Pediatric heart disease - A practical guide

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This book is a composite compendium of essentials of diseases of the heart seen in infants and children. It serves the purpose of a practical guide for virtually all those physicians involved in the care of infant and children with heart diseases. The text is easy to follow for those beginning the subspecialty of paediatric cardiology. The contents are impressive and important concepts about various types of heart diseases are discussed in a simple and clearly expressed text. Relevant images and tables complement the text for better understanding. The editors have done a great job of getting together leading experts from all over the world to write chapters, reflecting true international collaboration.

Cardiac diseases in children are generally considered a complex field by paediatricians and other physicians in training. For those new to this subspecialty, this book helps in understanding the basics of heart disease in children. For senior practicing physicians, this book serves to refresh their memory as and when need arises. There are ten sections in the book followed by five appendices.

The first section is on General Cardiology whereby epidemiology, genetics, cardiac morphology and physiology are discussed. Information given in this section is important for understanding paediatric heart diseases. The second section deals with clinical evaluation and investigation. Importance of relevant history and physical examination has been described followed by brief introduction to investigations useful for evaluating heart diseases in children. The author has emphasized the importance of simple X-ray chest and ECG for assessing these children. ECG monitoring, exercise testing and tilt test are also introduced in this chapter. Echocardiography and Doppler, the mainstay of diagnosis in paediatric cardiology, have been described in detail. This is followed by a chapter on cardiac catheterization and angiography, their indications for diagnosis of congenital heart diseases. The next chapter introduces the role of more advanced imaging tools such as MRI, CT and radionuclide tests in assessing children with heart diseases. The knowledge about these relatively newer tests is necessary for the physicians to understand the utility of these investigations.

Specific congenital heart defects are discussed in section III. A total of 80 pages are devoted to acyanotic, cyanotic and other lesions. The acyanotic group has been discussed under five heads. The chapter on left to right shunts deals with general features of shunts followed by details of specific defects; atrial septal defect, ventricular septal defect, atrioventricular septal defect, patent ductus arteriosus and aortopulmonary window and so on. A paragraph emphasizes the management of each of these shunt lesions. Details of pulmonary stenosis, double chamber right ventricle, idiopathic dilatation of the pulmonary artery, Ebstein
malformation of the tricuspid valve and other tricuspid valve diseases are discussed in the chapter on right sided malformations. Similarly, left ventricular outflow tract obstruction is described in the chapter on abnormalities of left ventricular inflow and outflow. Aortic valve regurgitation, mitral valve prolapse, mitral regurgitation and left ventricular inflow obstruction are other topics discussed briefly in this chapter. Coarctation of aorta and aortic arch interruption are clubbed with vascular rings, pulmonary artery sling, aorto-left ventricular tunnel and aneurysm of sinus of Valsalva in the next chapter. The last chapter in section III is on coronary artery lesions and deals with anomalous left coronary artery from the pulmonary artery in addition to other minor coronary lesions.

The next part of section III deals with cyanotic heart disease and has a chapter on transposition and transposition complexes. The physiology of these complex lesions has been well described with the help of schematic diagrams. Tetralogy of Fallot, the commonest cyanotic congenital heart disease is described in detail in the next chapter. Variants of tetralogy of Fallot, absent pulmonary valve syndrome, pulmonary atresia with ventricular septal defect, double outlet right and left ventricle also appear in this chapter. The next chapter in this section deals with lesions with complete mixing of systemic and pulmonary venous blood and includes total and partial anomalous pulmonary venous connection. Hypoplastic left heart syndrome and other univentricular hearts are also described in this chapter. Management of these complex congenital heart diseases has been dealt with in a simplified manner for better understanding. The last chapter of this section discusses heterotaxy (atrial isomerism), scimitar syndrome, cerebrovascular and pulmonary arteriovenous malformations.

A full section consisting of three chapters has been devoted to pericardial diseases, infective endocarditis, myocarditis and cardiomyopathies and cardiac tumours. Most of the diseases are covered, although not in much detail.

Section V deals with pulmonary hypertension. This is divided into two chapters; the first one is on idiopathic variety of pulmonary hypertension. The second chapter is on pulmonary hypertension associated with congenital heart diseases. The management of Eisenmenger syndrome is detailed in this chapter.

Section VI is a brief overview of rhythm disorders, both bradyarrhythmias and tachyarrhythmias are discussed separately. The diagnosis and management are given in a simplified manner with several practical tips.

Section VII is on cardiovascular involvement in systemic diseases. The first part is on rheumatic fever, a disease still prevalent in India. The second chapter is on connective tissue disorders and Marfan syndrome. Kawasaki and Takayasu arteritis, though very different diseases are described in the same chapter. Final part of this section is devoted to often ignored diseases, systemic hypertension and dyslipidaemia. Nomograms for blood pressure at different ages are given for both boys and girls for ready reference.

The next section discusses foetal cardiology and adult congenital heart disease in two separate chapters. Section IX deals with the various management strategies discussed under four heads. First chapter is on principles of medical management, where treatment of acute and chronic heart failure, cyanosis in a newborn including duct dependent lesions and fluid balance and nutrition are described. Next chapter is on catheter interventions where readers are introduced to various trans-catheter techniques in brief. Principles of surgical treatment relevant to a physician or cardiologist are discussed in the next chapter. Final chapter is on heart, lung and heart and lung transplantation, the indications, management in post-operative period, complications and outcome results.

The last section is on common clinical problems encountered in practice. The chapters include evaluating an asymptomatic child with a murmur, syncope, chest pain, palpitations, stridor, cyanosis and activity restrictions. All these chapters are of great utility for practicing physicians who may not be much into paediatric cardiology.

Authors have added five appendices in the last part of the book. Appendix A describes a flow chart for resuscitation of a child presenting with one of the arrhythmias or cardiac arrest. Appendix B provides explanation for commonly used terms in paediatric cardiology. Appendix C is on indications and dosages of commonly used drugs in a tabular form. Appendix D is on newer guidelines for infective endocarditis prophylaxis. Guidelines for using anticoagulants in children are described in appendix E.

The chapters on specific congenital heart disease could have been more detailed as a large part of practice of paediatric heart disease is nothing but congenital heart disease in the real world. The references in “further reading” section, given at the end of each chapter could have included some more landmark articles. Overall, this publication provides a good practical referral textbook for those involved in the care of children with heart diseases.