Incidence of Post-Operative Infarction due to Vasospasm in Transsphenoidal Versus Transcranial Resection of Craniopharyngioma

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OUTLINE

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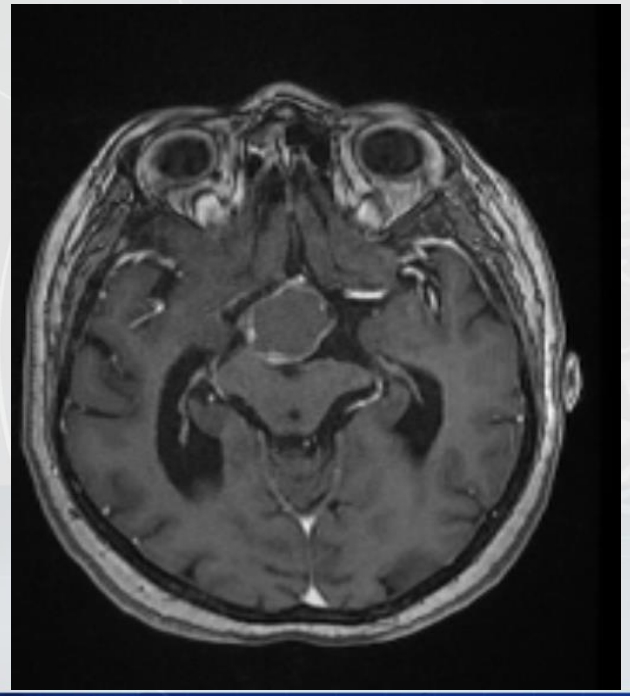
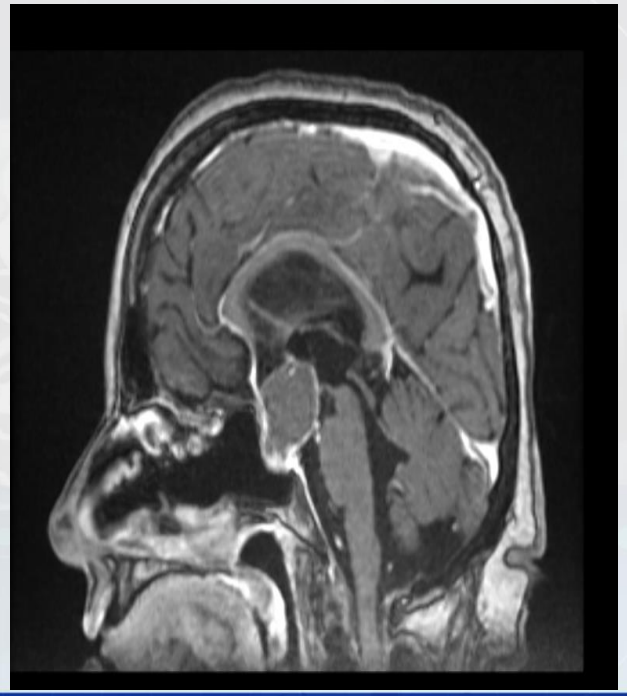
Introduction

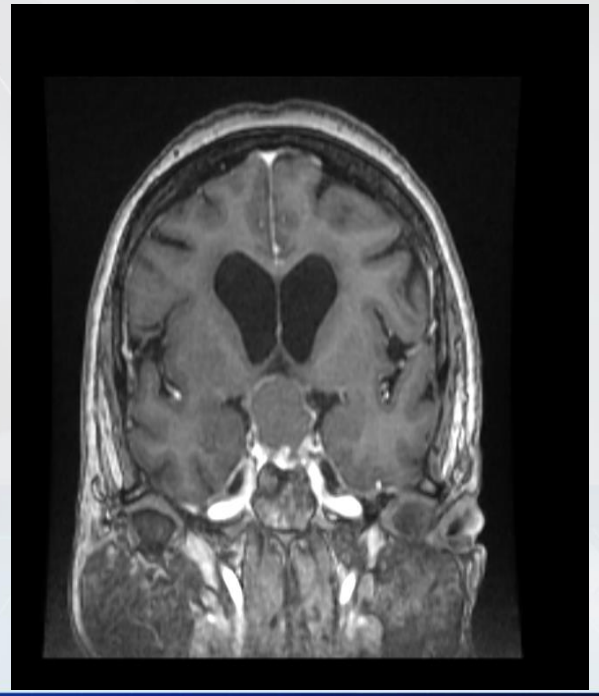
- Craniopharyngioma is benign tumor with aggressive behavior
- Account for 1 to 4% of all primary intracranial tumors
- Vasospasm after surgical resection is a well described complication with a devastating consequences.

Case

- 57 years old lady, known to have Craniopharyngioma S/P transsphenoidal resection 5 yrs ago, post ommaya reservoir 2yrs ago, presented with worsening vision

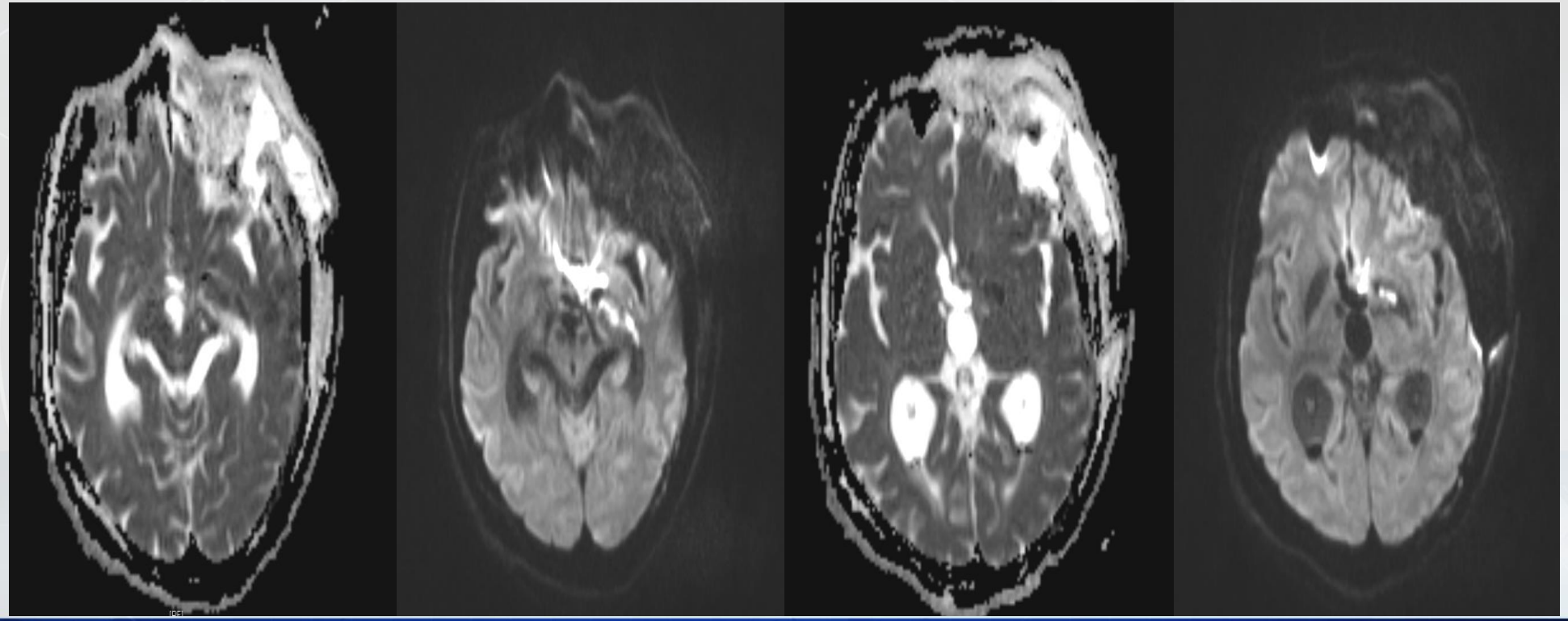






Case

- Patient under went transcranial resection Surgery went smoothly, uneventful, BUT patient developed aphasia and right hemiplegia two days after.



Objectives

- Primary outcome
  - Incidence of post operative infarction in transcranial vs transsphenoidal approach clinically and radiologically

- Secondary outcome
  - To compare the incidence of postoperative complication in relation to types of surgery

Methodology

- Retrospective
- Divided to 2 groups

  transcranial vs transsphenoidal
- variables:

  Pre operative data

  Intraoperative data

  Post operative data

Inclusion Criteria

- All craniopharyngioma cases underwent surgical resection
- First resection or redo surgery
- All ages (pediatric and adult)

Exclusion criteria

- Non craniopharyngioma seller/supraseller lesions
- Craniopharyngioma cases underwent biopsy or ommaya reservoir as definite treatment

Result

From 2007 up to 2016:

- We collected
  - 25 cases per procedure (20 patients)
  - 16 male and 9 female
  - Age (6 to 61)
  - 9 transnasal transsphenoidal approach
  - 16 transcranial approach

Result

		Types of surgery	
		Transnasal Trranssphenoidal approach	Transcranial Approach
Clinical new deficit	None	8 (88.9%)	13 (81.3%)
	Weakness	1 (11.1%)	3 (18.8%)
Radiological evidence of infarction in post operative MRI	Yes	2 (22.2%)	3 (18.8%)
	No	7 (77.8%)	13 (81.3%)

Result

		Type of Surgery	
		Transnasal Transsphenoidal Approach	Transcranial Approach
Degree of Resection	Gross Total Resection	1 (11.1%)	3 (18.8%)
	Subtotal Resection	8 (88.9%)	13 (81.3%)
CSF Leak	No Leak	6 (66.7%)	14 (87.5%)
	There is leak but not required intervention	2 (22.2%)	1 (6.3%)
	required reoperation for the defect	1 (11.1%)	1 (6.3%)
Other Major Complication	None	6 (66.7%)	8 (50.0%)
	Major Cranial Nerve Injury	0 (0.0%)	1 (6.3%)
	Bacterial Meningitis	2 (22.2%)	2 (12.5%)
	Other	1 (11.1%)	5 (31.3%)

Result

		Radiological evidence of post operative MRI		P – VAUE
		Yes	No	
CSF LEAK	No Leak	4 (80.0%)	16 (80.0%)	0.659
	There is leak but not required intervention	1 (20.0%)	2 (10.0%)	
	required reoperation for the defect	0 (0.0%)	2 (10.0%)	
Post operative hormonal status	Normal	0 (0.0%)	6 (30.0%)	
	New Diabetes Insipidus	5 (100.0%)	5 (25.0%)	*0.025
	New pituitary hormonal deficiency other than DI	0 (0.0%)	2 (10.0%)	
	Same Preoperative Hormonal Deficiency	0 (0.0%)	7 (35.0%)	
Other Major Complication	None	2 (40.0%)	12 (60.0%)	
	Major Cranial Nerve Injury	1 (20.0%)	0 (0.0%)	*0.045
	Bacterial Meningitis	2 (40.0%)	2 (10.0%)	
	Other	0 (0.0%)	6 (30.0%)	

conclusion

- We did not find any statistical difference in post operative infarction in transnasal transsphenoidal and transcranial approaches.
- However, transcranial approach showed high incidence of clinical deficit.
- While the incidence of radiological infarction was more in transsphenoidal approach

conclusion

- In post hock analysis showed:
  - There is statistical significance in patient having evidence of post operative infarction on MRI, they are prone to have higher incidence of developing new hormonal deficit, cranial nerve deficit and bacterial meningitis.

Limitation

- Sample size.

Recommendation

- The surgical approach should be chosen after multidisciplinary meeting, and the decision should be tailored for each patient's condition and tumor expansion.
- to overcome the sample size,

  A multicentre retrospective study should be considered hence this type of clinical question cant be answered in Randomized Clinical Trial

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THANK YOU