Intracardiac Repair in Adult Tetralogy of Fallots with Destroyed Lung (Post Tubercular)

Jaideep Kumar Trivedi1*, GV Raman Kumar2, K Damodar Rao3, P Ravi Chandrahas4, Kiran Tanety4 and K Rama Rao4

1Department of Cardiothoracic Surgery, Apollo Hospitals, Vishakhapatnam, India
2Department of Cardiology, My Cure Hospitals, Vishakhapatnam, India
3Department of Interventional Cardiology, My Cure Hospitals, Vishakhapatnam, India
4Department of Anaesthesiology, My Cure Hospitals, Vishakhapatnam, India

Abstract

Tetralogy of Fallot (TOF) is the commonest cyanotic congenital heart disease. In this modern era when we are doing minimally invasive cardiac surgeries (MICS) and Robotic surgeries it is quiet uncommon to see a tetralogy presenting at the age of 42 years for intra cardiac repair (ICR). We are reporting a case of adult TOF with destroyed lung (post tubercular) who presented to us with severe breathlessness. We did intracardiac repair and successfully managed the case.

Tetralogy of Fallots presenting at 42 years is relatively uncommon. TOF with destroyed lung is again a rarity. By our case report we want to give message to surgeons and cardiologist that TOF can present with tuberculosis and destroyed lung at this stage also and can be operated and successfully managed and will be benefitted by surgery.

Keywords: Congenital; Mycobacterium tuberculosis; Heart disease; Surgery

Introduction

Tetralogy of Fallot (TOF) is the commonest cyanotic congenital heart disease. When we see the natural history of TOF only two third cases survive up to 1st birthday, 50% survive up to 3 years, 25% up to 10 years and only 3% are alive at 40 years. Tuberculosis is rarely seen in TOF. Children with a cyanotic heart disease (atrial septal defect, ventricular septal defect, patent ductus arteriosus) are more prone for tuberculosis whereas low oxygen concentration in TOF is not favourable for the growth of Mycobacterium tuberculosis.

Case Presentation

We report a rare case of tetralogy of fallots in an adult with destroyed lung as a sequel of old pulmonary tuberculosis. 42 year male presented to us with severe breathlessness of grade 3 to 4. On examination he had cyanosis, clubbing and saturation of 85% on pulse oximeter. On auscultation air entry was almost absent on left side and 2-3/6 systolic ejection murmur was present on cardiac examination. Abdominal examination was normal. He was a diagnosed case of TOF with history of tuberculosis 20 years back for which he took anti-tubercular treatment for 1 year. His x-ray was suggestive of destroyed lung at this stage also and can be operated and successfully managed and will be benefitted by surgery.

Figure 1: X-ray chest showing left sided destroyed lung.

Keywords: Congenital; Mycobacterium tuberculosis; Heart disease; Surgery

Introduction

Tetralogy of Fallot (TOF) is the commonest cyanotic congenital heart disease. When we see the natural history of TOF only two third cases survive up to 1st birthday, 50% survive up to 3 years, 25% up to 10 years and only 3% are alive at 40 years. Tuberculosis is rarely seen in TOF. Children with a cyanotic heart disease (atrial septal defect, ventricular septal defect, patent ductus arteriosus) are more prone for tuberculosis whereas low oxygen concentration in TOF is not favourable for the growth of Mycobacterium tuberculosis.

Case Presentation

We report a rare case of tetralogy of fallots in an adult with destroyed lung as a sequel of old pulmonary tuberculosis. 42 year male presented to us with severe breathlessness of grade 3 to 4. On examination he had cyanosis, clubbing and saturation of 85% on pulse oximeter. On auscultation air entry was almost absent on left side and 2-3/6 systolic ejection murmur was present on cardiac examination. Abdominal examination was normal. He was a diagnosed case of TOF with history of tuberculosis 20 years back for which he took anti-tubercular treatment for 1 year. His x-ray was suggestive of destroyed lung at this stage also and can be operated and successfully managed and will be benefitted by surgery.

Figure 1: X-ray chest showing left sided destroyed lung.
Discussion

Tetralogy presenting after 40 years of age is relatively uncommon and surgery in adult TOF is very challenging. Late presentation and long standing cyanosis leads to myocardial fibrosis and RV dysfunction. Dysrhythmias are very common in this age group. Coagulation defects results in lot of blood loss and plenty of requirement of blood and blood products. Compromised lungs in this case makes surgery more complicated and difficult to manage. Congenital heart diseases are divided into two groups; cyanotic-CHD and acyanotic-CHD. Van der Merwe et al. [1] reported that patients with acyanotic-CHD (increased or normal pulmonary blood flow) are susceptible to develop pulmonary TB. However, pulmonary TB was rarely reported in patients with TOF which is a cyanotic-CHD with decreased pulmonary blood flow [1,2]. Van der Merwe et al. [1] explained this situation as reduced pulmonary blood flow and cyanosis in patients with cyanotic-CHD can inhibit growth of \textit{M. tuberculosis} whereas increased pulmonary blood flow and normal pulmonary arterial saturation in patients with acyanotic-CHD can provide a suitable environment to growth. Thus tuberculosis and TOF rarely coexist [3,4].

Conclusion

Tetralogy of Fallots presenting at 42 years is quiet uncommon nowadays. TOF with destroyed lung again a rarity. By our case report we want to give message to surgeons and cardiologist that TOF can present with tuberculosis and destroyed lung at this stage also and can be operated and successfully managed and will be benefited by surgery.

References