Modified Technique Of Awake Craniotomy For Eloquent areas Intrinsic Brain Tumors With Limited Resources

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Disclosure

• I have no financial disclosure

• I have no actual or potential conflict of interest in relation to this program / presentation
Introduction

• Surgical treatment of intrinsic brain tumor in the eloquent areas like speech/ motor is always a risk factor for major deficit.

• Awake craniotomy is a useful surgical approach to identify and preserve functional areas in brain and maximizes tumor removal.

• Due to deficient infrastructure and financial constraints the procedure is modified.
Methods

- Retrospective analysis was done with selected patients admitted from July 2011 to August, 2016 for awake craniotomy.
- The presentation was seizure and/ progressive neurological deficit.
- Long acting local anaesthesia was used for scalp block. Anaesthesia was performed in a state of sleep-awake-sleep pattern, keeping patients fully awake during tumor removal.
- The brain eloquent functions were closely monitored clinically during surgery.
- However unlike routine, brain mapping or neuronavigation technique was not performed here.
- Clinical monitoring being performed by anaesthetist and surgeon during the entire procedure of tumor removal.
Results

- A total of 35 patients were included in the study of age between 24-55 years (mean 36). 20 (57.14%) females and 15 (42.85%) males.
- 20 (57.14%) patients presented with predominantly seizure disorders and rest with progressive neurological deficit.
- 30 (85.71%) patients were discharged on second post operative day.
- Complications was encountered in 4 (11.42%) patients who developed brain swelling intraoperatively and 5 (14.28%) deteriorated neurologically in the immediate post operative period however managed successfully.
- 5 (14.28%) patients require ICU/ HDU care for different reasons.
- There was no mortality during the hospital stay.
- Histopathology revealed 25 (71.42%) patients low grade glioma, 8 (22.85%) high grade glioma and 2 (5.71%) metastases.
Discussion

• This is a single surgeon’s experience and a retrospective study.
• The intrinsic tumors of the eloquent areas of the brain removed safely by awake craniotomy.
• Due to lack of infrastructures brain mapping not performed.
• Clinical monitoring being performed during the entire procedure of tumor removal by the surgeon / anaesthetist.
• A team approach comprising of doctors and paramedical takes care of the entire procedure.

• The complication rate and failure rates are low irrespective of tumor site and classification, tumor history and size. Preservation of motor function or language done quite successfully with maximal tumor resection.
Discussion , contd

• Counseling was done to the patients.

• A few patients were females, home makers and from remote villages with a lot of anxiety. So achieving a full co operation from them was a challenge. Intraoperative anaesthesia monitoring was done strictly. No intraoperative intubation was necessary. We did not use any laryngeal masks.

• The limitations of this study is it is a retrospective study. To overcome this patients whose complete data available are incorporated in this study. Another limitations of this study we do not very large number of patients.
Summary

- Awake Craniotomy is a safe surgical management for intrinsic brain tumors in the eloquent cortex although surgery and anaesthesia with a limited resources is a challenge.
- It offers great advantage towards disease outcome.