

Cardiac arrest following completion of posterior spinal fusion: a rare case of reflex anoxic seizures and its anesthetic implications.

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Goals:

1. Discuss the definition and pathophysiology of reflex anoxic seizures.
2. Identify the anesthetic implications of patients with this illness including preoperative care, intraoperative management, and postoperative care.
3. Describe anesthetic techniques of patients with this illness undergoing high anxiety and stimulating surgery, such as scoliosis repair.
4. Discuss differential of sudden cardiac arrest for patients undergoing posterior spinal fusion for scoliosis.

Case History: A 16 year old female presents for posterior correction of idiopathic scoliosis. She has no other current medical problems, no drug allergies, and takes no medications. During the preoperative interview, her parents report when she was 8 years old she had an anesthetic for a dental procedure during which they “almost lost her”. The parents were unable to provide more details about what happened, but she spent the night in the hospital as part of a planned admission for history of asthma and was discharged the next day.

How would you proceed at this juncture? Would you proceed to the operative room? Even though the parents say they cannot provide any more details, would you ask any more specific questions as to this patient’s past and her medical history? Would you cancel the surgery until more details could be obtained?

The patient was brought to the operating room, and the case proceeded without event until emergence from anesthesia, when the patient had a witnessed episode of bradycardia that rapidly progressed to asystole. It was also noted that the patient became extremely pale just prior to this event.

What is a reflex anoxic seizure? What is the proposed pathophysiology behind RAS? What can incite a reflex anoxic seizure to occur? Describe a differential diagnosis for the event this patient experienced, especially in the setting of just completing a posterior spinal fusion for scoliosis.

Chest compressions were immediately instituted, followed by epinephrine administration. Spontaneous circulation returned. The patient awoke without sequelae, but had a few more episodes of bradycardia while in the ICU overnight.

What is the immediate treatment of a patient who experiences a reflex anoxic seizure? What is the long term and prophylactic treatment of RAS? Is medical management or cardiac pacing necessary?

Post-operatively the parents revealed that the patient had been worked up a few of years ago for a couple episodes of “nearly passing out”. This workup included a cardiac evaluation that concluded no abnormal findings, and no need for further follow-up.

How is the diagnosis of reflex anoxic seizures made? What is typically involved in the work-up of these patients? Why is RAS commonly misdiagnosed as epilepsy?

Six months following this patient’s posterior spinal fusion, she returns to the operating room for a laparoscopic appendectomy. In the interim, this patient was further worked up for her past episodes of syncope, and was given the diagnosis of reflex anoxic seizures.

Knowing this patient has a history of RAS, how would you plan her anesthetic to limit or prevent these episodes from occurring during her perioperative period? How would your postoperative plan differ from normal?

References

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