Giant intracranial meningioma: Technical challenges, surgical outcome and clinico-pathological factors influencing survival

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DISCLOSURE

• I do not have any financial relationships with any commercial interests.

• Conflict of interest - None.

• The approval for conducting the study has been obtained from the Institute Ethics committee board.
INTRODUCTION

- The surgery of giant intracranial meningioma [GIM] is unique due to its large size, prominent vascularity, limited visualisation and entangling of various neurovascular structures and severe cerebral edema.

- The study reports the authors surgical experience of 80 GIM cases, the operative challenges as well as surgical outcome and various factors influencing survival.
METHODS

- A retrospective analysis of 80 patients of histologically proven meningioma of size ≥ 5cm who underwent surgical treatment at LSU Health Sciences Center, Shreveport, Louisiana, USA over twenty year period [1995-2015] is presented.

- The clinical and radiological data were collected and the tumours were categorised into histological groups according to WHO classification.
RESULTS OF THE STUDY

- The study included 27 males [33.8%] and 53 females [66.3%].

- The mean age of the cohort was 56 years [56.3±16.1].

- The mean size of the tumor was 56.4±4 mm with a range from 50 mm to 84 mm.

- Skull base was the most common location [57 patients, 71.3%].

- Simpson Grade 1 excision was achieved in 9 patients [11.3%] whereas Grade 2 excision was achieved in 57 patients [71.3%].
RESULTS OF THE STUDY

• The operative mortality was seen in 4 patients [5%].

• Regression analysis showed age, sex, location of the tumor, neuronavigation, Simpson grade of excision and histology of tumor were the factors which significantly affected the recurrence free survival [RFS].
Pre-op [A,B,C] and Post-op [D,E,F] images of GIM
DISCUSSION

- As surgery for GIM is formidable, radiological characteristics can be useful adjuncts for planning an effective and safe surgical strategy.

- Safe-maximal resection should be the goal especially for GIM located at skullbase.

- The factors such as young age, male sex, use of neuronavigation and skullbase location positively influence RFS while Simpson Grade of excision [Grade 3/Grade 4] and poor histological grade adversely influence the survival.
SUMMARY

• The giant intracranial meningioma [GIM] constitutes a different spectrum of brain tumors which invade the vital neurovascular structures and makes the primary mode of treatment, surgery, a technically challenging one.

• The surgery for GIM is unique in different ways due to various reasons.

• A careful pre-operative evaluation, understanding of the risk factors, effective surgical approach and judicious use of intra-op adjuncts are the key factors which play a pivotal role in GIM resection.