

# Factors contributing to spinal cord infarction occurring in surgery performed in the prone position

D D Cochrane<sup>1</sup>

Received: 20 March 2017 / Accepted: 27 March 2017 / Published online: 31 March 2017  
© Springer-Verlag Berlin Heidelberg 2017

Dear Editor:

The recent letter to the editor by Maduri and colleagues [1] describes the rare event of paraplegia occurring during or after operation performed in the prone position for posterior fossa or other pathologies.

The authors remind us of three mechanisms that might play a role in the pathogenesis of spinal cord ischemia. Both the cervical flexion needed to attain operative exposure (the Concorde position as used in this case) and abdominal compression with venous hypertension may be modifiable and therefore could decrease a patient's risk of cord ischemia.

Our previous report [2] discussing thoracic cord infarction occurring after prone positioning for foramen magnum and C1 decompression in a patient with Morquio's syndrome describes an additional modifiable contributor (cross table bolsters) and a risk factor (chest wall deformity) that should also be considered when using the prone position. In our patient, cross table bolsters were used to support the patient in the prone position. They were positioned at the level of the upper chest and pelvis. Combined with the small thoracic cavity and sternal deformity, we believed that cardiac compression oc-

curred and resulted in cord ischemia. This event occurred in the absence of system hypotension.

Unfortunately, we did not measure motor evoked potentials (MEPs) prior to placing the patient in the prone position. We agree with the authors that MEPs if done before and after positioning would have given warning of cord ischemia as a result of positioning (either cervical flexion or cardiac compression) or arising later during the procedure.

**Compliance with ethical standards**

**Conflict of interest** None

## References

1. Maduri R, Daniel RT, Diezi M et al (2017) Paraplegia after posterior fossa surgery in prone position: can we prevent it? *Childs Nerv Syst* 33:25
2. Tong CK, Chen JC, Cochrane DD (2012) Spinal cord infarction remote from maximal compression in a patient with Morquio syndrome. *J Neurosurg Pediatr* 6:608–612. doi:10.3171/2012.2.PEDS11522

---

✉ D D Cochrane  
doug.cochrane@sickkids.ca

<sup>1</sup> Division of Neurosurgery, Hospital for Sick Children, 555 University Avenue, Toronto, ON M5G 1X8, Canada