

the internal carotid and mean CBFr was calculated by 2 compartmental analysis of Rasmussen and Ingvar. It was 50~60 ml/100gr/min. in normal group and 28.7 ml/100gr/min. in "Apallisches Syndrom" group. Blood flow to contralateral hemisphere was often observed in "Apallisches Syndrom" group. In cases with brain tumor, no close interrelation was noted between increased intracranial pressure and decrease in mean CBFr as some investigators suggested.

4. In many cases with marked shift of the

anterior cerebral artery and with intensive hypervascularity high contralateral counting was demonstrated. In such cases, therefore, even if initial contralateral counting is higher than 43%, existence of cross circulating blood flow should not always be concluded.

5. Increase of cross circulatory blood flow to contralateral hemisphere in "Apallisches Syndrom" group seems to be due to malfunction of the circle of Willis and marked brain atrophy.

### Cardio-vascular Bed Scintiphotography Using $^{99m}\text{Tc}$ -pertechnetate and its Metabolic Utilization

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Scintiphotos of cardiovascular system can be taken by intra-venous injection of  $^{99m}\text{Tc}$ -pertechnetate using scinticamera. It is possible to visualize vein, heart and artery as soon as the radioisotope is injected. However, cardiovascular bed scintiphotography can be taken before  $^{99m}\text{Tc}$ -pertechnetate is metabolized, as a blood-pooling region of the body. In normal state, heart, spleen, kidneys and liver etc. were scintiphotographed, and in the pathological conditions, tumor with sufficient blood supply, hemoangioma and inflammatory process such as acute osteomyelitis were detected by this cardiovascular bed scintiphotography. As vascular group, 70 of 80 cases, including brain tumor, breast cancer and bone tumors etc., were positive in the site of interest. Contrast is poor in the lung and liver, because of their dual blood supply. In the region of overlapping with heart and great vessels and the metabolic substances, the timing of scintiphotography is rather difficult. As avascular group, cystic diseases of liver,

stomach and kidney were examined in 6 cases.

$^{99m}\text{Tc}$ -pertechnetate is metabolized in nearly the same as iodine, therefore, thyroid and salivary glands are visualized. But it is different that  $^{99m}\text{Tc}$ -pertechnetate is poorly reabsorbed in the intestine after its secretion intestine are well scintiphotographed whenever this substance is present in these organs.  $^{99m}\text{Tc}$ -pertechnetate is also excreted in the urine, kidneys and urinary bladder are visualized, too. Cysto-scintiphotos are obtained in axial view, when it is scintiphotographed in the sitting position from downwards, as well as the frontal and lateral views. In one of the 4 thyroid cancer, the tumor uptakes  $^{99m}\text{Tc}$ -pertechnetate, so positive tumor scintiphoto was obtained. The tumor of the salivary gland was detected as a filling defect within the normal gland. In all cases, in which  $^{99m}\text{Tc}$ -pertechnetate was injected, the stomach was visualized as early as 5 to 10 minutes after injection. This clinical application should be further investigated.