OUTCOME AND SAFETY OF THE SEMISITTING POSITION IN PATIENTS UNDERGOING POSTERIOR FOSSA SURGERY IN A CONSECUTIVE SERIES OF 410 PATIENTS.

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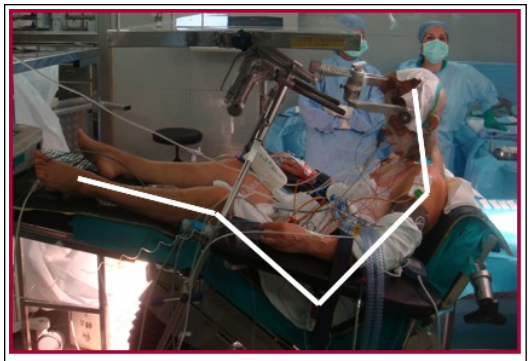


The Semi-Sitting Position

Introduction

The intraoperative positioning of patients harbouring a posterior fossa lesion is still controversial. In particular, the semisitting position has progressively been abandoned in many centres, mainly due to the perception of an increased risk of complications related to the positioning, such as air embolism, arterial hypotension or peripheral nerve damage. The aim of this study was to determine the incidence of neurological and anaesthetic complications directly associated to the semi-sitting position in an high-volume centre.

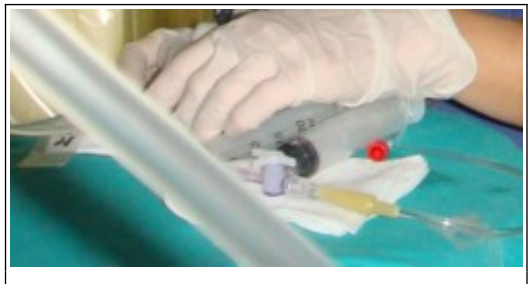
Methods

A retrospective cohort analysis of all patients undergoing posterior fossa surgery in the semi-sitting position in a single Institution from January 2009 to December 2011 was performed. In particular, all intra-operative venous air embolisms (VAEs), defined as air aspiration from a Bunegin-Albin catheter with a positive TTD associated to a ETCO2 change = 5, an O2Sat<90% or a BP drop>20%, were recorded, along with surgical complications and post-operative inpatient stay.

Table 1

PRO	CONTRA
Surgical Anatomical Orientation	Tension Pneumocephalus
Wider Surgical Field	Acute Subdural Haematoma
Venous Drainage	Peripheral Nerve Damage (Brachial Plexus)
Gravity CSF and Blood Drainage	Medullary stroke
Easy access to:	
Endotracheal tube	Venous Air Embolism
Nerve Monitoring	Paradoxical Air Embolism
CVC	Haemodynamic Instability
Chest	

Semi-Sitting Position Pro and Contra



Bunegin-Albin Catheter and Air Aspiration

Results

From January 2009 to December 2011, 410 operations in the semi-sitting position were performed. All patients were investigated pre-operatively to detect PFO.

During surgery, venous air embolism (VAE) was detected in 74 patients (18%). In 53 cases (71%) VAE was associated to respiratory changes (a drop in ETCO2 =5 mmHg or an O2Sat drop below 90%) or hemodynamic changes (a drop in SysBP=20 points), which were resolved in the course of the operation. Median and mean length of stay were, respectively, 6 and 9.16 days (sd= 11.27) in patients without intra-operative VAE and 6 days and 11.22 days (sd= 15.93) in patients with VAE during surgery (p= 0.16).

There were no surgical complications directly related to the semisitting position, such as acute subdural haematoma secondary to tension pneumocephalus, peripheral nerve damage or quadriplegia secondary to brainstem or spinal cord hypotensive ischemia.

Overall, 13 patients required a surgical cavity haematoma evacuation and 17 patients required a shunt for an acute or subacute hydrocephalus; respectively these accounted for 3.17% and 4.14% of our cases.

Table 2

Intra-op venous air embolism	NO (n = 357, 87.1%)	YES (n = 53, 12.9%)	
Post-op median instay (days)	6	6	
Post-op mean instay (days)	9,16 (sd= 11,27)	11,22 (sd= 15,93)	*p = 0,16*

Intra-op Anaesthesiologic Complications and Inpatient Stay

Table 3

Surgical Complications	NO (n = 387, 94.4%)	YES (n = 23*, 5.6%)	
Post-op median instay (days)	6	26	
Post-op mean instay (days)	6.98 (sd=3.67)	39.77 (sd=36.12)	p<0.05

*7 pts: haematoma and ventricular drain

Surgical Complications and Inpatient Stay

Conclusions

In a high-volume centre, the semi-sitting positions is a safe and effective choice for posterior fossa and cervical spine surgery. Major complications rates are low and the mean post-operative length of staying is unaffected by the position itself.