University Journal of Medicine and Medical Specialities

ISSN 2455- 2852 2021, Vol. 7(5)

Anaesthetic Management of a Hypertrophic Obstructive Cardiomyopathy(HOCM) patient for Total Abdominal Hysterectomy with Bilateral Salpingo Oophorectomy

Pournami B,Suganthi K.S

Department of Anaesthesiology, Coimbatore Medical College Hospital.

Abstract

Hypertrophic Obstructive cardiomyopathy(HOCM) is the most common genetic cardiovascular disease and is transmitted as an autosomal dominant trait with variable penetrance. It is characterized by Left ventricular hypertrophy causing dynamic left ventricular outflow tract obstruction. The principal symptoms are angina pectoris, fatigue or syncope, tachydysrhythmias and heart failure. Here we report successful conduct of anaesthesia in a patient with HOCM who underwent Abdominal hysterectomy under epidural anaesthesia and developed hypotension and atrial fibrillation intra operatively and was managed successfully.

***Keywords*:** Hypertrophic Obstructive Cardiomyopathy (HOCM), epidural anesthesia, atrial fibrillation, hypotension, case management.

Introduction

HOCM is the most common genetic cardiovascular disease and is transmitted as an autosomal dominant trait. Prevalence in general population is 1 in 500. It is characterized by left ventricular hypertrophy in the absence of any other disease capable of inducing ventricular hypertrophy.The pathophysiology is related to myocardial hypertrophy, dynamic left ventricular outflow tract obstruction. The principal symptoms are angina pectoris, syncope, tachydysrhythmias, and heart failure. Pharmacological therapy with beta blockers and calcium channel blockers have been used to improve diastolic filling, reduce left ventricular outflow obstruction thereby relieving signs and symptoms.Surgery to remove the area of hypertrophy causing outflow obstruction is considered in patients with severe symptoms unresponsive to medical therapy.Management of anesthesia in these patients is directed towards minimizing Left ventricular outflow tract obstruction.

Case Report

62 year old female Elizabeth who is a known case of hypertrophic obstructive cardiomyopathy since 2010, was posted for total abdominal hysterectomy with bilateral Salpingo oophorectomy for fibroid uterus.Shewas on Tab carvedilol 3.125mg twice daily,Tab Metoprolol 25mg BD and Tab Aspirin 75mg OD. She stopped Tab Aspirin 2 days prior to surgery. In the preop evaluation she was found to have a systolic murmur in the mitral area. Her chest X ray showed cardiomegaly and her ECG showed normal sinus rhythm at 75 bpm with LVH strain pattern. Echo was done which showed an ejection factor of 83% with severe LV outflow obstruction with mild MR, AR. Other investigations were within normal limits.

She was premedicated with Tab Diazepam 10mg and Tab Ranitidine 150mg at 10pm on the day before surgery. Tab carvedilol and Metoprolol were continued on the morning of surgery. After connecting monitors like NIBP, SPO2, 5 lead ECG and securing a peripheral line- invasive blood pressure monitoring by cannulation of left radial artery after local infiltration was done. Central venous pressure monitoring by right jugular venous cannulation using 7Fr triple lumen catheter was done. Urine output monitoring by urinary catheter.5L/min continuous oxygen was administered by a face mask.

With the patient in left lateral position, T11-T12 space was identified and infiltrated with 2ml of 2% lignocaine after aseptic preparation. The epidural space was identified by loss of resistance to air technique, 18G epidural catheter was introduced and fixed at 9cm. Epidural test dose was given with 3ml of 2% lignocaine. Then slow and titrated dose epidural doses of 4+4ml 2% lignocaine was given.Intraoperatively patient developed severe hypotension BP 70/50 mmHg and was given 50mcg of phenyl ephrine. As it was not settling she was started on Injection nor adrenaline infusion at a rate of 0.06 mcg/kg/min. Patient developed atrial fibrillation and was treated with Injection Amiodarone 150mg IV bolus over 10-15 minutes followed by amiodarone infusionat 1mg/min.

At the end of surgery, her heart rate was 102/min, BP- 90/60mmHg with nor adrenaline support, SPO2-99% in room air. She was infused with a total of 700ml IV fluids. Her urine output was 100ml. Post operatively, shifted to ICU, nasal oxygen at 4L/min and head up position were given. IV fluids were given at the rate of 50ml/hour. Amiodarone infusion was continued at the rate of 1mg/ min for 6 hours followed by 0.5mg/min for 24hours. Nor adrenaline was continued at the rate of 0.06mcg/kg/min which was tapered and stopped on first post op day. Post op analgesia was given with tramadol 50mg (1ml tramadol + 9ml distilled water) via epidural catheter thrice a day. Orals were started on Post op day 1. Epidural catheter was removed on post op day 2 following which oral analgesics were continued. CVP line and arterial line were removed after 48 hours.Post operative period was uneventful, she was shifted to ward on Post op day 4 and was discharged on post-operative day 10.

Discussion

HOCM is a rare genetic disordercharacterized by massive asymmetric myocardial hypertrophy, systolic anterior motion of the mitral valve leads to left ventricular outflow obstruction and often precipitates mitral regurgitation. Ejection fraction more than 80% reflects the hypercontractile condition of the heart. All these features were present in our case. Factors such as tachycardia, hypovolemia, vasodilation and increased cardiac contractility exacerbate the obstruction. Anesthetic management entails management of specific complications like hypotension, dysrhythmias and congestive heart failure. Our patient also developed hypotension and atrial fibrillation which was managed effectively.

Intra op transesophageal echocardiography can provide information on development of dynamic outflow obstruction, this facility was not available in our institution. Monitoring of HOCM patients should be continued post operatively as cardiac failure has been noted even 48 hours post operatively. Also, good analgesia should be given to keep the patient pain free post operatively.

Conclusion

Management of anesthesia in a patient with HOCM is challenging for anesthesiologist which is even more complicated by the absence of advanced cardiac monitoring system. Key points in anesthesia management is maintenance of sinus rhythm, management of hypotension with vasopressors, immediate management of dysrhythmias and cardiac failure.

References

1.Sigdel S. and Basnet M (2014) Anesthetic management of a patient with Hypertrophic Obstructive cardiomyopathy in a place with limited resources. J Anesth Clin Res 5:427

2.Bhure AR, Marodkar AS. Successful anaesthetic management of a case of hypertrophic obstructive cardiomyopathy posted for elective caesarean section using epidural anesthesia with 0.75% ropivacaine.

3.Stoelting's Anesthesia Co-Existing Disease

4.Agarwal NK, Kapoor PM, Kiran U (2007) Anesthetic management of a patient with hypertrophic obstructive cardiomyopathy undergoing Morrow's septal myectomy. Indian J.Anaesth;51:134-136