RECURRENCE AND VISUAL DEFICIT FOLLOWING GROSS TOTAL EXCISON OF CRANIOPHARYNGIOMA WITHOUT ADJUVANT RADIATION: A SINGLE SURGEON SERIES OF 40 ADULT PATIENTS.

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Introduction

Craniopharyngiomas are rare epithelial tumors that arise from remnants of Rathke's pouch. Although benign histologically, these tumors frequently shorten life and effect significant morbidity due to their perilous proximity to eloquent neural and vascular structures. Accordingly, craniopharyngiomas are treated surgically. Alternatives in surgical approach, goal for extent of tumor excision, and use of adjuvant radiation delineate treatment options. Consensus as to optimal management remains elusive in light of conflicting data regarding rates of tumor recurrence and of significant morbidty following different surgical management modalities.

Methods

Patient Selection: CUMC Dept. of Neuropathology's database queried for "Craniopharyngioma"; "Cranial Pharyngioma"; "Adamantinoma" from 1993 until 2012. CUMC Dept. of Neurosurgery's billing database queried for ICD-9 code "237.0". Yielded 114 patients ? 40 recieved primary resection performed by JNB. Clinical Review: JNB clinical records: preoperative consultation and postoperative follow-up. CUMC inpatient electronic records. CUMC Department of Radiology Imagning Studies: OsiriX version 4.1.2. Software: Microsoft Excel, GraphPad Prism, and SAS software. Scoring: EOR: no evidence of residual tumor tissue on 3 month postopt MRI. Progression: recurrent tumor requiring a second resection. Time to progression: time from primary surgery to secondary surgery. Approval: All conduct reviewed and approved by the Institution Review Board of CUMC.

Conclusions

These findings suggest that the pursuit of GTR of craniopharyngioma by an experienced surgeon, without use of adjuvant radiation therapy, is an appropriate strategy for treatment in adult patients. Furthermore, this strategy may allow for resolution of tumor induced visual deficits in a majority of patients treated.

References

1. Michael E Sughrue et al., "Endocrinologic, Neurologic, and Visual Morbidity After Treatment for Craniopharyngioma," Journal of Neuro-Oncology 101, no. 3 (June 10, 2010): 463–476, doi:10.1007/s11060-010-0265-y. 2. B E Zacharia et al., "Incidence, Treatment and Survival of Patients with Craniopharyngioma in the Surveillance, Epidemiology and End Results Program," Neuro-Oncology 14, no. 8 (July 30, 2012): 1070–1078, doi:10.1093/neuonc/nos142. 3. Isaac Yang et al., "Craniopharyngioma: a Comparison of Tumor Control with Various Treatment Strategies," Neurosurgical FOCUS 28, no. 4 (April 2010): E5, doi:10.3171/2010.1.FOCUS09307. 4. N Karavitaki, "Craniopharyngiomas," Endocrine Reviews 27, no. 4 (March 16, 2006): 371–397, doi:10.1210/er.2006-0002.

TABLE 1

PATIENTS		
Patients	40	
Average age at surgery (years)	50 ± 17	
Female %	52.5%	
Follow-up (months)	85 ± 9.5	
EXTENT OF RESECTION	**%**	
Gross Total Resection	67.6	
Subtotal Resection	32.4	
Subtotal Resection: Approach		
Craniotomy	27.3	
Transsphenoidal	42.6[1]	
SURVIVAL	**%**	**Reported Range (%)**
Overall Survival	87.5	83.0 - 92.7
OS: 1 Year	95.0	87.0 - 91.5
OS: 3 Years	92.5	79.5 - 86.2
RECURRENCE	**%**	**Reported Range (%)**
Recurrence: Total	17.5	10.0 - 100
Recurrence: GTR Imaging	4.0	17.0 - 62.0
Recurrence: STR Imaging	41.7[2]	33.0 - 100
Time to Recurrence (months)	27.2 ± 11.0	12.0 - 51.6 months
RFS: 2 Years	90.9	88.0
RFS: 5 Years	75.0	67.0
Recurrence: Approach		
Craniotomy	15.2	
Transsphenoidal	28.6[3]	
VISUAL SYMPTOMS	**%**	**Reported Range (%)**
Preopt Visual Symptoms	92.5	60.0 - 72.0
Postopt Visual Symptoms	65.0	40.0 - 62.5
Postopt Visual Improvement	78.4	
Postopt Visual Worsening	15.0[4]	36.0

TABLE 1. Summary of patient characteristics and the results of clinical review, highlighting EOR, OS, Recurrence, and Visual Symptoms. [1]p=0.413; [2]p=0.004; [3]p=0.396; [4]Including 2 new

FIGURE 1

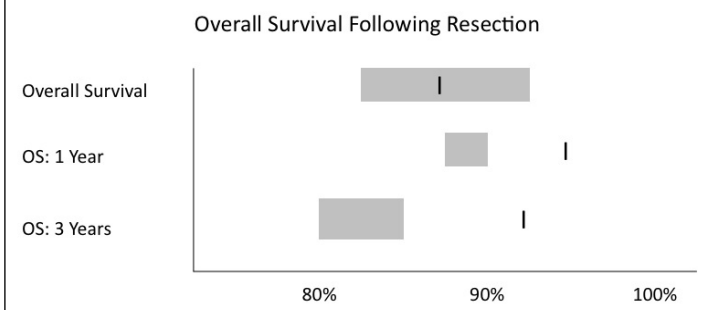

FIGURE 1. SURVIVAL. OS following attempted GTR was 87.5% (35/40) within published range for all treatments. OS at 1y and 3y were above published ranges for all treatments at 95.0% (37/40) and 92.5% (4/40), respectively.

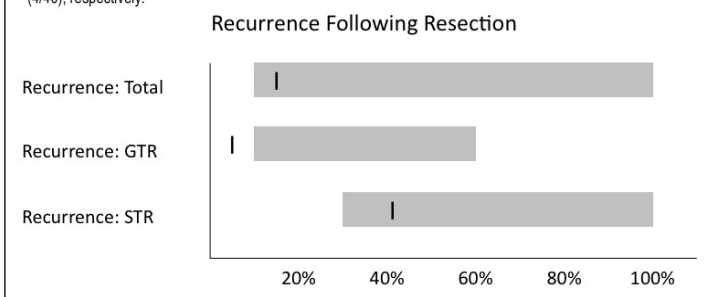

FIGURE 2. RECURRENCE. Recurrence following attempted GTR was 17.5% (35/40), at the lower extreme of published ranges for all treatments. Recurrence following STR was in the lower quartile of the published range at 41.7% (5/12). Recurrence was 4% in the 25 patients with MRI confirmed GTR, below published ranges (vs. STR p=0.004).

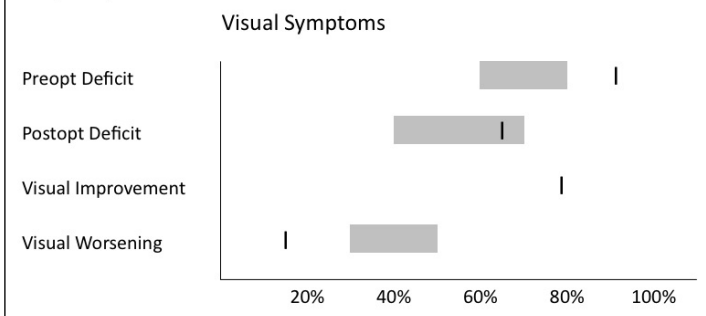

FIGURE 3. VISUAL SYMPTOMS. Visual symptoms were present in 92.5%, greater than reported range of 60-72%. Postopt visual deficit were present in slightly more than published ranges (65% vs. 62.5%). Only 15% reported postopt visual worsening, less than half of that reported. Remarkably, 78.4% (29/37) with preopt visual symptoms demonstrated improved vision following surgery; no comparable rates were found in publication.