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CORR INSIGHTS®

CORR Insights®: Cerebral Desaturation During Shoulder Arthroscopy: A Prospective Observational Study

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Where Are We Now?

Several authors [1–5] have investigated the effect of upright beach chair positioning on cerebral ischemia during shoulder surgery. Their results indicate a reduction in pressure to levels that would be below presyncopal levels for a patient who is awake. Although few catastrophic events have been documented, the increasing evidence that cerebral ischemia occurs with relative frequency is very concerning given our inability to predict which patients will tolerate this, and which ones will not. This paper adds to our knowledge by investigating a method of detecting ischemia prospectively, and by describing when these ischemic events occurred relative to the time of anesthesia induction.

Where Do We Need To Go?

The paper by Salazar and colleagues allows us to better understand when these ischemic events occur relative to the time of anesthesia induction, providing a clue as to how patients may be more safely positioned prior to shoulder surgery. It may be the case that better pharmacologic control of blood pressure is required after induction, but before positioning. A prospective study of tight blood pressure control at the time of positioning would be necessary to prove that this provides any clinical benefit. Detection and correction could be enough of a safeguard, but at this time, we have no evidence to guide us in terms of how long a patient may tolerate cerebral ischemia.

How Do We Get There?

We probably will never have the ability to say exactly how long ischemia will be tolerated without noticeable effects in all patients, given the physiological variations present in any given population and our inability to monitor cerebral ischemia precisely in real-time. Perhaps better monitoring, as presented in this study, combined with preventive control of blood pressure before positioning, may help reduce these rare brain injury events. A prospective study of blood pressure monitoring and pharmacologic control at the time of placing a patient in the beach chair position would be necessary to prove that this reduces the incidence of ischemic events. Given that there are few, if any, detectable aftereffects in most cases [3], the number needed to treat in order to see a noticeable difference in patient outcomes would be very high. Still, tighter blood pressure control after induction may prove to be life-saving for a small number of patients, and deserves further study.

This CORR Insights® *is a commentary on the article* "Cerebral Desaturation During Shoulder Arthroscopy: A Prospective Observational Study" *by Salazar and colleagues available at: DOI:* 10.1007/s11999-013-2987-6.

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