



ANESTHETIC MANAGEMENT OF AN ELDERLY PATIENT WITH RHEUMATIC HEART DISEASE AND CHRONIC ATRIAL FIBRILLATION UNDERGOING CRIF WITH PFNA2: A CASE REPORT

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ABSTRACT

Elderly patients with significant cardiac disease undergoing orthopedic surgery present major anesthetic challenges. The coexistence of rheumatic heart disease, severe mitral stenosis, and chronic atrial fibrillation increases the perioperative risk due to potential hemodynamic instability and thromboembolic complications. Careful anesthetic planning and vigilant monitoring are essential to maintain cardiovascular stability and prevent adverse outcomes. We report the anesthetic management of an 85-year-old female patient with rheumatic heart disease, severe mitral stenosis, ischemic heart disease with prior percutaneous coronary intervention, and chronic atrial fibrillation who underwent closed reduction and internal fixation (CRIF) with proximal femoral nail antirotation (PFNA2) for an intertrochanteric fracture. After appropriate cessation of anticoagulants and preoperative optimization, invasive arterial and central venous monitoring were established. General anesthesia was induced using etomidate, fentanyl, midazolam, and vecuronium, and the airway was secured with an i-gel supraglottic device. Anesthesia was maintained using sevoflurane with oxygen and nitrous oxide. The patient remained hemodynamically stable throughout the procedure. At the conclusion of surgery, an ultrasound-guided pericapsular nerve group (PENG) block was administered for postoperative analgesia. The patient had an uneventful perioperative course. This case highlights the importance of meticulous anesthetic planning, careful hemodynamic monitoring, and the use of multimodal analgesia techniques in managing elderly patients with complex cardiac comorbidities undergoing orthopedic surgery.

KEYWORDS : Rheumatic Heart Disease; Atrial Fibrillation; Elderly Patient; Orthopedic Surgery; PENG Block; Anesthesia.

INTRODUCTION

Orthopedic surgeries in elderly patients with significant cardiac comorbidities present unique anesthetic challenges. Conditions such as rheumatic heart disease and chronic atrial fibrillation can significantly affect perioperative hemodynamic stability. Severe mitral stenosis further complicates anesthetic management due to risks of pulmonary hypertension, reduced cardiac output, and arrhythmias.

Maintaining adequate preload, avoiding tachycardia, and preventing sudden hemodynamic changes are essential principles in such patients. This report highlights the anesthetic considerations and perioperative management of an elderly patient with complex cardiac disease undergoing orthopedic surgery.

Case Report

An 85-year-old female patient presented with a right intertrochanteric fracture following a fall and was scheduled for closed reduction and internal fixation using proximal femoral nail antirotation (PFNA2).

The patient had a history of rheumatic heart disease with severe mitral stenosis (valve area 0.9 cm², pulmonary artery systolic pressure 32 mmHg), ischemic heart disease with prior percutaneous coronary intervention, and chronic atrial fibrillation. She was receiving long-term anticoagulation therapy.

Anticoagulants were withheld appropriately prior to surgery and the patient was optimized for the procedure. Preoperative echocardiography revealed an ejection fraction of 40% with regional wall motion abnormalities.

In the operating room, standard monitoring including ECG, non-invasive blood pressure, and pulse oximetry was established. In addition, invasive arterial and central venous lines were secured for continuous hemodynamic monitoring.

midazolam, and vecuronium. The airway was secured with an i-gel supraglottic airway device. Anesthesia was maintained using sevoflurane in a mixture of oxygen and nitrous oxide with intermittent vecuronium.

Hemodynamic parameters remained stable throughout the procedure. At the end of surgery, a right-sided ultrasound-guided pericapsular nerve group (PENG) block was administered for postoperative analgesia.

DISCUSSION

Patients with severe mitral stenosis undergoing non-cardiac surgery require meticulous anesthetic planning. The primary anesthetic goals include maintaining adequate preload, avoiding tachycardia, preventing hypotension, and maintaining sinus rhythm whenever possible.

In this case, general anesthesia with invasive monitoring was selected to allow better hemodynamic control. Etomidate was chosen for induction because of its cardiovascular stability. The i-gel supraglottic airway helped minimize airway stimulation and sympathetic responses.

Postoperative pain management is another critical aspect, as inadequate analgesia may lead to sympathetic activation and hemodynamic instability. The ultrasound-guided PENG block provided effective analgesia and reduced the requirement for systemic opioids.

A multidisciplinary approach involving anesthesiologists, orthopedic surgeons, and cardiologists is essential for optimal outcomes in such high-risk elderly patients.

CONCLUSION

Elderly patients with significant cardiac disease undergoing orthopedic surgery require individualized anesthetic strategies. Careful preoperative optimization, vigilant monitoring, and the use of hemodynamically stable anesthetic agents are crucial.

General anesthesia was induced with etomidate, fentanyl,

The addition of regional analgesia techniques such as the

PENG block can improve postoperative comfort and contribute to better perioperative outcomes in high-risk patients.

Conflict of Interest

None Declared.

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