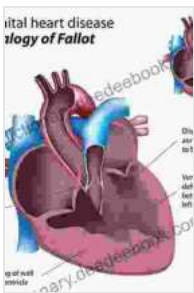


# The Right Ventricle in Adults With Tetralogy of Fallot

## Overview

Tetralogy of Fallot (TOF) is a congenital heart defect characterized by four distinct anatomical abnormalities: pulmonary valve stenosis, ventricular septal defect, right ventricular hypertrophy, and overriding aorta. In adults with TOF, the right ventricle undergoes significant structural and functional changes as a result of these defects.



## The Right Ventricle in Adults with Tetralogy of Fallot

by Roger L. Coakes

★★★★☆ 4.5 out of 5

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Text-to-Speech : Enabled

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Enhanced typesetting : Enabled

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## Anatomy and Function

The right ventricle is a muscular chamber that pumps deoxygenated blood to the lungs for oxygenation. In adults with TOF, the right ventricle is typically enlarged and hypertrophied due to the increased workload caused by the pulmonary valve stenosis and ventricular septal defect. The pulmonary valve stenosis obstructs the flow of blood from the right ventricle to the pulmonary artery, while the ventricular septal defect allows

oxygenated blood from the left ventricle to mix with deoxygenated blood in the right ventricle.

The right ventricular hypertrophy in adults with TOF is a compensatory mechanism that allows the ventricle to generate sufficient pressure to overcome the pulmonary valve stenosis and maintain adequate pulmonary blood flow. However, over time, the prolonged hypertrophy can lead to right ventricular dysfunction and heart failure.

## **Complications**

The structural and functional abnormalities of the right ventricle in adults with TOF can lead to several complications, including:

- **Right ventricular failure:** The increased workload and hypertrophy of the right ventricle can eventually lead to right ventricular failure, which can manifest as shortness of breath, fatigue, and fluid retention.
- **Arrhythmias:** The structural and electrical abnormalities of the right ventricle in adults with TOF can predispose them to arrhythmias, such as ventricular tachycardia and atrial fibrillation.
- **Sudden cardiac death:** Adults with TOF are at an increased risk of sudden cardiac death, which can occur due to arrhythmias or right ventricular failure.

## **Management**

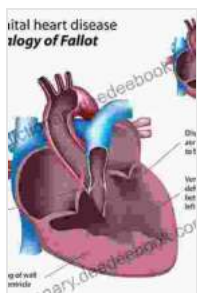
The management of adults with TOF requires a multidisciplinary approach involving cardiologists, cardiac surgeons, and other healthcare professionals. The primary goals of management are to relieve the

pulmonary valve stenosis, repair the ventricular septal defect, and prevent or treat complications.

Surgical intervention is the mainstay of treatment for adults with TOF. The most common surgical procedure is the Rastelli procedure, which involves widening the pulmonary valve, closing the ventricular septal defect, and repositioning the aorta over the left ventricle. Other surgical procedures may be necessary in some cases, such as a pulmonary artery banding to reduce pulmonary blood flow or a Fontan procedure to create a new pathway for blood flow from the right ventricle to the lungs.

Medical therapy may also be necessary to manage complications, such as diuretics for heart failure or antiarrhythmic drugs to prevent arrhythmias. Regular follow-up is essential to monitor the patient's condition and assess the need for further intervention.

The right ventricle undergoes significant structural and functional changes in adults with tetralogy of Fallot. These changes can lead to complications, such as right ventricular failure, arrhythmias, and sudden cardiac death. Surgical intervention is the primary treatment for adults with TOF, and regular follow-up is essential to monitor the patient's condition and prevent or treat complications.



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