfusion scans on 9 patients with Tetralogy of Fallot who had undergone Blalock-Taussig's anastomosis. Administration of ^{131}I-MAA (about 0.3mCi) and scannings were made in all patients in the supine position. The results were compared with those of pulmonary angiographies which were done in all cases one or two days apart from the day of the scanning.

In 6 out of 9 patients pulmonary perfusion was significantly decreased in the lung on the side of anastomosis and in 2 it was symmetrical, whereas in one pulmonary blood flow was rather increased in the lung on the side of anastomosis. In contrast to the scintigraphic findings, pulmonary angiography showed symmetrical pulmonary blood flow in 6 out of 9 patients and decrease of flow to the lung on the side of anastomosis was seen in only 3 patients.

In one patient, who had markedly decreased perfusion to the left lung, the side of anastomosis, by scan, pulmonary angiography revealed near complete occlusion of the main pulmonary artery of the same side. In other patients, whose lung scans showed relative decrease of ^{131}I-MAA distribution in the lung on the side of anastomosis, angiography usually revealed functioning anastomosis.

As reported by Friedman et al, pulmonary perfusion scan is helpful for the assessment of patency of anastomosis after Blalock-Taussig's operation. Our findings are also in accord with their results, however, one has to be aware of the possibility that in some patients decrease of perfusion seen in the scan may not be due to the function anastomosis but due to other factors such as thrombotic occlusion of pulmonary trunk on the side of anastomosis as seen in our case.