Sequential scanning, although obviously impractical on a routine basis, has proven extremely useful in selected cases. Also it has virtually eliminated indecision as to whether a scan is normal or abnormal.

**An Experimental Study on the Mechanisms of Positive Brain Scan Associated with Cerebrovascular Accidents**

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It has been generally accepted that abnormal brain scan associated with cerebrovascular accidents can be made more frequently in the second to third week after the onset. The mechanisms for developing the positive scan are still unknown.

For clarifying this points, the cerebral subcellular distribution of 99m-Tc-pertechnetate administered intravenously was studied on the course of experimental cerebral hematoma produced in rats. The experimental cerebral hematoma was prepared in the rat by the method of clotting blood injection into the cerebral hemisphere.

The rats were sacrificed by decapitation at 1 day, 1, 2, 3 and 4 weeks after preparing the hematoma. About 30 minutes before decapitation, 200 µCi of 99m-Tc-pertechnetate was injected into the rat tail vein. The rat hemispheres with and with hematoma were divided, homogenized with 0.25 M sucrose and centrifuged to fractionate the debris, mitochondrial, microsomal and supernatant fraction. The uptake ratio and the subcellular distribution of 99m-Tc-pertechnetate of the each hemisphere were examined.

The higher ratios of hematoma to control hemisphere (H/C) were observed in 1, 2 and 3 weeks groups with hematoma. It was found that the radioisotope activities of injected 99m-Tc-pertechnetate were concentrated in the supernatant fraction, existing a little in the debris, mitochondrial and microsomal fraction in the brain. The pathohistological studies were also carried out on the course of experimental cerebral hematomas.

Higher H/C ratios were obtained in coincidence with the stage when positive scans were more frequently made in the patients with cerebrovascular accidents.

**Combination Technique with 67Grium Citrate and 99mTecnetium Pertechnetate in the Brain Scanning by the Conventional Scanner**

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Radioisotopic brain scanning has been evaluated with a number of agents using, $^{131}$I dideoxyfluorescin, $^{32}$P, $^{42}$K, $^{204}$Bi citrate, $^{131}$I PVP, $^{131}$I antifibrinogen, $^{19}$F potassium fluorate, $^{64}$Cu, $^{75}$As, $^{57}$Co TPPS, $^{133}$Xe, $^{111}$I MAA, $^{123}$I HSA, $^{197}$Hg or $^{203}$Hg, $^{159}$Yb DTPA, $^{112}$In DTPA and