



Complications in 51 Consecutive Patients Undergoing Cranioplasty following Decompressive Craniectomy for Traumatic Brain Injury

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Introduction

Cranioplasty to repair the skull defect following craniectomy aims to restore skull integrity and improve cosmesis.

It has also been suggested that this procedure may facilitate neurological rehabilitation after traumatic brain injury (TBI).

Objectives

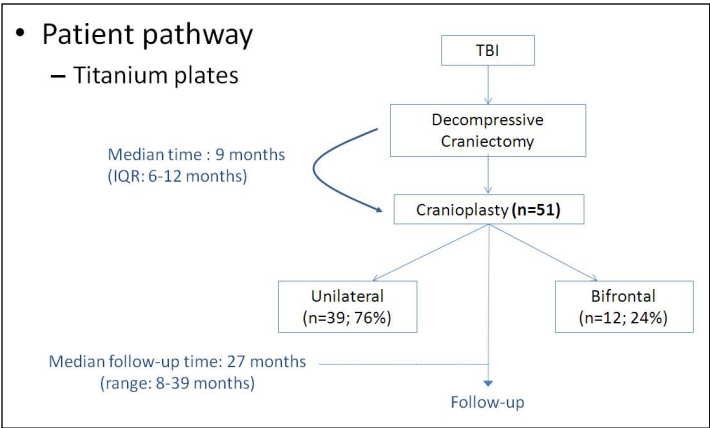
We reviewed a series of consecutive cranioplasty operations performed after decompressive craniectomy for TBI at a regional neurosurgical centre, with the aim of identifying complications.

Methods

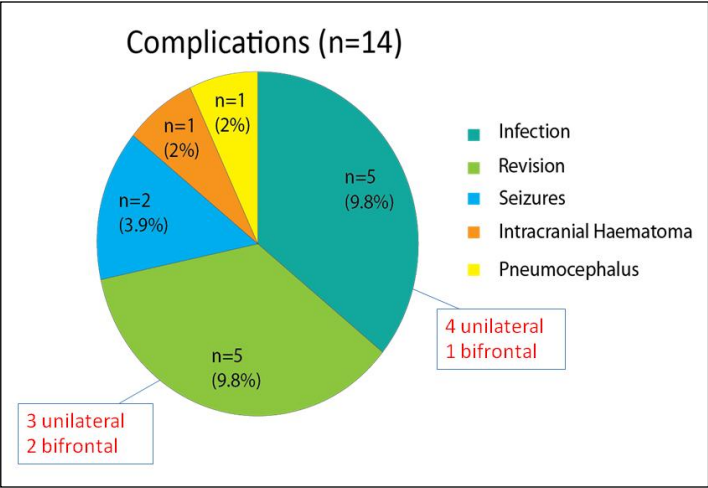
This retrospective single-centre study reviewed a series of consecutive TBI patients who underwent a cranioplasty from 1 January 2008 to 31 December 2010.

Cranioplasty removals/revisions were identified between 1 January 2008 and 31 August 2011.

Data on operations, complications and patient characteristics were extracted from operating theatre registers and patient records.



Results



Returns to theatres (n=6; excluding infections)

- 5 for revision (1 after a fall, 1 for loose portion, 1 for discomfort, 2 for cosmesis)
- 1 for evacuation of an extradural haematoma secondary to therapeutic anticoagulation for a recent pulmonary embolism

Seizures

- In 2 out of 6 patients who were established on anti-convulsants for seizures pre-cranioplasty, seizures recurred immediately post-operatively; 1 of them required ITU admission
- No patients experienced new-onset seizures after cranioplasty

Cranioplasty infections (n=5)

- The mean time between cranioplasty and removal of an infected plate was 15 weeks (range 4 – 56 weeks)
- All cases were managed with removal of plate and antibiotics
- MSSA was cultured from 4 and MRSA from 1 of the infected cases

Pertinent co-morbidities

- smoking, diabetes, immunosuppression, previous cranioplasty removal

	Infection	No infection
Co-morbidities present	4	15
Co-morbidities absent	1	31

p = 0.058

Mortality (30-day)

- Zero in this series
- Relevant due to recent case reports of sudden death after cranioplasty

Conclusions

The most commonly occurring complications were infection, revision and seizures. The complication rate in this series is comparable to that reported in the literature. Prospective multi-centre studies have the potential to answer important clinical questions (such as optimal timing) regarding cranioplasty.

Learning Objectives

By the conclusion of this session, participants should be able to describe the complications of cranioplasty.

References

1. Gooch MR et al. Neurosurg Focus 2009
2. Stiver SI. Neurosurg Focus 2009

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