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C K Petito

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Commentary

Craniopharyngioma: Prognostic Importance of Histologic Features

Carol K. Petito, *Professor of Pathology (Neuropathology), University of Miami (Fla) School of Medicine*

Are there histologic subtypes of craniopharyngiomas and do they predict the biological behavior of these tumors? This question was raised by Kahn et al (1) in 1973; they suggested that those craniopharyngiomas with a purely squamous pattern have a better prognosis than those with an adamantanomatous pattern. As reviewed by Eldevik et al (2) in this issue of the *American Journal of Neuroradiology*, the presence and the significance of a purely squamous subtype of craniopharyngiomas is not uniform among investigators.

In Kahn's series (1), an adamantanomatous pattern of epithelial cells was encountered in all 30 children and in 12 of the 22 adults. The remaining 10 adults had a purely squamous pattern of epithelial cells. It was this subtype in which improved outcome was seen. Approximately 10 years later, Giangaspero et al (3) reported 6 adults with papillary craniopharyngiomas that had squamous epithelium. They and others subsequently distinguish the papillary-squamous craniopharyngiomas not only in the presence of epithelium composed solely of stratified squamous cells, but also in the absence of keratin nodules and rarity of calcification. In practice, however, it is not always possible to distinguish squamous from adamantanomatous epithelium, especially when the distinction between the basal layer of cells in squamous epithelium and the "picket fence" arrangement of basal cells in adamantanomatous epithelium is not clear. Furthermore, many tumors have both patterns (as typified by Eldevik et al's current study), which could cause underrepresentation of adamantanomatous or mixed subtypes in those tumors subjected to subtotal resection.

Eldevik et al review the controversy surrounding the potential of improved outcome for the papillary-squamous type of craniopharyngiomas. Werner et al (4) and Adamson et al (5) found that outcome is better with squamous than with adamantanomatous craniopharyngiomas, whereas Crotty et al (6) suggest that histologic subtype does not influence tumor recurrence or patient survival. If all tumors were treated in a similar fashion, one wonders whether there would be more consistent results concerning tumor histology and patient survival. In the studies by Werner et al (4) and Adamson et al (5), the improved survival for the squamous variant was detected in tumors that were grossly resected. In contrast, no differences in outcome were detected in those cases in which the craniopharyngioma was incompletely excised (4).

A second factor that may be important in comparing histologic findings with patient outcome is the potential impact of inflammation on morbidity and mortality. Because this occurs more commonly in the adamantanomatous than in the squamous variant, it could be this component of craniopharyngioma that is important in prognostic implications. Inflammation is likely to produce greater tumor adherence to and infiltration of adjacent brain. This would make gross total resection more difficult, especially in those cases operated on before the advent of microsurgical techniques. Reanalysis of the histologic findings of craniopharyngiomas, with attention to inflammation and granulation tissue, may be warranted.

Address reprint requests to Carol K. Petito, MD, Department of Pathology (Neuropathology) (R-5), Papanicolau Building, Room 417, 1550 NW 10th Ave, Miami, FL 33136.

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