

increased activity in Tc-99m HEDP brain scan.

The first case is a 46-year-old woman with right hemiparesis and unconsciousness attack. Her roentgenograms of the skull showed thickening of the left parietal bone. Brain scan 90 min. after i.v. injection of 15 mCi of Tc-99m pertechnetate revealed a large hot area, suggestive of neoplasm such as meningioma, in the left parietal region. Tc-99m HEDP brain scan demonstrated focally accentuated uptake in an area of increased activity in the same region. Surgery confirmed that the hot spot was consistent with the attachment of the tumor and the warm area corresponded to the mass. Histologic diagnosis was meningothelial meningioma.

In the second case, a 27-year-old woman, "hot spot in warm area" appearance was also recognized.

Tc-99m HEDP has a great affinity to the bone lesions. Conversely, this agent has less affinity to the brain tumors than Tc-99m pertechnetate. That enable us to distinguish focal uptake from an area of increased activity.

We believe that convexity meningioma most frequently represent this appearance, but whether or not this appearance is specific in meningioma remains to be established, because other intracranial neoplasms which invade the skull may show similar findings.

It is important for surgeons to recognize the location and size of the attachment of meningioma. With this additional information, they will be able to preform the operation more easily, and by sufficient resection of the attachment, fewer recurrence can be expected.

### **Quantitative Evaluation of the Effect of Potassium Perchlorate Administration on the Uptake of $^{99m}\text{TcO}_4^-$ by Choroid Plexus**

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Premedication of perchlorate is routinely performed in order to block the accumulation of  $^{99m}\text{TcO}_4^-$  into choroid plexus during  $^{99m}\text{TcO}_4^-$  brain scan. The optimal dose of perchlorate and optimal interval between perchlorate administration and  $^{99m}\text{TcO}_4^-$  injection were carefully studied in the present study. Two hundred and seventy eight brain scan by  $^{99m}\text{TcO}_4^-$  were evaluated for this purpose during the period from July 1976 to July 1977 in Tokyo Metropolitan Geriatric Hospital. Various doses of potassium (0–600 mg) were orally given and various intervals were taken before  $^{99m}\text{TcO}_4^-$  injection.

The results were as follows: 1) In the brain scan

by  $^{99m}\text{TcO}_4^-$  the visualization of choroid plexus was observed as positive in 82%, suspicious in 14% and negative in 4% when oral premedication of potassium perchlorate was not performed. 2) In order to block the accumulation of  $^{99m}\text{TcO}_4^-$  into choroid plexus more than 200 mg dose of potassium perchlorate was found to be necessary. In the oral dose of 200 mg potassium perchlorate the visualization of choroid plexus was noted positive in 2%, suspicious in 38% and negative in 60%. The optimal time interval between perchlorate administration and  $^{99m}\text{TcO}_4^-$  injection was 60–120 minutes.