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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 disectomy 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 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.

Background

Past Medical History:
Severe PH, advanced RA and scleroderma, chronic steroid therapy, chronic renal insufficiency (CRI), pseudocholinesterase deficiency

Past Surgical History:
Hysterectomy, partial colectomy, multiple lysis of adhesions, wrist surgery

Imaging:
Preoperative MRI demonstrating anterolisthesis of C4 on C5 causing moderately severe central canal stenosis and cervical spinal cord impingement

Discussion

Pulmonary Hypertension

PH is a life-threatening disease with a complex pathophysiology. The most recent classification was established in 2008. The 5 main categories are: (1) pulmonary arterial hypertension, (2) pulmonary venous hypertension due to left heart disease, (3) PH associated with lung disease, (4) chronic thromboembolic PH, and (5) PH with unclear multifactorial mechanisms. All pathways eventually lead to an altered vascular endothelium and smooth muscle function through cellular remodeling. Therapy is focused on improving hemodynamics, quality of life, and survival. The most important predictor of survival in PH is RV function.

References