Case Report:

Anaesthetic management for hernioplasty, in a patient with low cardiac output

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Abstract:
Anaesthetizing patients with Cardiomyopathy presents considerable challenges due to impaired ventricular filling, low cardiac output and a propensity to develop heart failure with fluid overload. It is more common in males. Sudden cardiac death resulting from, malignant arrhythmias is the most common cause of death in dilated cardiomyopathy. We report our experience of a successful management of hernioplasty in a patient with dilated cardiomyopathy using general anaesthesia.

Key words: Restrictive Cardiomyopathy, Cardiomyopathy, hernioplasty

INTRODUCTION: Restrictive Cardiomyopathy is defined as heart muscle disease that results in impaired ventricular filling with normal or decreased diastolic volume of either or both ventricles. Systolic function usually remains normal, at least early in the disease. (1)

CASE REPORT: Herewith I reported case of 55 yr old male of 53 kgs and height of 156 cms with Restrictive Cardiomyopathy was posted for Hernioplasty. He is a known Hypertensive since 5 yrs and was on medication. Holters monitoring revealed normal sinus rhythm with T wave inversions in leads “I, II, III, avl, avf”. Chest radiography revealed cardiomegaly. Echocardiography revealed severe left ventricular dysfunction, global hypokinesia of left ventricle, mild MR and LVEF: 30%. Preoperatively his cardiac condition was optimized and the patient was not in distress and afebrile. On auscultation, chest was clear, audible 1st and 2nd heart sounds, Haemoglobin 13 gm%. Renal, liver functions, electrolytes and coagulation profile are all within normal limits.

PROCEDURE: We preferred to administer G.A. so that we can have full control over the cardiovascular and respiratory system. His preoperative vital parameters were within normal limits. Premedication was done with glycopyrrolate 0.2 mg/IV, fentanyl 50 /mcg and induced with thiopentone 250 mg/IV and intubated with ETT(8), withsuxamethonium 75 mg and maintained with oxygen, nitrous oxide, sevoflurane 0.5 % and vecuronium.

OBSERVATION: The patient had wide fluctuation in pulse rate (50-128/min) and settled down after 6 mins to a regular pulse (75+_ 5 / min). After 30 mins, the B.P. shot upto 160/105 mm Hg with pulse rate of 120/min and thus morphine 2 mg IV was given. The patient’s pulse rate settled down gradually to 75/min and B.P of 130/90 mm Hg. After 60 mins, morphine 2 mg was given for the same reason. Decurarization was done with neostigmine 2.5 mg and glycopyrrolate 0.3 mg. The patient had uneventful recovery and his vital parameters were within normal limits. IV fluids 2 pint RL given. Post operative analgesia, pethidine 50 mg IM was given and was repeated after 6 hrs.
**DISCUSSION:** Restrictive cardiomyopathy is characterised by restrictive filling and restricted diastolic volume of either or both ventricles with normal or near normal systolic functions. Regional anaesthesia was avoided due to the apprehension of sympathetic blockade leading to further decrease in cardiac output. Cardiac output is usually low and is maintained by increased filling pressure and tachycardia. (2) Anaesthetizing patients with restrictive cardiomyopathy present significant hemodynamic challenges during the initial period. (3) Drugs and techniques that reduce venous return, bradycardia and decreased contractility should be avoided. (2) Inotropes increase cardiac output by reducing the left ventricular afterload. (4) However we didn’t use Inotropes as the patient’s hemodynamics was stable, probably due to balanced anaesthesia. Oliven and Mattal have recommended the use of Inotropes when there was threat due to low cardiac output. (5) In this case it wasn’t necessary.

**CONCLUSION:** Patients with restrictive cardiomyopathy can be successfully managed by balanced G.A., CVP guided volume replacement and vigilant monitoring. Inotropes may be used when there is hemodynamic instability.

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Date of submission: 19 September 2013
Date of Provisional acceptance: 08 October 2013
Date of Final acceptance: 27 October 2013
Date of Publication: 04 December 2013
Source of support: Nil; Conflict of Interest: Nil