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Decompressive hemicraniectomy for malignant middle cerebral artery stroke: A case-series of a single center in Saudi Arabia

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Background: Malignant middle cerebral artery (MCA) stroke is associated with high mortality rates and high levels of morbidity among survivors. Several randomized studies have now shown that decompressive craniectomy, when performed in selected patients, can be beneficial. Here we present our initial experiences implementing decompressive craniectomy procedures in patients with brain infarcts at our hospital in Saudi Arabia.

Material & Methods: Between October 2008 and July 2011, four out of six patients with hemispheric brain infarcts complicated by malignant edema underwent decompressive craniectomy and duraplasty within 72 hours of symptom onset. Stroke severity was assessed with the National Institutes of Health Stroke Scale (NIHSS). Clinical outcome was assessed at 12 months using the modified Rankin scale (mRS).

Results: Two patients over 65 years old who were in poor medical condition were not treated surgically; both died within 4 days. Three females and one male, ranging in age from 38 to 57 years, underwent craniectomy. Of these, two died 7 and 21 days after stroke onset. One patient recovered with minor functional disability (mRS=2) while the other had a residual moderately severe functional disability (mRS=4) at final follow-up. Unexpectedly, given the small number of patients, the presence of co-morbid illness, the timeline of clinical deterioration post admission, and the lowest pre-operative GCS statistically predicted survival.

Conclusions: Decompressive craniectomy rates are increasing in clinical practice, and the procedure can be life-saving. To our knowledge, our four surgical cases are among the first reported in Saudi Arabia. We call for national awareness of the management of such cases and early intervention. We also call for pre-stroke health status/co-morbidity and both the rate and extent of neurological decline post admission to be added as potential outcome predictors in future research.

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