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Anesthetic Considerations for Cervical Fusion Surgery in Advanced Rheumatoid Arthritis and Severe Pulmonary Hypertension

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Abstract

67 year-old female with a history of rheumatoid arthritis (RA) and pulmonary hypertension (PH) presented for urgent C4-C5 anterior discectomy and C3-C6 posterior fusion for cervical subluxation. C-spine MRI showed severe cord impingement. The patient was brought to the operating room with minimal sedation to avoid exacerbation of PH. The radial artery was inaccessible due to flexion deformities, thus a brachial arterial line was placed. Awake fiberoptic intubation was performed with dexmedetomidine, followed by demonstration of movement of all four extremities. The anesthesia was maintained with dexmedetomidine and desflurane. The anterior and posterior portions of the procedure were performed uneventfully with no change in baseline somatosensory evoked potentials (SSEP) and motor evoked potentials (MEP). The patient was extubated at the end of the case and was followed in the intensive care unit (ICU) and was discharged to rehabilitation in good condition.

Rheumatoid Arthritis

The atlanto-axial joint is commonly affected in RA, causing atlanto-axial subluxation. Subaxial subluxation which occurs below C2 leads to earlier symptoms of nerve compression. Temporomandibular joint (TMJ) involvement may cause limitation of mouth opening and render direct laryngoscopy impossible. Fiberoptic intubation has improved the safety of airway management in surgical patients with RA. Where intubation is anticipated to be difficult because of cervical instability or a reduction in neck movement, an awake fiberoptic intubation and positioning of the C-spine is highly recommended. Long term steroid therapy causes adrenal suppression, vasculitis, thin and fragile skin, which can render intravenous (IV) access difficult. The radial artery may be inaccessible because of flexion deformities of the wrist joint. Central venous catheters may be difficult to insert because of limited neck movement.

Imaging

Post-operative MRI revealing surgical changes, improved anatomical alignment, improved canal dimensions at C4-C5

References