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Case Report

Surgical cure of a patient with craniopharyngioma at 25-year follow-up

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Introduction

CPs develop along the hypothalamic-pituitary axis, posing significant challenges for complete resection and for restoring hypothalamic and pituitary function. The surgical approach for CPs has evolved from radical resection, which often leads to high endocrinological morbidity, to a strategy that focuses on tailored resection under neuromonitoring. Despite supplemental treatment, any suspicious residual tumor probably helps prevent regrowth, but the various modes of radiation therapy should result in numerous side effects, such as deleterious effects on endocrine function, optic neuritis, and dementia. However, the outcome of a partial resection remains poorly predictable, and in most cases, recurrence is a nuisance for patients and neurosurgeons alike. Although there is general agreement that radical resection of the tumors is ideal and curative for the treatment of CP, there are few reports of 25-year follow-up cures for patients without any endocrinological morbidity after intracranial surgery.

Illustrative case

General data

A 24-year-old female patient developed amenorrhea and moderate headaches for three months after surgical resection of a Craniopharyngioma (CP). A CT scan revealed a calcified tumor in the suprasellar region and the anterior third ventricle, resulting in obstructive hydrocephalus. Preoperative sagittal (Figure 2A) and coronal (Figure 2B) MR images showed a mixed cystic and solid tumor in the anterior third ventricle and suprasellar region, with the arrowhead pointing to the tumor (Figure 2A and B).

Surgical procedures

Given the recurrent tumor features and obstructive hydrocephalus, endoscopic surgery and radiotherapy were deemed unfavorable, so the patient was referred to our hospital for microsurgical treatment. Under general anesthesia, an original right frontal craniotomy was performed on June 4, 2001, to retract the anterior interhemispheric fissure, followed by a 2 cm incision in the corpus callosum and an open septum pellucidum cavum to expose the tumor of the anterior third ventricle. Intraoperatively, the tumor's cystic fluid was aspirated, and the solid portion of the lesion was removed piecemeal from the center to the periphery. The calcified mass was crushed and divided with micro scissors, and the freed fragments were removed. After the tumor edge was reached, the tumor wall was carefully separated from the surrounding vital brain tissue. The small perforating vessels feeding the chiasm and tract, as well as the remaining pituitary stalk, infundibulum, and mammillary body, were preserved. When possible, no leptomeninges were present between the tumor and the hypothalamic structures. After surgery, the patient experienced a transient short-term memory deficit but gradually recovered within one week. She also developed transient diabetes insipidus, treated with desmopressin. Postoperative MR images showed complete removal of the lesion and no evidence of hydrocephalus (Figure 2C and D). Histopathological examination revealed an adamantinomas-type Craniopharyngioma (CP), as shown in (Figure 3).

We conducted a 25-year follow-up review of the patient. The postoperative course was uneventful, except for short-term memory loss that gradually resolved. The patient was discharged

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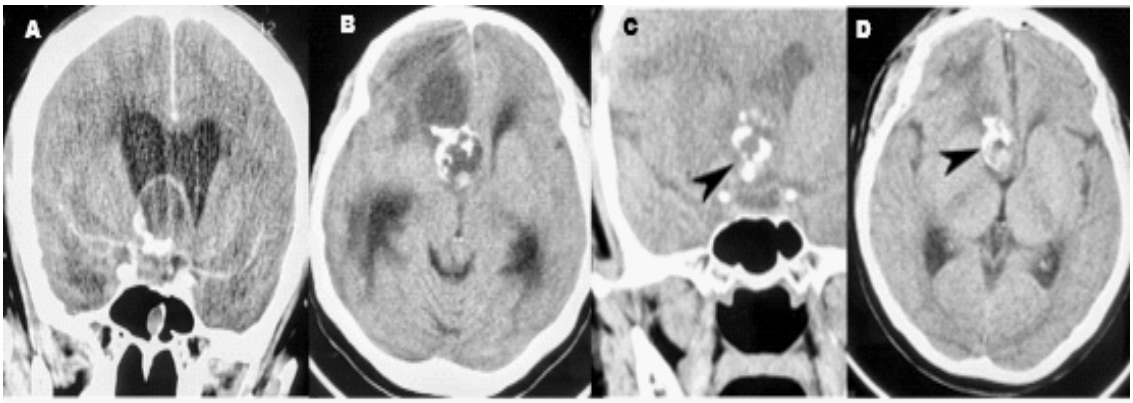

Figure 1: Preoperative enhanced coronal **(A)** and axial **(B)** CT scans revealed a calcified tumor in the anterior third ventricle, with obstructive hydrocephalus. Initial postoperative coronal **(C)** and axial **(D)** CT scans showed partial tumor resection via a right frenotomy. The arrowhead points to the tumor.

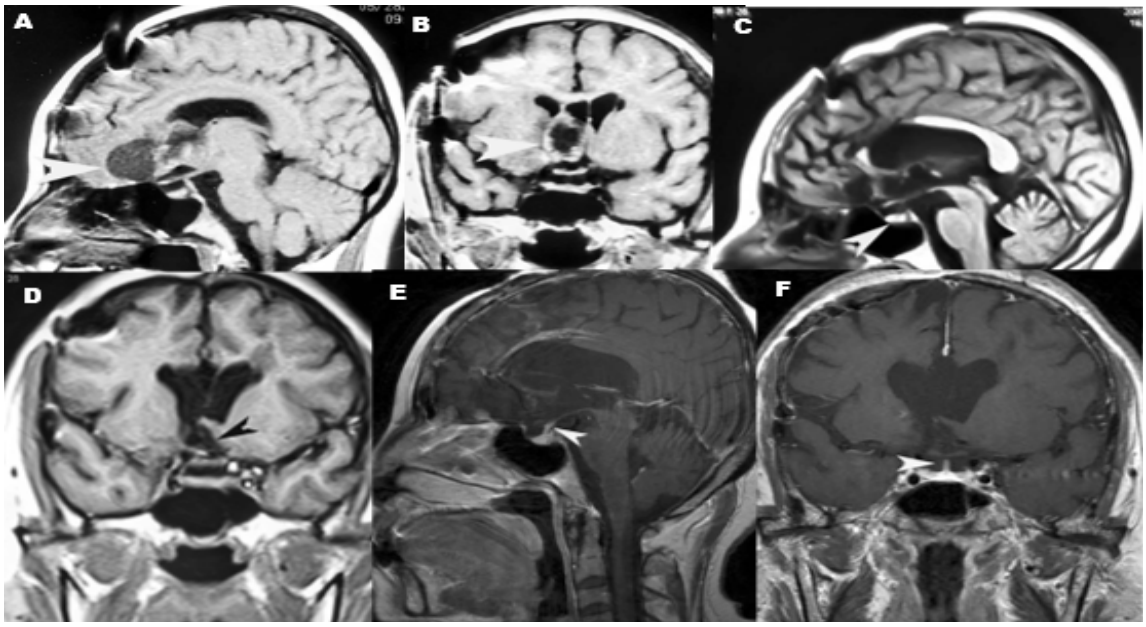

Figure 2: Second preoperative sagittal **(A)** and coronal **(B)** MR images revealed a mixed cystic and solid tumor in the anterior third ventricle and suprasellar region, with the arrowhead pointing to the tumor. Second postoperative sagittal **(C)** and coronal **(D)** MR images showed no residual tumor within the third ventricular structure, with the arrowhead pointing to the pituitary gland and the third ventricular floor. At the 25-year follow-up, sagittal **(E)** and coronal **(F)** enhanced MR images showed no evidence of tumor growth and preserved hypothalamic structure. The arrowhead indicates the pituitary stalk.

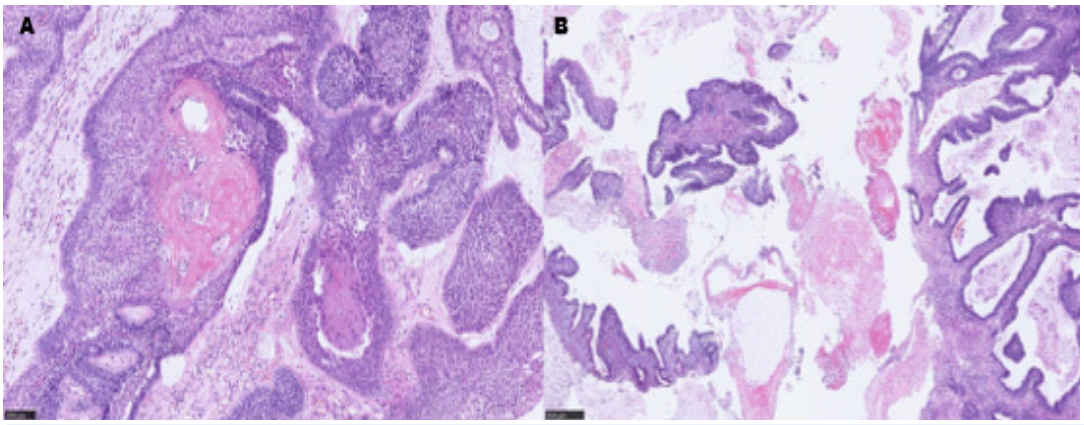

Figure 3: A Hematoxylin and Eosin (H&E)-stained histopathology slide from the center of the tumor in the anterior third ventricle of this patient shows cords of squamous epithelium, palisaded columnar epithelium, and focal keratin, findings consistent with adamantinomas CP. (**A**) scale bar: 100 µm; (**B**) scale bar: 250 µm.

Figure 4: Pictures show that the patient had a boy four years after surgery and a girl nine years after surgery (**A**). At the 25-year follow-up, the patient saw the author at an outpatient clinic on January 19, 2026 (**B**).

seven days after surgery. Her desmopressin, hydrocortisone, and levothyroxine prescriptions were discontinued three months after tapering. 1.5 years after surgery, the patient enrolled in a local normal college after passing a national university examination. After four years of study, she graduated from the normal college and served as a junior school math and English teacher. She had a boy one year after she married, following the return of her menstrual period, and a girl nine years after surgery, resulting in a happy family (Figure 4).

Discussion

In the past two decades, Endonasal Endoscopic Surgery (EES) has become popular for treating CPs because of its minimally invasive nature and improved visualization compared with microscopic techniques, and it has demonstrated good outcomes [1-3]. Advances in endoscopic surgery have enabled the development of several classification systems that systematically assess anatomical factors, tumor location, relationships to critical hypothalamic structures, and tumor characteristics. These comprehensive systems inform an effective surgical strategy tailored to each patient's needs [4-6]. However, these surgical strategies place greater emphasis on CPs with infradiaphragmatic and supradiaphragmatic components. In this context, CPs treated endoscopically were likely limited to recurrent calcified tumors in the third ventricle, because EES was more often completely or predominantly intrasellar or suprasellar and often cystic [7,8].

Rarely do reports describe patients with CP who have regained normal lives and fertility after surgery. This patient was followed in 187 studies published from 1995 to 2025. Although CPs always cause some degree of endocrinological morbidity due to hypothalamic damage [4], tumors can be classified into types to optimize the surgical approach and maximize preservation of hypothalamic structures [9-11]. Clearly identifying a dissection plane between the tumor and hypothalamic structures is essential to minimize the risk of hypothalamic injury. Thermal injury to hypothalamic structures from bipolar cautery must be avoided to preserve hypothalamic nuclear function. In this patient, an incision was made in the anterior corpus callosum via a frontal craniotomy, using the septum pellucidum cavum posterior to the finical columns.

The intercortical approaches have the advantage of providing access to the central portion of the third ventricle and the superior seller region if the tumor invades the third ventricle by displacing rather than dividing the fibers of the fornix. This approach provides access to the anterior third ventricle and facilitates dissection of a tumor located above the floor of the third ventricle and within the suprasellar region [12,13], without causing memory-deficiency damage to the farcical structures.

Conclusion

In conclusion, Surgical resection of CPs can offer a long-term cure and restore fertility, although it carries risks of endocrine complications and mortality. Preserving the hypothalamus is crucial during surgical treatment of the tumor. This procedure requires skilled techniques and should aim for complete tumor removal to avoid unnecessary retreatment due to recurrence.

References

1. Fong RP, Babu CS, Schwartz TH. Endoscopic endonasal approach for craniopharyngiomas. J Neurosurgical Sci. 2021; 65(2): 133-9. doi: 10.23736/S0390-5616.21.05097-9

2. Webb KL, Pruter WW, Hinkle ML, Walsh MT. Comparing Surgical Approaches for Craniopharyngioma Resection Among Adults and Children: A Meta-analysis and Systematic Review. World Neurosurgeon. 2023; 175: 876-e896. doi: 10.1016/j.wneu.2023.04.037

3. Wisnawa IWW, Haq IB. Comparative efficacy of transcranial and endoscopic surgery for craniopharyngioma: A systematic review and meta-analysis of contemporary literature. Surg Neurol Int. 2024; 15: 356. doi: 10.25259/SNI_399_2024

4. Puget S, Garnett M, Wray A, et al. Pediatric craniopharyngiomas: classification and treatment according to the degree of hypothalamic involvement. J Neurosurgeon (1 Suppl Pediatrics). 2007; 106: 3-12.

5. Jane JA Jr, Prevedello DM, Alden TD, et al. The transsphenoidal resection of pediatric craniopharyngiomas: A case series. J Neurosurgeon Pediatric. 2010; 5: 49-60.

6. 26. Kassam AB, Gardner PA, Snyderman CH, et al. Expanded endonasal approach, a fully endoscopic trans nasal approach for the resection of midline suprasellar craniopharyngiomas: A new classification based on the infundibulum. J Neurosurgeon. 2008; 108(4): 715-728. doi:10.3171/JNS/2008/108/4/0715

7. Sarkar S, Chacko SR, Korula S, et al. A Comparison of Long-Term Treatment Outcomes Between Giant and Nongiant Craniopharyngiomas. World neurosurgeon 2022. https://doi.org/10.1016/j.wneu.2022.03.073

8. Moussazadeh N, Prabhu V, Bander ED, et al. Endoscopic endonasal versus open transcranial resection of craniopharyngiomas: A case-matched single-institution analysis. Neurosurg Focus.

2016; 41(6): 7.

9. Samii M, Bini W. Surgical treatment of craniopharyngiomas. Zentralbl Neurochip. 1991; 52: 17-23

10. Hoffman H J. Surgical management of craniopharyngioma. [J]. Pediatric Neurosurgery. 1994; 21(1): 44-9. DOI: 10.1159/000120861

11. Yasargil MG, Curcic M, Kis M, Siegenthaler G, Teddy PJ, et al. Total Removal of Craniopharyngiomas. Journal of Neurosurgery. 1990; 73: 3-11. https://doi.org/10.3171/jns.1990.73.1.0003

12. Prieto R, Barrios L, Pascual JM. Strictly third ventricle craniopharyngiomas: Pathological verification, anatomy-clinical characterization and surgical results from a comprehensive overview of 245 cases. Neurosurgical Review. 2021. https://doi.org/10.1007/s10143-021-01615-0

13. Shi XE, Wu B, Fan T, Zhou ZQ, Zhang YL. Craniopharyngioma: Surgical experience of 309 cases in China. Clinical Neurology and Neurosurgery. 2008; 110(2): 151-159.