Optimum Anesthesia Technique For A Patient With Hypertrophic Obstructive Cardiomyopathy (HOCM) and Systolic Anterior Motion Of The Mitral Valve (SAM).

Stanlies D'Souza
Baystate Health, dsouzastan@yahoo.com

Follow this and additional works at: https://scholarlycommons.libraryinfo.bhs.org/all_works

Part of the Medicine and Health Sciences Commons

Recommended Citation

This Presentations, Research is brought to you for free and open access by Scholarly Commons @ Baystate Health. It has been accepted for inclusion in All Scholarly Works by an authorized administrator of Scholarly Commons @ Baystate Health.
Optimum Anesthesia Technique for a Patient with Hypertrophic Obstructive Cardiomyopathy (HOCM) and Systolic Anterior Motion of the Mitral Valve (SAM)
Stanlies D’Souza, MD
Department of Anesthesiology at Baystate Medical Center / University of Massachusetts Medical School

Introduction
Hemodynamic goals in both HOCM and systolic anterior motion of the mitral valve are similar.
These goals include higher preload, decreased heart rate, decreased myocardial contractility and maintenance of afterload.

CASE Description
A 75 year old female with recent history of increasing tiredness and echocardiographic evidence of HOCM and SAM presented for lumbar transforaminal interbody fusion. The hemodynamic goals were achieved with lactated ringer’s to maintain preload during induction with propofol/phenylephrine/fentanyl/sevoflurane/rocuronium. Following laryngotracheal spray with lidocaine, endotracheal intubation was performed with minimal increase in heart rate. Anesthesia was maintained with sevoflurane and decrease in SVR was prevented by prophylactic phenylephrine. Perioperative course was uneventful.

Discussion
HOCM is due to asymmetric left ventricular hypertrophy leading to left ventricular outflow tract (LVOT) obstruction. The degree of obstruction depends on degree of left ventricular hypertrophy.

SAM is due to the displacement of distal portion of the anterior leaflet of the mitral valve towards the LVOT. SAM is described as the dynamic movement of the mitral valve (MV) during systole anteriorly towards LVOT. It can occur without HOCM and leads to decreased left ventricular cardiac output and hypotension.

Functional abnormalities in HOCM
• Left ventricular outflow obstruction
• Diastolic dysfunction
• Systolic dysfunction
• Myocardial ischemia
• Mitral regurgitation
• Atrial and ventricular arrhythmia

Functional abnormalities in SAM
• Excessive posterior mitral leaflet closure
• Excessive mural motion
• Intraventricular septal distortion
• Mitral allopulsion
• Aortic allopulsion

Anesthetic technique for SAM and HOCM
1. Continue preoperative beta blockers
2. Management of ICD
3. Avoid neuraxial technique such as spinal
4. Hemodynamic monitoring with an invasive arterial line
5. Avoid hypotension at induction with propofol
6. Avoid tachycardia response of direct laryngoscopy
7. Avoid vasoconstrictors having positive inotropic effect
8. Use continuous infusion of phenylephrine during the anesthetic to avoid hypotension secondary to anesthetic agents
9. Avoid tachycardia response at emergence and extubation
10. Avoid hypothermia and shivering which increases the heart rate in postoperative period

Conclusion
By maintaining preload and avoiding increase in heart rate and decrease in SVR, we uneventfully managed dual problems of SAM and HOCM.

REFERENCES