

Journal Article




Blood loss and short-term outcome of infants undergoing brain tumour removal

Journal	Journal of Neuro-Oncology
Publisher	Springer Netherlands
ISSN	0167-594X (Print) 1573-7373 (Online)
Category	Clinical -patient studies
DOI	10.1007/s11060-008-9643-0
Subject Collection	Medicine
SpringerLink Date	Thursday, July 10, 2008

Online First

 PDF (248.8 KB)  HTML

Marco Piastra¹ , **Concezio Di Rocco²**, **Elena Caresta¹**, **Giulia Zorzi¹**, **Daniele De Luca¹**, **Massimo Caldarelli²**, **Giuseppe La Torre⁴**, **Giorgio Conti¹**, **Massimo Antonelli⁵**, **Simon Eaton⁶** and **Domenico Pietrini^{1, 3}**

- (1) Pediatric Intensive Care Unit, Catholic University "A. Gemelli" Hospital, L.go Gemelli 8, Rome, 00168, Italy
- (2) Pediatric Neurosurgery, Catholic University "A. Gemelli" Hospital, Rome, Italy
- (3) Pediatric NeuroAnaesthesiology, Catholic University "A. Gemelli" Hospital, Rome, Italy
- (4) Department of Clinical Epidemiology, Catholic University "A. Gemelli" Hospital, Rome, Italy
- (5) Intensive Care Unit, Catholic University Medical School, Catholic University "A. Gemelli" Hospital, Rome, Italy
- (6) The Institute of Child Health and Great Ormond Street Hospital for Children, NHS Trust, University College London, London, UK

Received: 31 January 2008 **Accepted:** 6 June 2008 **Published online:** 10 July 2008

Abstract *Objective* To evaluate perioperative management, early outcomes and hemocoagulative disorders in infants up to 1 year old, undergoing neurosurgery for brain tumors removal. *Design* Retrospective evaluation of prospectively collected data regarding all infants aged <1 year admitted to PICU from 1994 to 2004, following intracranial mass removal. *Interventions* none. *Setting* University Hospital PICU in a tertiary neurosurgical referral centre. *Patients and participants* All eligible infants were enrolled in the study. Population was constituted by 43 infants and subdivided in two groups, according to their intra-operative blood loss. Babies having blood loss exceeding the preoperative estimated volemia were classified in group A; the remaining babies were included in group B. *Results* Intraoperative transfusions, PICU length of stay, need for post-operative mechanical ventilation and cardiovascular support were all significantly higher in group A than in group B. No early postoperative mortality occurred. ROC analysis and multiple logistic regression showed the age as the only variable independently associated with blood loss exceeding preoperative volemia (cut-off 60.3 days; OR = 0.11, CI 0.02–0.55, sensitivity 82.4%; specificity 67%). Postoperatively, platelet count, prothrombin activity and fibrinogen resulted significantly depressed in group A, representing a dilutional coagulopathy. A marked dispersion of aPTT values was recorded in group B, where most infants exhibit aPTT

shortening, suggesting a hypercoagulability status. Three episodes of clinical disseminated intravascular coagulation (DIC) were registered in group B. *Conclusions* We illustrated the relationships between intraoperative blood loss, transfusions and haemostatic impairment in babies following brain tumor removal. Youngest infants had the higher risk to experience hemocoagulative disorders. These infants showed significantly higher impact on the global PICU burden of care, as represented by the need of mechanical ventilation, cardiovascular support and PICU length of stay.

Keywords Brain neoplasm - Infant - Intensive care - Perioperative complications - Massive blood loss

✉ **Marco Piastra**
Email: marco_piastra@yahoo.it

References secured to subscribers.

Copyright ©2008, Springer. All Rights Reserved.