Since its introduction by Harper in 1964 (1), $^{99m}$Tc-pertechnetate has become the agent of choice for brain scanning. Apparent uptake of this radiopharmaceutical in the choroid plexus was first described by Witcofski who later demonstrated active concentration of $^{99m}$Tc-pertechnetate in the choroid of rabbits and suppression of this uptake by administration of potassium perchlorate (2,3). Difficulty in interpretation may be encountered because of activity in the choroid plexus in 5–10% of brain scans (4). A repeat examination following administration of potassium perchlorate (dose range 200–400 mg) may be made to clarify this diagnostic problem, and some laboratories apparently regularly administer potassium perchlorate to block choroid plexus uptake.

A choroid plexus papilloma is a tumor that closely resembles normal choroid histologically (5). Uptake of $^{99m}$Tc-pertechnetate in such a tumor would not be unexpected, and indeed visualization of a choroid plexus papilloma by brain scan has been reported (6,7). Because of the similarity of this lesion to nor-

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**FIG. 1.** Case 1. A shows lateral brain scan, positive in parietal area. B, which is repeat scan after potassium perchlorate, is unaltered. C is lateral view from arteriogram which demonstrates abnormal area in parietal region.
normal choroid, the possibility existed that administration of potassium perchlorate might suppress the concentration of $^{99m}$Tc-pertechnetate in the tumor, thus interfering with interpretation of the scan and perhaps even preventing detection of the lesion. This would be of particular importance if potassium perchlorate were used routinely.

**CASE REPORTS**

**Case 1 (LEW—NCBH—47-00-69).** LEW was a 12-year-old white female with a 1½-year history of severe right-sided headaches and a six-month history of recurrent epistaxis and progressive loss of vision.

When admitted to the North Carolina Baptist Hospital on March 25, 1968 she was conscious and well oriented, but her visual acuity was poor. Her pupils were dilated and poorly reactive to light; fundoscopic examination showed secondary optic atrophy. The examination was otherwise normal.

A skull series revealed obvious sutural diastasis, a prominent convolutional pattern, and a $2 \times 2$-cm area of amorphous calcification in the right tempero-parietal region. A large area of abnormal uptake was seen deep in the right tempero-parietal region on a brain scan (Fig. 1A) done with $^{99m}$Tc-pertechnetate. No suppression of the uptake was noted on the scan (Fig. 1B) obtained following oral administration of potassium perchlorate (200 mg). A right retrograde brachial arteriogram outlined a large mass lesion in the right tempero-parietal with abundant tumor vasculature (Fig. 1C). A tempero-parietal craniotomy was performed on March 27, 1968 and a large, extremely vascular tumor was found in the right lateral ventricle. No cleavage plane could be identified, and the tumor was considered to be unresectable. Biopsy of the lesion yielded choroid plexus papilloma to histologic section.

**Case 2 (WGW—NCBH—49-92-77).** The second patient was a 14-month-old white male transferred to the North Carolina Baptist Hospital on Oct. 7, 1969 in a comatose state after an evaluation at an outlying hospital failed to disclose the etiology of increased intracranial pressure and status epilepticus.

On admission, the child was unresponsive and areflexic with symmetrical pupils which reacted poorly to light. The fontanelles were bulging, and bilateral Babinski reflexes were present.

Following insertion of continuous ventricular drainage, the patient regained consciousness and improved dramatically.

A brain scan (Fig. 2A) on Oct. 9, 1969 revealed an area of increased uptake in the right occipito-parietal region extending deep into the hemisphere near the midline. Potassium perchlorate was administered orally the following day, and a repeat brain scan (Fig. 2B) was unchanged.
A ventriculogram (Fig. 2C) performed on Oct. 13, 1969 revealed a large, irregular mass lesion in the atrium of the right lateral ventricle with associated communicating hydrocephalus. A right temporo-parietal craniotomy disclosed a large intraventricular tumor of the choroid plexus. Histological examination confirmed the impression of choroid plexus papilloma.

DISCUSSION

In their series of 1,000 brain scans Witcofski et al (6) mentioned one patient with a choroid plexus papilloma, but potassium perchlorate blockade was not used. A second case was described by Rovit et al (7), again apparently without the use of perchlorate. They advocated the use of the scan for detection and followup of these tumors. Briggs and Skor (8) reported positive scans in two patients with tumors of the choroid, one of whom had received potassium iodide before the procedure. Both of these tumors, however, were meningiomas—not papillomas.

To our knowledge there has been no report to date describing the effect of potassium perchlorate administration on the uptake of $^{99m}$Tc-pertechnetate by a papilloma of the choroid plexus.

This paper presents two cases of choroid plexus papilloma which exhibited abnormal uptake in the region of the tumor on $^{99m}$Tc-pertechnetate brain scans. There was no perceptible suppression of this uptake on repeat scans following oral potassium perchlorate.

These findings imply that there is little or no effect from potassium perchlorate on the concentration of $^{99m}$Tc-pertechnetate by choroid plexus papillomas and would suggest that detection of these tumors will not be obscured by administration of potassium perchlorate in customary doses.

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REFERENCES