

Surgery for giant pituitary adenomas

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Objective

The term "giant pituitary adenoma" is reserved for pituitary tumors greater than 4 centimeters in diameter or those with more than 2 centimeters of suprasellar extension, or both. From 1987 to 2004 477 patients underwent 528 operations for pituitary adenomas at Marmara University. Of those 440 were transsphenoidal and 88 were transcranial operations. 57 of the cohort were identified as giant pituitary adenomas. This study analyses the results of this subgroup to aid in decision making in the treatment of giant pituitary adenomas.

Methods

The study retrospectively investigated 57 cases of giant pituitary adenomas operated at Marmara University between January 1987 and January 2004. These patients represented 12% of all adenomas operated at our center during the aforementioned time frame. Median age was 37 ranging from 15 to 67. Mean age was 38.8+/-15.9 and the male to female ratio was 7:3. 57 patients underwent a total of 65 operations. Of the 57 transcranially operated patients 42 were operated with the pterional-, 2 with subfrontal- approach and 13 underwent cavernous sinus exploration. For cavernous sinus exploration the pterional interdural approach described by Dolenc was used in 9 and 4 were operated with the cranio-orbitozygomatic approach.

Results

15 tumors were prolactin secreting adenomas, 8 were growth hormone secreting adenomas, 21 were non-secreting adenomas and the rest were plurihormonal adenomas. Total mortality was 1.8% and this was related to aspiration pneumonia. Total surgical morbidity was 8% and consisted of cerebrospinal fluid fistula, hydrocephalus, surgical hematoma and postoperative pituitary insufficiency. Rate of total resection was 61% for the whole group and 23% for tumors invading the cavernous sinus. Rate of subtotal resection was 39% for the whole group and 77% for tumors invading the cavernous sinus. 9 cases underwent adjuvant fractionated- radiation therapy, 15 cases underwent adjuvant Gamma-Knife radiosurgery. 9 cases of prolactin secreting adenomas continued to receive bromocryptine postoperatively.

Conclusion

With recent advances in neuroimaging, surgical technique, sophisticated instrumentation and increased anatomical knowledge surgical exploration of giant pituitary adenomas have become a procedure with acceptable mortality and morbidity. In giant pituitary adenomas who fail or who are not candidates for pharmacotherapy surgical exploration should be considered. Considering both effectivity and morbidity surgical exploration is superior to radiation therapy in this subgroup of pituitary adenomas.