



Pediatric Giant pituitary adenomas: Are they different from adults ? A clinical analysis of a series of twelve patients.

Sumit Sinha MS MCh; Bhawani S Sharma MCh

All India Institute of Medical Sciences, New Delhi, India

Introduction

Pituitary adenomas are extraordinarily rare tumors in pediatric age group. Several authors have reported that pituitary tumors may be highly invasive in younger patients. The aim of this study was to evaluate clinical presentation and microsurgical outcome of giant pituitary adenomas (GPA) in children <18 years.

Methods

All patients <18 years, operated at our center for GPA (tumor >40 mm in maximum diameter) were included in study. Clinical features, hormonal profile, radiology, surgical approach, results and complications were analysed.

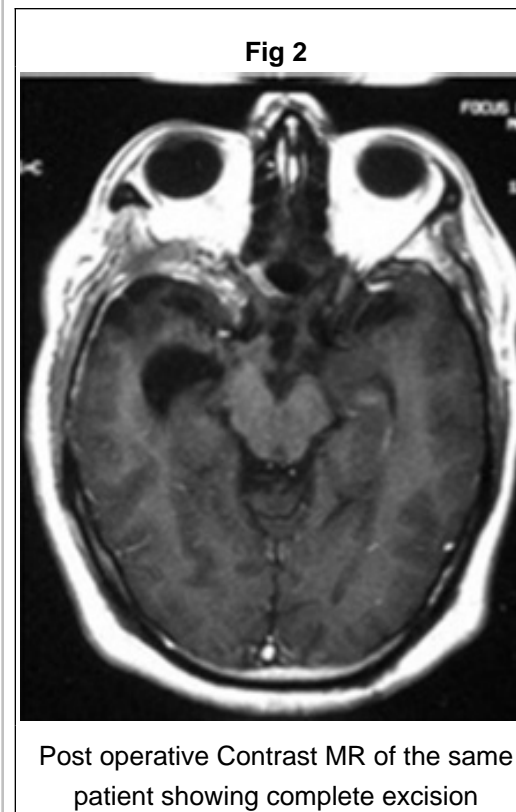
Results

A total of twelve children with GPA were managed microsurgically. Visual deterioration (73%) was most common presentation. Functioning adenomas were found in 83% patients, with prolactinomas being most common. A near-total excision (>90% tumor removal) could be achieved in 6 (50%) patients. Visual improvement was observed in 44% patients. However, there was no improvement in those where the eye was negative to perception of light prior to surgery. At the last follow up, all the patients with functioning adenomas were in hormonal remission, and there was no residual/ recurrent tumor in patients with non-functional adenomas. 25% experienced single or multiple perioperative or postoperative complications. There was one perioperative death (8%).



Conclusions

GPA are very rare in pediatric population, with majority being functional and more aggressive in nature as compared to in adults., with high morbidity (25%) and mortality (8%). However, most of them can be approached transsphenoidally. The combination of surgery and radiotherapy, as well as medical therapy with bromocriptine, achieves good tumor control, despite a high rate of residual tumor and tumor recurrence.



Learning Objectives

By the conclusion of this session, participant should be able to understand that 1) clinical presentation of giant pituitary tumours in children different from adults 2) giant pituitary adenomas are more aggressive in children .

Table 2

Hormonal levels	Preoperative values (ng/ml)	Postoperative values (at the last Follow up) (ng/ml)
Prolactin	376 ± 48	21 ± 9.8
Growth Hormone	24 ± 5	4.6 ± 3.2

Pre- and Post-op mean hormonal levels

References

1. Sinha S, Sharma BS (2010). Giant pituitary adenomas- An enigma revisited: Microsurgical treatment strategies and surgical outcome in a series of 250 patients. *Br J Neurosurg* 24:31-39
2. Sinha S, Sharma BS (2007). Treatment of Giant pituitary adenomas: An update. *Neurosurg Quart.* 17:120-127
3. Haddad SF, Von Gilder JC, Menezes AH (1991). Pediatric pituitary tumors. *Neurosurgery.* 29:509-514
4. Mehrazin M (2007). Pediatric tumors in children. *Clinical analysis of 21 cases. Child Nerv Sys.* 23:391-398

Table 1

Tumor extensions	No of Patients	Primary Approach	Re-exploration
Group A- Suprasellar	5 (45.5%)	All TS	TS-TS-2
Group B- suprasellar with hourglass constriction	2 (9%)	*TS-1;TC-1	*TS- TC- 1 TS-TS-1
Group C- Uni/bi-lateral cavernous sinus extension	2 (27.3%)	1- TC; 1-TS	
Group D- Multicompartmental (>2 directions)	3 (18.2%)	All TC	-

Tumor Extension with routes of surgery