MINIMALLY INVASIVE NEUROENDSCOPIC APROACH TO ACUTE SUBDURAL HAEMATOMA: Technical Note

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INTRODUCTION

Classically, hemispheric acute subdural hematoma resection is performed through a large hemicraniotomy as the presence of associated injuries is frequent. However, 30-40% of hematomas requiring surgery are isolated lesions, and therefore can be treated through minimally invasive approach.

METHODS

The authors describe two cases of a neuroendoscopic excision through the parietal tangential burr hole. The objective of this first phase was to treat less severe patients. Both patients had no indication of intracranial pressure monitoring (GCS >13). The planning of the procedure took into account any possible need for conversion to a classic craniotomy, but fortunately in none of the cases conversion was necessary.

CASE 01

A 35 years old male patient was admitted following falling from 3m height with left hemiparesis, and a right hemispheric acute subdural hematoma was diagnosed. The hematoma volume was ~ 35 ml.

Movie

CASE 02

A 35 years old male patient presented with severe headache after a beating and an acute subdural hematoma at the right frontal parietal region was diagnosed. The hematoma volume was 42 ml calculated by the sofware OSIRIX (r)

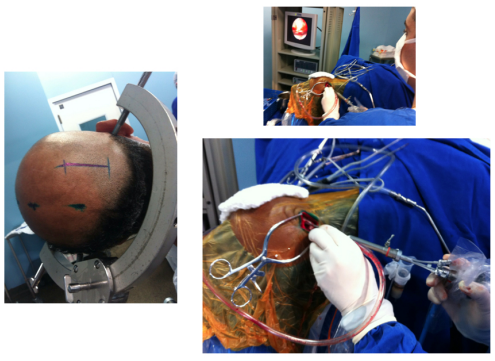
Movie

VIDEO

The video shows the intraoperative endoscopic vision. The endoscope is inserted together with a rigid aspirator enabling dissection. Most coagulation is carried out passively with haemostatics (surgicel). However it is possible to introduce bipolar coagulators.

Movie

Endoscopic Aproach to Acute Subdural Hematomas

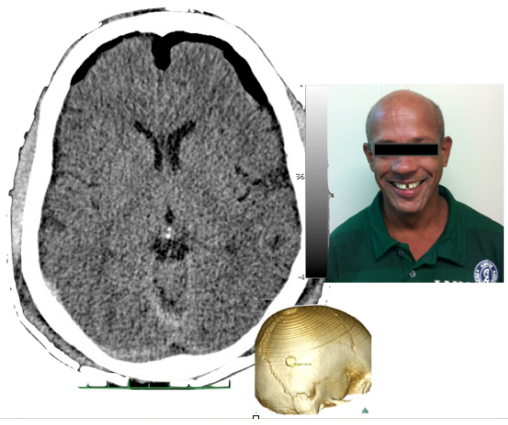


Tangentially placed Burr Hole

RESULTS

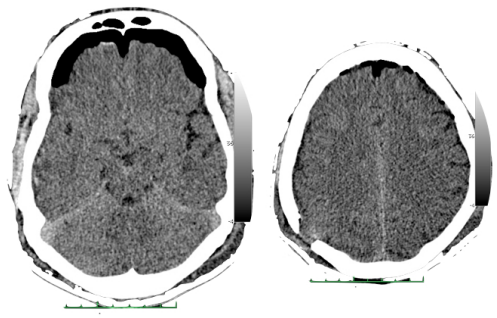
The 3D planning using the software OsiriX (r) allowed the calculation of a tangential burr hole so that it was possible to introduce the rigid endoscope and an aspirator over the entire surface of the brain. The intraoperative view of the neuroendoscope was satisfactory and allowed total resection of the hematoma safely.

Post operative results



CASE 01

Post operative results



CASE 02

Both patients had full recovery of symptoms and were discharged in two days.

CONCLUSION

The preoperative planning with 3D images associated with the use of neuroendoscope can be a minimally invasive alternative for treating patients with acute subdural hematomas without associated lesions, reducing the length of hospital stay and postoperative recovery.

LEARNING OBJECTIVES

1-Neuroendoscopy can be a minimally invasive alternative for excision of subdural hematomas

2- The Burr Hole must be placed tangentially

3- Selection of cases is the key to the success of such procedure and the conversion should always be planned and in mind

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