43405 - INTRAOPERATIVE ASYSTOLE IN A PATIENT WITH NAIL-PATELLA-SYNDROME

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PURPOSE: To report a case of asystole during combined epidural and general anesthesia occurring in a patient with Nail-Patella-Syndrome (NPS) and discuss management of this complication in addition to the anesthetic implications of this rare genetic syndrome.

CLINICAL FEATURES: A 64-yr-old male with NPS, mild renal impairment and coronary artery disease presented for elective right hemicolectomy for colon cancer. Epidural anesthesia was induced uneventfully at T10-11 with 25 mg of 0.5% bupivacaine following a 60 mg 2% lidocaine test dose. General anesthesia was induced with propofol and fentanyl and maintained with isoflurane and oxygen enriched nitrous oxide. Following initiation of surgery and during insertion of a nasogastric tube there was a sudden loss of the patient's pulse oxymetry, end-tidal CO₂ and arterial pressure waveforms and an asystolic electrocardiogram signal was registered. Pre-drawn atropine 0.6 mg iv was immediately administered followed by a bolus of normal saline, and after an asystolic period of 20-30 seconds without chest compressions, myocardial activity commenced at 110 beats.min⁻¹ with return of normal vital signs and no further sequelae. Consent for disclosure of this case was obtained from the patient.

CONCLUSIONS: NPS is an autosomal dominant inherited condition with an estimated incidence of 1:50,000 live births and patients with NPS can present with an array of anomalies that may present difficulties to the anesthesiologist. The diagnosis of NPS is classically based on radiographic findings of a tetrad of nail and elbow dysplasia, patellar aplasia or hypoplasia, and iliac horns. Other features commonly observed include ophthalmologic (open-angle glaucoma, cloverleaf dark pigmentation of the iris, micro- and sclerocornea, cataract) and renal pathology. Neurologic findings have not initially been linked to NPS but recent reports have documented NPS patients with peripheral polyneuropathy and vasomotor dysfunction, suggesting involvement of the central and/or peripheral nervous systems. In this setting it is postulated that a vasovagal reflex involving visceral afferent activation of cardioinhibitory centers in the brainstem by esophageal stimulation upon nasogastric tube placement may have caused the asystolic event. While this would usually be a bradycardia stimulating reaction, this response could have been exaggerated by the sympatholytic combination of neuraxial block, preoperative use of beta-blocker medication, and potential autonomic dysfunction from the individuals underlying NPS. This asystolic episode was successfully managed with atropine alone though should it have lasted longer the literature suggests that cardiopulmonary resuscitation and the early use of epinephrine would have been indicated. Awareness of this uncommon disease process and its presentation may serve to caution the anesthesiologist presented with a patient with this syndrome.

REFERENCES:

- 1) *Pediatr Nephrol* 2002 17: 703-712

- 2) Am J Roentenol 2006 60: 633-641
- 3) Otolaryngology - Head and Neck Surgery 2004 130: 145-147
- 4) Anesth Analg 2005 100: 855-65