

Lay summary of study results

Background

It is estimated that 4,000 head-injured patients have emergency brain surgery each year in the UK. Two-thirds of head-injured patients requiring emergency surgery have a blood clot between the outer lining of the brain and the brain itself, known as an acute subdural haematoma (ASDH), which if not removed can be life-threatening. When an ASDH is surgically evacuated, a piece of skull can be left out, known as decompressive craniectomy (DC) or replaced prior to closing the skin, known as a craniotomy.

Methods

The study allowed us to perform a head-to-head comparison of craniotomy and DC as to whether one is better for the management of ASDH. Following consent, patients were allocated at random to receive either a craniotomy or a DC. Patients unsuitable for inclusion in the study had the operation deemed to be in their best interests by the operation neurosurgeon and all participants were followed up for 1 year to see how well they recovered. To assess value for money, data from UK patients was used to estimate both health and social services costs and Quality Adjusted Life Year (QALY) scores.

Results

The analysis of the randomised patients showed no significant difference in the functional outcome (measured using the Glasgow outcome score extended) of the two arms at 12 months, but there were differences in functional outcome between the groups in the observed cohort. However, the patients undergoing the decompressive craniectomy were worse before the operation. UK craniotomy patients were estimated to have both lower costs and have higher QALY scores compared to craniectomy patients.

Discussion

The results mean this study showed no significant difference in the overall functional outcome at 12 months of patients who had a decompressive craniectomy versus a craniotomy for the surgical management of an acute subdural haematoma. Craniotomy was estimated to offer better value for money compared to craniectomy with no reductions in activities of daily living.

Conclusion

Among patients undergoing evacuation of a traumatic acute subdural haematoma, a decompressive craniectomy did not result in better outcomes than craniotomy and was considered to represent value for money.