Long Term Outcomes and Survival Analysis for Intracranial Hemangiopericytoma Following Treatment with Radiosurgery or Radiotherapy

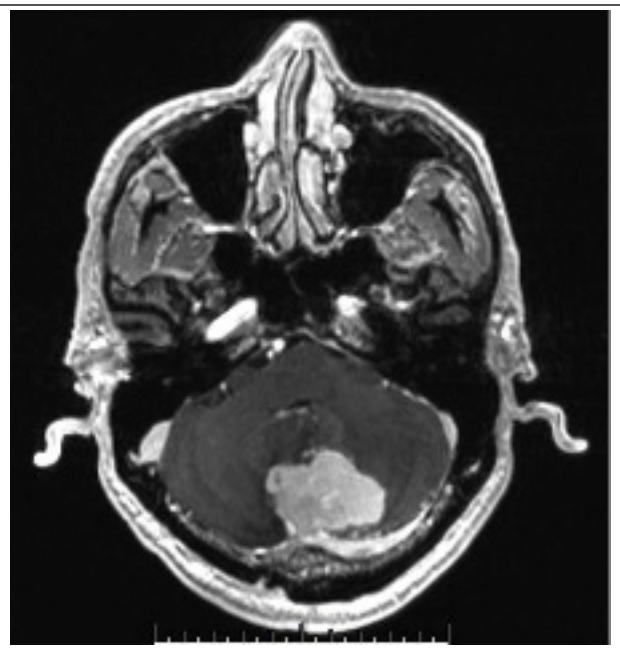
Sergei Terterov MD; Julio LB Pereira MD; Elena I. Fomchenko PhD; Tania B. Kaprealian; Michael T. Selch; Alessandra A. Gorgulho MD; Stephen Tenn; Antonio DeSalles MD PhD; Isaac Yang MD

Introduction

- The study of intracranial hemangiopericytoma is made difficult by its rare incidence
- The overall optimal treatment strategies for this tumor are not yet fully elucidated

Methods

- A retrospective chart analysis was performed
- Included patients who underwent stereotactic radiosurgery (SRS) or stereotactic radiotherapy (SRT), for pathologically confirmed intracranial hemangiopericytoma at the UCLA Medical Center over the last 20 years
- Comparison of progression free survival (PFS) and overall survival (OS) in patients treated with SRS and SRT was performed



Results Summary

	N (%)	Recurrence (%)	PFS (yrs)		OS (yrs)	
Total	22 (100)	5 (23)	2.6		3.8	
SRS	14 (64)	4 (29)	1.9	$P = 0.08$	3.6	$P = 0.8$
SRT	8 (36)	1 (13)	3.9		4.1	

Results

- Twelve patients harboring a total of 22 lesions met the inclusion criteria and were analyzed
- Lesions treated with SRS received an average of 1653cGy at the 90% isodose line in a single fraction
- Lesions treated with SRT received an average of 5204cGy at the 90% isodose line in an average of 28.8 fractions
- The average PFS and OS were 2.6 years and 3.8 years, respectively
- The OS in the SRS vs. SRT treatment groups was not significantly different at 3.6 years and 4.1 years, respectively (P = 0.8)
- The PFS in the SRS vs. SRT treatment groups showed a trend towards a difference, however it did not reach statistical significance, with 1.9 years and 3.9 years, respectively (P = 0.08)
- Five lesions (23%) demonstrated recurrence after an average of 2.8 years. The recurrence rate was not significantly different between the SRS and SRT treatment groups, 28.5% and 12.5%, respectively (P = 0.6)

Conclusions

- Our data suggests that SRS and SRT may be equivalent with respect to progression free survival and overall survival in patients with intracranial hemangiopericytoma
- Our data also demonstrates a trend towards a nearly twofold progression free survival benefit after SRT compared to SRS
- Larger studies or data pooling is needed to definitively establish the optimal mode of radiation delivery for the control of these rare neoplasms

Learning Objectives

- Radiosurgery and radiotherapy are viable alternatives for controlling biopsy proven hemangiopericytoma
- Larger studies are needed to definitively evaluate the outcomes difference between SRS and SRT for intracranial hemangiopericytoma