

Introduction

Awake craniotomies have been used for a variety of lesions, particularly low grade gliomas. Several techniques have been described in the literature. The application of electric current onto the human cortex help to preserve function in the resection of eloquent brain lesions. Not all patients have the possibility to obtain Functional Magnetic Resonance Image, Neuronavigation system for resection or transoperative neurophysiological monitorization.

Methods

A retrospective, observational study, with 14 patients, in the period of 4 years, males and females between 16 years old to 45 years old, with Karnofsky Performance Status scores of 90-100, and with brain lesions in eloquent areas, not well defined in its borders. Preoperative simple and contrasted CT, MR T1, T2, T1 w/gad., EEG and Neuropsychological valuation were performed before the surgery. Trasoperative neuropsychological evaluation were performed with awake patient. We resect the maximum of lesion guided by the neuropsychological test changes, continously applied.

If lesion remanent is observed adjacent to motor areas, we perform electrical brain stimulation to delimitate the resection.

Results

9 males, 5 females, mean age 29 years old. 14 patients had left hemisphere lesion, unique lesion. By localization we found: 6 frontal, 4 frontoparietal, 4 temporal. 14 patients had seizures and 1 had also Wernicke aphasia. The grade of resection was: 50%: 1 patient, 80%: 5 patients, 90%: 1 patient, 100%: 7 patients. Post-operative Karnofsky score were: Karnofsky of 90: 1, Karnofsky of 100: 13. Pathology results were: 2 Arterio Venous Malformation, 4 neurocysticercosis, 6 Grade I astrocytomas, 1 venous angioma, 1 lymphoma. Transoperative complications were: 1 hemiparesia and 2 seizures.

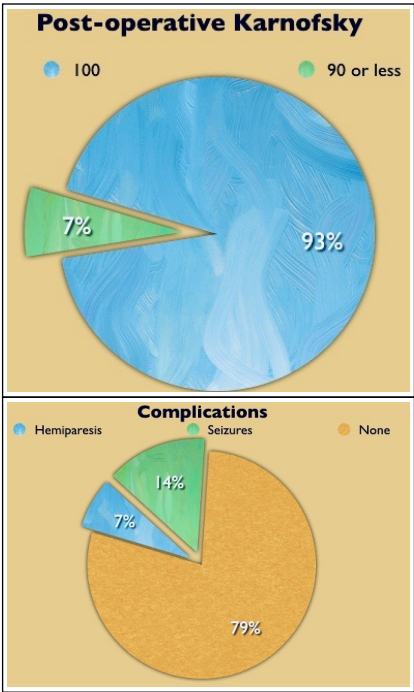
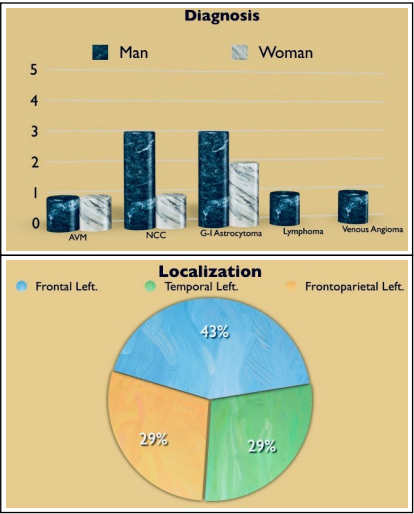
Conclusions

Awake craniotomy were performed in young patients, with left sided lesions, predominantly frontal lobe (42.8%). Seizures were the most frequent clinical manifestation.

50% of lesions were resected totally. Karnofsky scale show that 92.85% of patients had 100 points. 42.85% were Grade I astrocytomas. 21.42% of transoperative complications were reported in this study. Preoperative, transoperative and postoperative Neuropsychological evaluation was performed in all patients.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) analyze indications for awake craniotomies as an option for brain lesions at eloquent area. 2) understand this technique used at La Raza Hospital. 3) Know the casuistic in this hospital.



References

1. Shawn L, Li J, Lau D, Molinaro A, Perry D, Meng L et al., Awake craniotomy to maximize glioma resection: methods and technical nuances over a 27-year period. J Neurosurg. 2015; 123:325-339.

2. Szelényi A, Bello L, Duffau H, Fava E, Feigl G, Galanda M, Neuloh G et al. Intraoperative electrical stimulation in awake craniotomy: methodological aspects of current practice. Neurosurg Focus. 2010; 28(2):E7

3. Serletis D, Bernstein M. Prospective study of awake craniotomy used routinely and nonselective for supratentorial tumors. J Neurosurg. 2007;107(1):1-6.

4. Taylor M, Bernstein M. Awake craniotomy wit brain mapping as the toutine surgical approach to trating patients with supratentorial intraaxial tumors: a prospective trial of 200 cases. J Neurosurg. 1999;90(1):25-41

