

Pregnancy and its outcome in women with and without surgical correction of Tetralogy of Fallot

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Abstract

Two pregnant lady came with Tetralogy of Fallot (TOF) for antenatal care. One of them had been operated and the other one was not operated. One who had been operated delivered a healthy baby. The other one was medically managed with oxygen, propranolol and maintenance of hydration. She delivered a normal baby with normal delivery. In repaired Tetralogy of Fallot (rTOF), the risk of pregnancy is dependant on the degree of residual haemodynamic impairment. Where a good repair has been achieved, pregnancy is usually well tolerated in the absence of pregnancy complications such as pre-eclampsia. In patients with uncorrected Tetralogy of Fallot, attention to volume status should be continued during the early postpartum period. A reliable contraceptive plan should be made, permanent sterilization is a good alternative.

Introduction

Tetralogy of Fallot is a complex cyanotic heart disease consisting of ventricular septal defect (VSD), over-riding aorta, pulmonary stenosis and right ventricular hypertrophy. Although survival into adulthood is possible uncorrected Tetralogy of Fallot is rarely seen in pregnancy for several reasons. Most patients undergo surgical correction early in their life. After surgical correction, cardiac arrhythmias are seen in some patients although these typically are not a severe problem.^{1,5} Patients without residual defects after surgical correction tolerate pregnancy well.¹⁻⁴ With uncorrected Tetralogy of Fallot pregnancy presents serious risks, including maternal mortality.^{1,6} A good neonatal outcome can be expected in patients with corrected tetralogy of fallot and no residual defects. ^{1,2} Maternal mortality is <1% but without correction the maternal mortality is 4% to 5% with a fetal loss rate of 30%. Although the risk of congenital heart disease in the fetus is (15% to 20%) greater than the general population, the true incidence in patients with Tetralogy of Fallot is uncertain.¹ Patients with previous corrective surgery should be evaluated for residual defects such as VSD. If present, consideration should be given to repair.^{2,6} After surgical correction activity should be restricted to the point of preventing fatigue. Epidural anesthesia can be

used provided the patient is adequately hydrated and it is carefully administered. So as not to further obstruct out flow and increase right to left shunting and to supplement oxygen as necessary. To prevent decrease in venous return with bearing down, operative vaginal delivery may be used to shorten the second stage of labour. This strategy is often applied in patients with corrected Tetralogy of Fallot, although it probably is not necessary.^{1,2}

Case Report-TOF

Case Report-1

A patient Mrs X, 26 years old was admitted into BIRDEM hospital with 38 weeks of pregnancy with lower abdominal pain for 5 days. She was a patient of Tetralogy of Fallot. Corrective surgery was done on 1993 at her 11 years of age. She had shortness of breath on exertion since childhood with occasional discoloration of nails aggravated on exertion. She also had several episodes of cyanotic spell in childhood.

Echocardiography and color Doppler showed Intact IAS, normal PV drainage, large sub aortic VSD, 50% aortic override and pulmonary annulus adequate. Normal RVOF, PV thickened and systolic doming good size MPA, RPA, and LPAs. Right aortic arch. Angiogram consistent with TOF

with good sized PA. Total correction of Tetralogy of Fallot was performed. After that she was doing well. During pregnancy echocardiography at term showed LVEF-60% right sided volume overload, dilatation of RA and RV with good LV systolic function. As patient had gross cephalo-pelvic disproportion, lower uterine cesarean section was done. A healthy male baby was weighted 2.9 kg and was delivered without TOF or other congenital abnormality of the foetus. Breast-feeding was given Post operative period was uneventful and discharged from hospital on her 4th postoperative day.

Case Report 2

Mrs X, 28 years old was admitted into BSMMU on 30/08/08 with the complaints of 36th weeks pregnancy with respiratory distress and chest pain for the last 3 months. She was a known case of Tetralogy of Fallot. On admission her BP was 140/100 mmHg, pulse 80b/minute. She was referred to a cardiologist. On examination Cyanosis+, clubbing present pulse 110 / mm, BP 140/100mmHg, heart S₁S₂ audible systolic murmur in the pulmonary area, lungs clear, O₂ inhalation, tablet propranolol, maintenance of adequate hydration. The patients delivered a healthy male baby of about 2 kg per vaginally. Slight perineal tear occurred and repaired in layers. She was given Inj Ceftriaxone, Inj Metronidazole and Inj Gentamicin. She was doing well postnatally and discharged from hospital on 3rd postnatal day after reviewing and advices of cardiologist.

Discussion

TOF is the most common form of congenital cyanotic heart disease. With advances in cardiac surgery and medication increasing numbers of women with TOF are reaching their childbearing years and embarking on pregnancy. Uncorrected Tetralogy of Fallot is a cyanotic condition characterized by decreased arterial oxygen saturation and polycythemia. Pregnancy can cause further decomposition because the decreased systemic vascular resistance increases the right to left shunt; shunting is also increased by a rise in the pulmonary vascular resistance resulting from the stress of labor. With uncorrected Tetralogy of Fallot, 40% of

women develop heart failure during pregnancy and 12% die; the fetal mortality rate is 36%. Pregnancy management includes bed rest, oxygen therapy and inotropic support as necessary. Because the decrease in systemic vascular resistance can be life threatening, epidural or spinal anesthesia should be avoided. Intravenous medication and paracervical or pudendal block can be utilized and the second stage of labour should be shortened.⁷

Conclusion

In repaired Tetralogy of Fallot (r TOF), the risk of pregnancy is dependant on the degree of residual haemodynamic impairment. Where a good repair has been achieved, pregnancy is usually well tolerated in the absence of pregnancy complications such as pre-eclampsia. In patients with uncorrected Tetralogy of Fallot, attention to volume status should be continued during the early postpartum period. A reliable contraceptive plan should be made; permanent sterilization is a good alternative.⁶

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