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Malignant transformation in craniopharyngioma after radiation therapy: a case report and review of the literature.

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Objective: Craniopharyngioma is a benign epithelial tumor that is thought to arise from the remnant of the Rathke pouch. Malignant transformation in craniopharyngioma is extremely rare. Herein, we report a case of malignant transformation in craniopharyngioma after radiation therapy. **Materials and methods:** Histopathological and immunohistochemical analyses were carried out for specimens of the suprasellar tumor (from three resections, with the third surgery performed after radiation therapy). **Results:** The resected tumors from the first and second surgeries comprised islands of loosely cohesive aggregates of epithelial cells, so-called stellate reticulum. At the periphery of the nests, palisaded columnar epithelium was observed. Wet keratins were scattered, and few mitotic figures were seen. The third surgical specimen was composed of irregular large nests of basaloid cells that had large, round to oval nuclei with prominent nucleoli, and mitotic figures were frequently seen (21/10 high power fields). In the center of the nests, eosinophilic ghost cells, resembling wet keratin, were observed. Accordingly, the diagnosis of malignant transformation in craniopharyngioma was made. Immunohistochemical studies revealed that the p53 protein was over-expressed in the malignant component, whereas its expression was much lower in the benign component. **Conclusions:** Similar to the ten previously reported cases of malignant transformation in craniopharyngioma, the present case occurred after radiation therapy. p53 protein overexpression was also observed in the earlier cases of malignant craniopharyngioma as well as in the present case (6/6 cases). We concluded that radiation therapy and p53 mutations could be involved in malignant transformation in craniopharyngioma.

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