



POST- OPERATIVE VENTRICULAR ARRHYTHMIAS AFTER CARDIAC SURGERIES – A CASE REPORT

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ABSTRACT

Cardiac Arrhythmias are very common complications after cardiac surgeries and they represent major sources of morbidity and mortality. Post - operative Atrial Tachyarrhythmias is more common than Ventricular Arrhythmias. Significance of each Arrhythmias would depend on its duration, Ventricular response rate, underlying Cardiac conditions and Co-morbidities. Hereby, we are reporting a case aged 32 years male, who presented with the complications of shortness of breath (Grade – II), chest pain since 10 days and diagnosed with congenital rheumatic heart disease and severe calcific Mitral stenosis, Mitral Regurgitation for which which patient underwent mitral valve replacement surgery. Post surgery patient developed multiple episodes of ventricular tachycardia, which was unresponsive to multiple medications. Initially we were hesitant to give beta blockers as ejection fraction was poor, but patient responded only to beta blockers under monitored environment. Poor Ejection fraction (EF) should be viewed as relative contraindication of beta blockers and in non responsive atrial tachyarrhythmias, can be given even if poor ejection fraction in monitored environment.

KEYWORDS :

INTRODUCTION:

Tachyarrhythmias are common after cardiac surgery. They usually include atrial arrhythmias, and ventricular arrhythmias. Their incidence ranges from 0.41% to 1.4% in the peri-operative period^[1].

The arrhythmias are also associated with other conditions like hemodynamic instability, electrolyte imbalances, hypoxia, hypercarbia, myocardial ischemia, myocardial infarction and some complex ventricular arrhythmias also associated with severe left ventricular dysfunction.^[2]

Anesthetic management of these arrhythmias is challenging we present this case which will highlight the post operative ventricular arrhythmias which are uncommon and treating them based on their clinical presentation.^[3]

Case Report:

A 32 Years old male came with the chief complaints of chest pain since 10 days, pain radiating to left shoulder and arm, Grade II shortness of breath since 10 days. Patient is a known case of congenital rheumatic heart disease for which he underwent mitral balloon valvuloplasty during his childhood. Patient was posted for mitral valve replacement. Preoperative evaluation showed patient in atrial flutter and x - ray showed cardiomegaly. 2D echocardiogram showed severe calcific Mitral stenosis, moderate Mitral regurgitation and dilated chambers with Poor Ejection fraction (EF). All other investigations were normal.

The anesthesia was induced with attaching all monitors and invasive lines according to standard protocol. Patient went on bypass uneventfully after heparinization and mitral valve replacement with 22 medtronic valve was done. Patient came off bypass smoothly in paced rhythm with adequate cardiac output with moderate doses of inotropes. He was shifted to

intensive care unit (ICU) on ventilator and extubated at the end of 6 th hour uneventfully. The pacing was stopped on second postoperative day with atrial fibrillation as a native rhythm, but rate was controlled.

Patient was mobilized on third postoperative day but had sudden fall episodes secondary to syncopal attacks. The rhythm showed loads of irregularity with multiple episodes of ventricular tachycardia and atrial fibrillations. Immediately, arterial blood gas was done to know about any precipitating conditions, which came as negative, and patient was started with standard doses of Amiodarone infusion, which he responded and it was continued. The beta blockers were avoided in view of poor Ejection fraction (EF).

From the fourth day onwards the repeated syncopal attacks continued, which did not respond to Amiodarone, and decision was taken to add beta blocker in lower doses even though ejection fraction was poor (EF of 25%). Titrated doses of oral beta blockers were given, which patient tolerated slowly without hypotension and adequate cardiac output, which was monitored for next 4 days continuously.

Patient improved symptomatically, and discharged on beta blocker therapy even though ejection fractions were poor and asked to follow up regularly.

DISCUSSION:

Arrhythmias are a well known side effect of cardiac surgery and are a significant contributor to morbidity, lengthened hospital stays, and monetary costs. Early postoperative arrhythmia incidence, risk factors and treatment, however, are little understood. Tachyarrhythmias and bradyarrhythmias can both appear after surgery. Atrial fibrillation is the most prevalent cardiac rhythm problem in this situation. Although postoperative atrial fibrillation frequently resolves on its own,

anticoagulant medication and either a rate or rhythm control strategy may be necessary. Conduction issues and ventricular arrhythmias can also happen, though.^[4]

Beta-blockers are effective in maintaining sinus rhythm and controlling the ventricular rate during Atrial fibrillation. Given these effects and their favourable effects on mortality, beta-blockers should be considered as first-line agents in the management of patients with Atrial fibrillation. Beta-blockers are indicated in patients with preserved left ventricular function who requires ventricular rate control in Atrial fibrillations, Atrial flutter and narrow - complex tachycardias originating at or above the AV Node.^[5,6]

Contraindications of beta blocker include Second or Third degree heart blocks, hypotension, severe congestive heart failure and reactive airway disease (Bronchial asthma), in patients with atrial fibrillations or atrial flutter associated with Wolff- Parkinson-White syndrome (WPW syndrome). Patients with the raynaud phenomenon should avoid beta-blockers due to the risk of exacerbation.^[7]

There are special problems in few circumstances where there is poor ejection fraction, along with atrial fibrillation and patient do not respond to amiodarone. Here dilemma is to give beta blockers for its favourable effect on rate control or not to give it as it has unfavourable effect on ejection fraction. we chose to give beta blockers keeping its risk benefit in mind, with close monitoring of haemodynamics . Patient responded well to beta blockers, haemodynamics improved with rate control and patient behaved well in postoperative Period.

CONCLUSION:

Poor ejection fraction is relative contraindication for beta blocker therapy. If atrial fibrillation does not respond to other pharmacotherapy, we can choose to give beta blockers even if it is contraindicated in view of risk benefit analysis. Close haemodynamic monitoring is essential in such circumstances with invasive lines in place. Adequate monitoring with titrated dosing can successfully terminate unresponsive arrhythmias.

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