

EMERGENCY CESAREAN SECTION IN A PATIENT WITH RHEUMATIC HEART DISEASE WITH GESTATIONAL HTN & NEUROCYSTICERCOSIS: AN ANESTHETIC CHALLENGE

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ABSTRACT

Heart disease complicates approximately 1% of all pregnancies. Cardiovascular abnormalities are considered the first non-obstetric cause of morbidity and mortality during pregnancy. Rheumatic and congenital heart diseases are currently the most frequent cardiopathy and hypertension the most common acquired condition found in women of childbearing age. We are hereby presenting a case of chronic rheumatic heart disease in pregnancy complicated by atrial fibrillation and Eclampsia. The patient has been managed successfully and an uneventful delivery took place.

KEYWORDS: Congenital Heart Diseases, Pregnancy, Rheumatic Heart Disease

INTRODUCTION

Heart disease complicates approximately 1% of all pregnancies (1-6). Cardiovascular abnormalities are considered the first non-obstetric cause of morbidity and mortality during pregnancy. Rheumatic and congenital heart diseases are currently the most frequent cardiopathy and hypertension the most common acquired condition found in women of childbearing age (7).

Rheumatic fever is the consequence of a previous group A haemolytic streptococcal infection, which may be cured or evolve in a serious deformation of the cardiac valves (more often the mitral valve). About 12 million people are affected by acute rheumatic fever worldwide, and about 400,000 of them develop a rheumatic heart disease, which accounts for the 25-40% of all cardiac diseases worldwide. (8)

Acquired rheumatic heart disease in some countries (i.e. New Zealand, Tunisia, Africa, Latin America, South Asia) represents the most common heart disease of pregnancy, while in western industrialized countries (characterized by low natality) it has declined and the most common cause of heart disease in pregnancy has become the congenital heart diseases. Rheumatic fever sequelae should be considered during pregnancy, especially in countries with new immigration from high risk regions. (8)

The general incidence of rheumatic fever and consequent endocarditis during pregnancy is reported as low (0.006%). General maternal mortality rate, after endocarditis complication, is very high (33%), particularly related to heart failure or to embolic events; while foetal mortality can reach 29%. (8)

Drug therapy of arrhythmia in pregnancy is limited by side effects on the foetus, and the best management requires a multidisciplinary team of obstetricians, neonatologists, cardiologists, anaesthesiologist and sometimes cardiac surgeons, to optimize maternal and foetal outcomes. (8)

The aim of our case report is to present the diagnostic and therapeutic management of a chronic rheumatic heart disease in pregnancy complicated by atrial fibrillation and eclampsia, in order to evidence the importance of heart diseases in childbearing age and the need of a prompt pre-gestational diagnosis.

CASE REPORT

A 36 year primi gravid female with history of 9 month amenorrhoea presented to us with h/o giddiness & palpitations. Patient had a past history of seizures (7 years back with last episode 3 years back) due to Neurocysticercosis of brain (diagnosed by CT scan) for which she was on Tab. Eptoin (100mg OD). Patient was also a known case of Rheumatic heart disease with Mitral stenosis with Atrial fibrillation (RHD + MS + AF) since 4 years for which patient underwent balloon mitral valvuloplasty (BMV). At present patient was on Tab. Digoxin (0.25mg OD) and Tab. Metoprolol (12.5mg OD). No positive family history of Cardiac problems was present.

Patient was admitted on the same day (20/12/13) for observation and evaluation. On Examination vitals were stable with no pallor, cyanosis and icterus. Mid diastolic murmur was present on CVS examination. Patient had normal haemoglobin (12.2 gm%) and blood indices. Liver and Renal function tests were also normal. ECG was suggestive of Atrial fibrillation while 2D echo showed Mitral Valvular Area 1.43 sq.cm (post BMV), dilated Left Atrium, trace MR, Ejection Fraction: 55%, PASP: 54mm of Hg. Subacute bacterial endocarditis (SBE) prophylaxis was given with tab Augmentin625mg for 5days.

On 2/1/14 patient developed severe PIH (BP – 186/110 mm Hg). Patient was then started with Tab. Depin (10 mg TD) and Tab Aldomet (500 mg TD). A trial of Labour was give, failing which an emergency LSCS was planned.

General anaesthesia was planned in view of patient's history of neurocystecercosis with MS in AF. Pre-oxygenation with 100% saturation and pre medication with Inj. Emset (4 mg i.v.), Midazolam (0.5mg i.v.), Fentanyl (50 mcg) was given. Inj Xylocard (50 mg i.v) before induction & 40 mg before reversal was given to attenuate hemodynamic stress response due to intubation & extubation. Induction was given with Inj. thiopentone (250 mg i.v) and Inj. Atracurium (35 mg i.v) and maintained by sevoflurane at the rate of 0.2-2%. Reversal of anaesthesia was given by Inj. Neostigmine (3mg) and Glycopyrolate (0.5mg).

The procedure was uneventful and a male child of 2.4 Kg was delivered. Patient was then shifted to CCU for observation and further management. Following treatment was started after the procedure: Inj. Eptoin (100 mg TD), Inj. Monocef (1g x 5days BD), Inj. Gentamycin (80 mg x BD), Tab. Digoxin (0.25mg OD), Tab. Metoprolol (25mg OD) and Tab. Nicardia R (10 mg BD).

DISCUSSION

Heart disease is now second only to suicide as the leading cause of maternal mortality (4). The prevalence of pregnancy complicated by rheumatic heart disease (RHD) has decreased in developed countries (1). Former ratio of 3:1 for RHD to congenital heart disease (CHD) in patients with cardiac disease complicating pregnancy is now essentially

reversed. In developing countries rheumatic heart disease is still predominant and continues to be a major cause of maternal morbidity and mortality (1, 9).

The majority of women with cardiac disease can tolerate pregnancy successfully without major complications (1, 3, 7, 10). However, in some of the patients, pregnancy can cause certain therapeutic problems, which may threaten maternal and foetal well being and survival. In the presence of maternal heart disease, the circulatory changes of pregnancy may result in adverse consequences, including death of the mother or fetus (11). Pregnancy is a challenge to women with heart disease because of the 50% increase in plasma volume and six-fold increase in the risk of thrombosis (4). In developing countries, quite a large number of women become pregnant without seeking therapeutic intervention for cardiac lesions and many of them are only diagnosed with heart disease during pregnancy (1).

Seizures in pregnancy usually result from eclampsia, epilepsy or central nervous system disorders. Neurocysticercosis, although rare, is an important cause of first-time convulsions in pregnancy. Del Brutto has proposed certain definitive and probable criteria for the diagnosis of neurocysticercosis: histology; imaging; epidemiology; serology; clinical symptoms; and follow-up scans (12). Magnetic resonance imaging (MRI) is superior to a computed tomography (CT) scan in diagnosis and follow-up studies (13). The signs and symptoms range from a single seizure to coma and death. It can be treated with minimal interruption to the course of the pregnancy and medical treatment is effective in most cases although surgery may be indicated for a few women (14).

Management of pregnant women with pre-existing cardiac problems should be undertaken by multidisciplinary teams in tertiary centres (15). In women with pre-existing cardiac disease wishing to proceed to term, cardiac status must be optimized preoperatively and preferably a planned elective delivery should be scheduled (15).

The goals for the anaesthetic management of the patient are: (1) maintenance of an acceptable slow heart rate, (2) immediate treatment of acute atrial fibrillation and reversion to sinus rhythm, (3) avoidance of aortocaval compression, (4) maintenance of adequate venous return, (5) maintenance of adequate SVR and (6) prevention of pain, hypoxaemia, hypercarbia and acidosis, which may increase pulmonary vascular resistance.

There are no controlled studies examining the best type of anaesthetic technique in these patients and guidelines and standards are lacking. The primary concern is to avoid and/or treat specific pathophysiologic changes that exacerbate the disease process. Epidural anaesthesia is the choice in the patient with moderate stenosis while in the patient with severe stenosis general anaesthesia is beneficial (16).

Choosing an epidural anaesthesia in such type of patients demand careful titration of local anaesthetic drugs with cautiously treated hypotension with fluid infusion to establish normal filling pressures. Drop in systemic vascular resistance and blood pressure should be managed with phenylephrine hydrochloride. Ephedrine will increase the heart rate thus not useful in severe mitral stenosis. A single spinal bolus is not indicated for a fear of hypotension as severe decrease in systemic vascular resistance will reflexly increase the heart rate and lower the left ventricular filling.

We preferred to give General Anaesthesia considering many factors like: (1) Foetal distress, (2) Precious pregnancy, (3) Mitral stenosis with Gestational Hypertension.

Thus we want to stress that an overall review of such patients is required to decide an anaesthetic technique and proper and adequate intraoperative as well as postoperative care is the key to successful outcome.

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