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Phosphorus-32 Therapy of Cystic Brain Tumors

TO THE EDITOR: The article by Taasan et al. (1) describes a technique which has considerable promise in the treatment of cystic brain tumors through the stereotactically directed placement of phosphorus-32 (^{32}P) colloidal chromic phosphate directly into the tumor. Because reports of this therapy are relatively limited, we would like to bring to the attention of the readership our confirming experience. The details of our technique are described elsewhere (2-4).

Stereotactic surgery for ^{32}P intracystic tumoricidal irradiation was performed in an operating room equipped with a dedicated high resolution computed tomographic (CT) scanner. Initially technetium-99m sulfur colloid dilution technique was used in six patients to confirm that CT measurements correlated with sulfur colloid measurements; the mean difference being 0.5%.

Following surgical trephination in each of ten (six female, four male) patients (eight with cystic craniopharyngioma, two with cystic astrocytoma in the region of the third ventricle) using a frontal burr hole placed at the region of the coronal suture, stereotactic puncture of the cyst was performed and the ^{32}P was administered. Twenty five thousand rads was

selected as our target dosage to the cyst wall. Cyst volumes ranged from 2.8 to 80 ml.

All of the patients in our series have had initial favorable outcomes after ^{32}P implantation. This was demonstrated by regression in tumor size and an improvement or stabilization of neurological, visual, and endocrinological deficits. Follow-up evaluation (CT, ophthalmological, endocrinological) has ranged from 6 to 36 mo (mean of 18.6 mo). All patients had CT evidence of gradual cyst regression from 2 to 8 mo after surgery. All eight patients with craniopharyngiomas had stabilization of endocrinological function. One patient subsequently required craniotomy for resection of a solid craniopharyngioma component resulting in progressive optic chiasm compression. Visual deficits improved in eight of ten patients. Both patients with cystic astrocytomas have suffered recurrent solid tumor growth and ultimately expired.

We have found that stereotactic ^{32}P intracystic irradiation is a safe and effective treatment for selected benign and malignant neoplasms of the brain promoting slow reduction of cyst size over 1 to 15 mo after irradiation at surgery. We believe it should be considered as the primary treatment for solitary cystic craniopharyngiomas and as an adjunctive palliative treatment for cystic gliomas.

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REPLY: We are happy to note that Drs. Levine et al. have experienced satisfactory responses in the majority of the ten cases they have treated; the period of follow-up being significantly longer than ours at the time of publication. Their finding of very close agreement between cyst volume determined by technetium-99m sulfur colloid dilution and computed tomographic (CT) measurement is of interest as omission of the dilution study simplifies and shortens the procedure. However, caution should be exercised in that certain cases may have septa not visualized by CT dividing the cyst