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Case Report
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A Case of Fallot Tetralogy Admitted for Acute Myocardial Infarction

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Abstract

We report the rare case of a 43-year-old male with untreated tetralogy of Fallot, admitted for acute inferior myocardial infarction. The etiology of the myocardial infarction was atherosclerotic heart disease. We discuss the case in detail.

Keywords: Acute myocardial infarction; Fallot tetralogy; CKMB

Introduction

Tetralogy of Fallot, a congenital cyanotic heart disease, was first reported on 1888. This anomaly described as consisting of ventricular septal defect, dextraposition of aorta, infundibular pulmonary stenosis and right ventricular hypertrophy, frequently has an accompanying atrial septal defect. Prognosis is poor for patients not treated with surgery [1]. We report a case of tetralogy of Fallot whom surviving to the fifth decade and had time to develop atherosclerotic heart disease and myocardial infarction.

Case Presentation

The patient, a 43-year-old man, was admitted for chest pain, dyspnea, and diaphoresis. Patient history revealed dyspnea cyanosis on exercise and palpitations going back to childhood. Tetralogy of Fallot was diagnosed and cardiac catheterization was carried out 13 years ago. The patient refused corrective surgery at that time. Repeated short episodes of chest pain at rest began in the preceding week. Severe chest pain, diaphoresis commenced two hours before admission. Patient had 60-pack year of smoking. Ischemic heart disease was present in the histories of his father and older brother. Patient was 178 cm tall and weighed 81 kg. Patient had no cyanosis; cheeks were pink, and there was no clubbing of the fingers. Blood pressure was 130/90 mmHg; heart rate 104 beats per minute and regular. On cardiac auscultation, fourth heart sound was present, 2/6 systolic murmur best heard on mesocardiac region was present. Other physical findings were within normal range. On the ECG, sinus tachycardia, right ventricular hypertrophy, incomplete right bundle branch block, and acute inferior myocardial infarction was seen (Figure 1). Chest X-ray revealed increased cardio thoracic index (Figure 2). On blood chemistry, serum cholesterol, triglyceride, HDL, LDL, and VLDL cholesterol were 294, 330, 28, 200, and 66 mg/dl respectively. Hemoglobin levels were 15 gr/dl and peak enzyme levels were CKMB 160 (<25 IU/l). On echocardiography dilated cardiac cavities and globally decreased left ventricular systolic function, and inferior wall akinesia were observed. There was a per membranous ventricular septal defect, dextraposition of aorta, and a peak Doppler gradient of 90 mmHg between the right ventricle and the pulmonary artery. We treated the patient conventionally during myocardial infarction. Patient refused cardiac catheterization and was discharged after an uneventful follow-up. Cardiac catheterization was done 5 months later due to recurrent chest pain and dyspnea. Tetralogy of Fallot (Ventricular septal defect, pulmonary infundibular stenosis, dextraposition of aorta), and atrial septal defect was present. Inferior wall was a kinetic on left ventriculography, and other walls were hypokinetic. On coronary arteriogram, right coronary artery was totally occluded after the acute marginal branch and there was an 80% narrowing in the proximal segment of left anterior descending artery (Figure 2). It was not possible to pass the catheter through right ventricular infundibulum into pulmonary artery because of the tightness of the passage. Oxygen saturations were 67% in right ventricle, 62% in right atrium, 45% in vena cava superior, 66% in vena cava inferior, and 97% in left ventricle and aorta.

Discussion

Tetralogy of Fallot is a frequently observed congenital anomaly of the heart [2]. The prognosis

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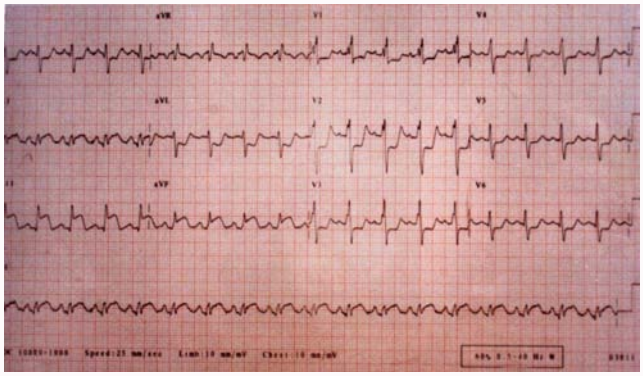

Figure 1: ECG of the patient showing acute inferior myocardial infarction.

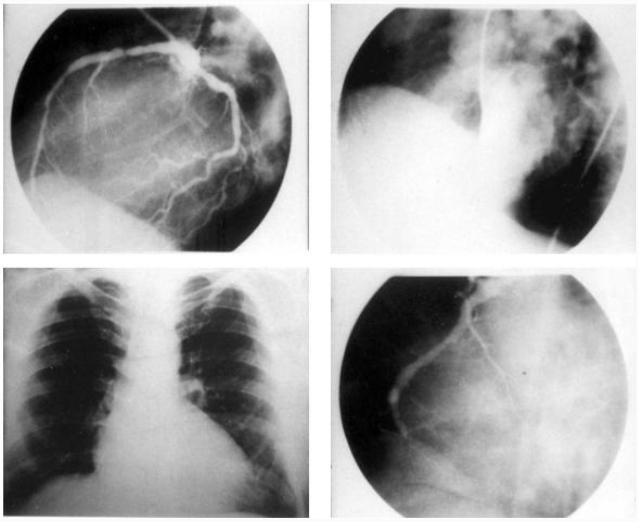

Figure 2: Left upper: Shows the proximal 80% narrowing of left anterior descending artery. Left upper: Shows the proximal 80% narrowing of left anterior descending artery. Right upper: Ventricular septal defect and the dextraposition of the aorta in the left ventriculography. Left lower: Chest X-ray shows cardiac enlargement. Right lower: Total occlusion of the right coronary artery after the acute marginal branch.

depends mostly on the ratio of right to left shunt hence the severity of pulmonary stenosis and the presence of ventricular arrhythmia [1,3]. Bertanou et al. [1] has observed that if left untreated; one third of the cases die within the first year, half within 3 years and three-fourths in ten years. Only 5% of their cases survived beyond age 30. In the aforementioned study, the age of the oldest case was 59 [1]. In a study on the surgical correction of tetralogy of Fallot the reported incidence of survival for 10 years was 94.4% [4]. The lack of rest cyanosis in our patient implies that right to left shunt was minor and can explain the longevity of the patient. The rapid deterioration of both ventricles after myocardial infarction was the cause of the early demise of the patient due to severe heart failure.

The survival of the patient to the ripe age of ischemic heart disease era, the presence of atherosclerotic coronary artery disease and the modification of the prognosis and clinical progression of the myocardial infarction by the presence of tetralogy of Fallot is the reason of our reporting. Three similar cases were reported previously by Gonzalez et al. [5] Kumar et al. [6] and Sheteermen et al. [7].

References

1. Bertranaou EG, Blactstone EH, Hazelrig JB, Turner ME, Kirklin JW. Life expectancy without surgery in tetralogy of fallot. Am J Cardiol. 1978;42(3):458-66.
2. Keith JD, Rowe RD, Vlad P. Heart disease in infancy and childhood, 3rd ed. New York: Macmillan; 1978.
3. Garson A Jr, Nihill MR, McNamara DG, Cooley DA. Status of the adult and adolescent after repair of tetralogy of fallot. Circulation. 1978;59(6):1232-40.
4. Rosenthal A, Behrendt D, Sloah H. Long-term prognosis (15 to 26 years) after repair of tetralogy of Fallot: I. Survival and symptomatic status. Ann Thoracic Surg. 1984;38(2):151-6.
5. Garcia-Fernandez F, Pavon C, Gonzalez MI, Alcasena M, González A, Martínez VP, et al. Myocardial Infarct in an adult patient with tetralogy of Fallot. Rev Esp Cardiol. 1986;39(2):157-9.
6. Kumar PR, Padmanabhan TN, Jiwani PA, Rao DS, Jaishankar S. Acute myocardial infarction in tetralogy of Fallot. Indian Heart J. 1998;50(3):329-31.
7. Shteermen E, Singh V, Nero T, Lee M, Wilentz J, Menon V. Images in cardiovascular medicine. Acute myocardial infarction in uncorrected tetralogy of fallot. Circulation. 2002;106(4):e13-4.