

Dual regional anaesthesia in a high-risk COPD patient: a case for avoiding general anaesthesia in polytrauma

Abstract

Background and Objectives:

Patients with severe chronic obstructive pulmonary disease (COPD) present major peri-operative challenges because general anaesthesia and positive-pressure ventilation may increase postoperative pulmonary complications. Regional anaesthesia offers a potential alternative in carefully selected patients. This report describes the use of dual regional anaesthesia to facilitate single-stage orthopaedic surgery in a high-risk COPD patient with polytrauma while avoiding general anaesthesia.

Methods:

A 64-year-old frail woman with oxygen-dependent GOLD stage 3 chronic obstructive pulmonary disease presented following a mechanical fall resulting in a left intertrochanteric femur fracture and a left distal radius fracture. Clinical evaluation confirmed severe chronic respiratory compromise without evidence of acute exacerbation. Following multidisciplinary discussion, a combined regional anaesthetic approach was planned using spinal anaesthesia with intrathecal morphine for femoral fixation and an ultrasound-guided axillary brachial plexus block for distal radius fixation. Dexmedetomidine sedation was titrated to maintain spontaneous ventilation throughout surgery.

Results:

Both procedures were completed during a single 3.5-hour operation without conversion to general anaesthesia. The patient remained haemodynamically stable throughout, with no intra-operative respiratory compromise. Postoperatively, she required no ventilatory support beyond her baseline supplemental oxygen, experienced no pulmonary complications, and was discharged on postoperative day seven. Follow-up confirmed progressive functional recovery.

Conclusion:

Dual regional anaesthesia with carefully titrated sedation provided a safe alternative to general anaesthesia in this high-risk polytrauma patient. This case demonstrates that combined regional techniques may reduce avoidable respiratory complications while allowing effective single-stage surgical management in selected patients with severe underlying pulmonary disease.