



Keywords: Congenital heart defect; Prenatal screening; Surgical technique; Multidisciplinary care; Clinical presentation; Diagnosis; Pathogenesis; Birth defect

Congenital Cardiac Malformation (CCM) is a diverse group of congenital heart defects that can be either asymptomatic or life-threatening. The pathogenesis and clinical presentation of CCM are highly variable, ranging from minimal in presentation to complex anomalies requiring surgical intervention. The pathogenesis of CCM is multifactorial, involving both genetic and environmental factors. Advances in prenatal diagnosis and surgical techniques have improved the outcomes for many children with CCM. This article aims to provide a comprehensive overview of the pathogenesis, clinical presentation, and management of congenital cardiac malformations, focusing on the most common types.

the diagnosis of CCM often involves a combination of clinical examination, imaging techniques such as echocardiography, and when necessary, cardiac MRI or CT scan. Prenatal detection through advanced imaging has significantly improved, allowing for early intervention and planning for delivery [8].

The prevalence of congenital heart defects is approximately 1 in 100 live births. Atrial septal defect (ASD) and ventricular septal defect (VSD) are the most common, accounting for nearly half of all congenital heart defects. Advances in prenatal diagnosis have led to improved identification of these conditions, facilitating early intervention. Surgical techniques have improved significantly, with survival rates for congenital heart defects increasing from 50% in the 1970s to 90% today [9].

The management of CCM involves a multidisciplinary approach involving pediatric cardiologists, cardiographers, and specialized nursing care. Early diagnosis is crucial, as timely intervention can significantly improve outcomes. Surgical intervention is often required for ASD and VSD, with the majority of cases being successfully treated. Long-term follow-up is essential for all children with CCM, as they may experience complications such as arrhythmias, heart failure, and growth delays. Psychosocial aspects of congenital heart defects on children and families should not be overlooked [10]. Parents often experience anxiety and emotional distress upon receiving a diagnosis. Providing comprehensive education and psychological support and educational resources, is vital for enhancing the overall quality of life for families affected by CCM.

Congenital cardiac malformations are significantly contributory

to pediatric morbidity and mortality. Ongoing research into the genetic and environmental causes of these conditions is essential for developing targeted interventions. Advances in surgical techniques and medical management and improved family support systems have significantly improved outcomes for children with congenital heart defects. Continued research and clinical innovation are needed to further enhance the care and management of these children and their families.

References