Cranieotomy size, mortaity, outcome and complications: a short summary

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ABSTRACT

The craniectomy is an important surgical management for the problem of acute neurological disorder. It is widely practiced by neurosurgeons around the world. The technique for cranieotomy is various and there are many new reports concerning on the size of cranieotomy. In this short article, the authors discuss on the important topics about neurosurgery “cranieotomy size, mortality, outcome and complications.”

1. Introduction

The craniectomy is an important surgical management for the problem of acute neurological disorder. It is widely practiced by neurosurgeons around the world. The technique is completely called “Decompressive Craniectomy (DC)” This technique is indicated for elevating intracranial pressure that is unresponsive to conventional treatment modalities[1]. Howard et al. noted that improving patient selection and optimizing timing of this procedure may further improve outcome in these very severely brain injured patients[2]. Gautschi et al. noted that if intracranial pressure can not be controlled by conservative treatment methods, a DC is a possible treatment option in selected patients to reduce intracranial pressure[3]. Hence, it is no doubt that cranieotomy is a useful neurosurgical procedure for management of acute problem. However, the remained consideration is on the technique for cranieotomy. Indeed, the technique for cranieotomy is various and there are many new reports concerning on the size of cranieotomy. In this short article, the authors discuss on the important topics about neurosurgery “cranieotomy size, mortality, outcome and complications.”
2. Craniectomy size, mortality, outcome and complications

First, the authors will discuss on the previous report on “craniectomy size, mortality, outcome and complications[4].” The interesting recent publication is “The effect of craniectomy size on mortality, outcome, and complications after decompressive craniectomy at a rural trauma center [4].” Sedney et al. noted that size may be significantly related to improved mortality within our group and no significant improvement in outcome was seen[4]. Chung et al. recently reported a new craniotomy technique with an increased craniotomy size and mentioned that it was safe and effective[5]. In fact, Zweckberger et al. concluded that surgery should be performed within 48 h after the onset of symptoms and the size of the craniectomy should be at least 12 cm as a minimum[6]. Girotto et al. also reported that better functional recovery according to Glasgow Outcome Scale, which is statistically significant, was observed in patients who underwent DC where the area of craniectomy was larger than 25 cm², within the first 24 h from the time of injury[7].

However, it is against by Takeuchi and Nawashiro that the optimal size and proper technique are main determinant of success[8]. In fact, the size should not have any effect on the treatment outcome but the important factors should be underlying neurological status, evacuation and patient care[9]. Limpastan et al. reported that early decompressive craniectomy in patients with higher Glasgow Coma Scale may result in better functional outcomes[9]. Howard et al. also noted that improving patient selection and optimizing timing of this procedure may further improve outcome[10]. The importance of “time to surgery” on outcome is also reconfirmed by Kim et al[10]. Nevertheless, some reports also indicate no effect of “time to surgery”. For example, Curry et al. found only the effect of age but not “time to surgery, volume of infarction, or craniectomy size”[11].

3. Conclusion

The craniectomy size should be considered case by case. It is still the controversial issue on the optimal size of craniectomy.

Conflict of interest statement

The authors report no conflict of interest.

References


