

## **Case study**

### **CASE REPORT ON VENTRICULAR SEPTAL DEFECT (VSD) WITH PULMONARY HYPERTENSION (EISENMENGER SYNDROME) WITH LSCS**

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#### **ABSTRACT**

#### **BACKGROUND**

A ventricular septal defect is a defect of the ventricular septal wall where the abnormal opening is present in between the two ventricles. Eisenmenger syndrome is a condition it may develop due to unrepaired heart defect and complication of unrepaired heart defect who is born congenitally. The congenital heart defects lead to Eisenmenger syndrome it developed due to abnormal blood circulate throughout the heart and lungs.

#### **Case report –**

The 23-year-old female was admitted to AVBRH with the chief complaints of a history of amenorrhoea since 8 months, complaints of breathlessness during exertion since the 7<sup>th</sup> month of pregnancy and she was referred to AVBRH from Amravati on date 27/1/2021. At the age of 14 years, she had a history of cyanosis at the time of fever and had recurrent episodes of fever for 2-3 yrs, lasting for 2-3 weeks. She is primigravida and had undergone LSCS on date 3/2/2021. She delivered a male child on date 3/2/2021 of birth weight 1.9kg at 12:15 pm.

#### **Discussion –**

Patient with pulmonary hypertension and Eisenmenger syndrome where the surgery is contraindicated because in Eisenmenger syndrome surgery is life-threatening. Only medical management is available to treat Eisenmenger syndrome.

#### **Conclusion –**

Ventricular septal defect in adult females where the pregnancy is contraindicated. Epidural anesthesia should be preferred while the patient undergoes the lower segment cesarian section.

This case report concludes that in this condition emergency LSCS is the first choice of treatment and oxygen therapy.

**Keywords** – Ventricular septal defect, Eisenmenger syndrome, pulmonary hypertension.

## **INTRODUCTION –**

A ventricular septal defect (VSD) is a condition in which the abnormal opening is present in between the ventricular septum and allowing the blood to move easily inside the right and left ventricle. Eisenmenger syndrome develops in a person who has congenital heart defects. It is a complication of untreated ventricular septal defects. The congenital heart defects lead to Eisenmenger syndrome where the blood abnormally circulates in the patient's heart & lungs. (1) Congenital heart disease is a heart defect that developed during fetal development at the time of the pregnancy state of the mother. Due to abnormal opening blood moves freely and oxygenated blood is mixed with deoxygenated blood and because of that blood vessels get stiff & narrow. Left ventricular pressure is more than the right & left ventricular blood going to right ventricles and in right ventricles, blood is overloaded due to that pulmonary arterial blood pressure increases it will lead to pulmonary hypertension. Due to pulmonary hypertension blood vessels in the lungs get damaged. It is a life-threatening condition but early diagnosis & treatment are effective to prevent maternal mortality. Medical management is helpful to manage Eisenmenger syndrome but surgical management is life-threatening due to that surgery is contraindicated in this syndrome. (2)

This syndrome may increase blood pressure and it directly affected the heart and lungs. This allows the blood to move inside the ventricles where the blood can mix in between oxygenated blood into deoxygenated blood this less oxygenated blood goes to the whole body it will lead to cyanosis. (3)

Significant risk factors which developed the Eisenmenger syndrome. Family background & history of heart problems also increases the potential & risk that a baby may have an underlying heart defect and may also develop Eisenmenger syndrome. Patients having genetic disorders because of genetic changes congenital heart diseases may develop and if congenital heart disease is not treated it may lead to Eisenmenger diseases. The main causes of developed Eisenmenger

syndrome are congenital ventricular septal defects, severe blunt trauma to the chest due to accident. (4)

Eisenmenger syndrome may be asymptomatic in childhood, cyanosis may present, while doing auscultation in chest murmur sound may present because of regurgitation in such cases mitral regurgitation & tricuspid regurgitation, or ventricular septal defect (VSD). Pulmonary hypertension also the main symptom in Eisenmenger symptoms. (5)

### **CASE REPORT –**

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Patient general examination was state of health was unhealthy, conscious, Body built thin, Posture erect, and hygiene was good. General parameter height was 154 cm, weight 55 kg. Vital sign is temperature 98.5°f, Pulse 68 b/m, Respiration – 20 b/m, BP – 110/70 mmHg. Auscultation murmur sound was present. In abdomen scar was present due to LSCS, Normal Bowel sound heard, No any fluid collection, no any enlargement of the organ was seen. Vaginal bleeding present due to LSCS.

### **Investigation –**

HEMOGLOBIN COUNT - 12.3 gm%

MCHC - 32.4 g/dL

MCV - 93 cub.micron

TOTAL RBC COUNT - 4.11 gm%

TOTAL WBC COUNT - 14600/cu.mm

TOTAL PLATELET COUNT - 2.41 lacs/cu.mm

USG (ULTRASOUNDSONOGRAPHY) - Single intrauterine live fetus of the average gestational age of 34 weeks and corresponding to the weight of 2235gms. On date 02/02/2021.

COLOR DOPPLER - Normal colordoppler flow and spectral waveform.

2D ECHO - 20 mm mid muscular nonrestrictive VSD with the bidirectional flow.

ECG – QP and QS ratio was  $\geq 2.2:1$

The drugs are used Inj. Metrogyl 100cc, I.V., TDS. Action - Metronidazole injections have been used throughout, and after surgical treatment to avoid infection. Metronidazole injection is in a category of antibacterial drugs. It functions by destroying the infectious bacteria & Protozoa. Inj. Pan (BD), 40mg. Action - Pantoprazole helps to reduce the harm by acid to the gastrointestinal system or inflammation of the intestine. Inj. Amoxicillin (BD) 1g, Action - it works to harm the bacteria and fight the infection. Inj. Tramadol (SOS) 50mg/ml Action - Tramadol Injection acts by avoiding the influence of painful chemicals. Suppository Zonac (TDS) 100mg, Action - It is used for treating post-operative pain and inflammation. Arginat sachet (BD) - Arginine is being used to relieve diseases of the heart & blood vessels involving congestive cardiac failure, chest pain, hypertension, and coronary artery disease. Inj. Oxytocin 10 IU (stat) Pitocin (oxytocin injection) is a hormone that induces the uterus to contract to generate labor, increase labor contractions at birth, regulate post-birth bleeding, or facilitate abortion. This route is administered in cases where any other route is not possible, such as, unconscious individuals.

## **DISCUSSION –**

23 year old female was admitted in AVBRH with the chief complaints of history of amenorrhoea since 8 months, complaints of breathlessness during exertion since 7<sup>th</sup> month of pregnancy and she was referred to AVBRH from Amravati on date 27/1/2021. At the age of 14 year she had

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Eisenmenger disease is a condition of the unique combination of cardiovascular disorders, with a reversal or bidirectional interaction by the intracardiac or aortopulmonary communications it may lead to pulmonary hypertension. Its absolute effect is not known. (6)

Eisenmenger's syndrome during pregnancy will lead to death among 50 to 65% of patients. Costly intrusive surveillance & medication which enhance & improve the patient condition. There are currently no cheaper options for treating high-risk patients without prenatal treatment. (7)

Eisenmenger syndrome is essentially present at or near to the inverted or bidirectionality shunt of an aortopulmonary, interatrial or interventricular stage with strong pulmonary vascular resistance consistent with pulmonary artery hypertension which is pulmonary hypertension. In pregnancy, women suffering from this disease causes degradation due to cardiovascular alterations in the hormonal condition of pregnancy. These patients presented in the cesarean section represent a major multidisciplinary anaesthetical problem. (8)

A multidisciplinary team strategy with comprehensive surveillance continued well into after surgery as most maternal deaths occur in the postpartum period needs to be periodical for pregnant women with Eisenmenger syndrome. (9)

Additional oxygen at all phases of work will be administered. Intense supervision is required during the peri-operative phase. Intrusive monitoring instruments such as pulmonary artery catheters were disadvantaged because of the irregular vascular abnormalities in such types of patients. Pulse oximetry is the perfect monitor to test left to right shunt. IBP will display rapid blood pressure changes. Suitable analgesia to prevent sympathetic activation should be administered. (10)

In the present case, emergency LSCS was done for the management of Eisenmenger syndrome during pregnancy. After LSCS patient condition was good and the baby was admitted to NICU because of low birth weight and patient breathing difficulty managed by oxygen therapy. (11)

**CONCLUSION –**

This study concludes that due to Eisenmenger syndrome pulmonary hypertension is increased because left ventricular pressure is more than the right ventricles and due to that left ventricular blood is going to right ventricles and blood is overloaded in right ventricles it will lead to increased pulmonary arterial blood pressure and simultaneously right ventricular blood is going to left ventricles which are deoxygenated blood then it goes to all part of the body and it may develop cyanosis and Eisenmenger symptoms.

In this patient sign and symptoms was developed during pregnancy. The patient has breathing difficulty due to that patient was admitted to the hospital. Emergency LSCS was done to prevent breathlessness and oxygen therapy was administered. There is surgical management was contraindicated in Eisenmenger syndrome because surgery is lifethreatening.

#### **COMPETING INTERESTS DISCLAIMER:**

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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