Positioning Methods and Functional Outcomes of Decompressive Hemicraniectomy

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INTRODUCTION

Decompressive hemicraniectomy (DHC) is a life-saving procedure used to treat high intracranial pressures in stroke and traumatic brain injuries (TBI). The positioning of the skull in a DHC procedure has been a subject of debate, with the choice between fixed positioning (skull pins) or non-fixed positioning (donut, pillow, or horseshoe) largely coming down to surgeon preference or institutional tradition.

OBJECTIVE

We previously demonstrated that positioning choice for DHC correlated with larger bone flap size. Here we evaluated whether positioning correlates with short- and long-term functional outcomes in patients undergoing DHC.

METHODS

A retrospective chart review of all patients treated by decompressive hemicraniectomy at our center between 2006 and 2018 was conducted. Positioning method and functional outcomes such as length of stay, pre- and post-operative GCS, discharge GCS and mRS, mRS at 3-month, 6-month, and last follow up as well as 90-day mortality.

RESULTS

Bivariate analysis showed no statistically significant differences between positioning methods in terms of admission GCS, post-operative GCS, discharge GCS and mRS, mRS at 3 month, 6 month, and last follow up. There was no significant difference in 90-day mortality. A log-rank test showed no difference between survival distributions.

CONCLUSIONS

Although we previously demonstrated a statistically significant correlation between positioning and large bone flap size (>130mm), the method of head positioning is not correlated to functional outcomes in patients undergoing DHC.