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Basics of Electrocardiography

Luthra's ECG Made Easy[®]



Revised & Edited by
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7th Edition



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ABSENCE OF HEART DISEASE

Normal subjects

- Sinus arrhythmia
- Incomplete RBBB
- Minor axis deviation
- Upsloping ST depression
- T wave inversion in aVR and V₁
- Supraventricular extrasystole

Athletic built

- Sinus bradycardia
- Sinus arrhythmia
- Junctional rhythm
- First degree AV block
- Wandering pacemaker
- Tall R waves, deep Q waves
- Upsloping ST segment elevation
- Tall and symmetrical T waves.

CONGENITAL HEART DISEASE

Atrial septal defect

- Incomplete RBBB
- Right atrial hypertrophy

Ventricular septal defect

- Biventricular hypertrophy

Right ventricular hypertrophy

- Fallot's tetralogy
- Pulmonary stenosis
- Eisenmenger's syndrome

Left ventricular hypertrophy

- Aortic stenosis
- Coarctation of aorta
- Patent ductus arteriosus
- Hypertrophic cardiomyopathy.

Ebsteins anomaly

- ECG findings-tall and broad P waves (Himalayan P wave)
- Prolonged PR interval
- RBBB
- Fragmented QRS complex
- WPW syndrome

VALVULAR HEART DISEASE

Mitral stenosis

- Atrial fibrillation
- P. mitrale in sinus rhythm
- Right ventricular hypertrophy

Mitral regurgitation

- Atrial fibrillation
- P. mitrale in sinus rhythm
- Left ventricular diastolic overload

Mitral valve prolapse

- Sinus tachycardia
- Premature beats
- T wave inversion in inferior leads
- ST depression in precordial leads

Aortic stenosis

- Left bundle branch block
- Left ventricular hypertrophy
- Left ventricular strain pattern

Aortic regurgitation

- Left anterior hemiblock
- Left ventricular diastolic overload

CORONARY ARTERY DISEASE

Myocardial ischemia

- T wave inversion
- ST segment depression
- Prolonged QT interval

Myocardial infarction

- Sinus tachycardia
- Deep Q waves
- Low R wave height
- T wave inversion
- ST segment elevation
- Ventricular premature beats.

MYOCARDIAL DISEASE

Acute myocarditis

- Sinus tachycardia
- Wide QRS complexes
- QRS electrical alternans
- Prolonged QT interval
- Ventricular arrhythmias

Acute rheumatic fever

- Sinus tachycardia
- First degree AV block
- T wave flattening/inversion
- ST segment depression/elevation

Dilated cardiomyopathy

- Sinus tachycardia
- Bundle branch block
- Left anterior hemiblock
- Reduced QRS complexes
- Ventricular tachyarrhythmias

Hypertrophic cardiomyopathy

- Left anterior hemiblock
- Left ventricular hypertrophy
- Deep T wave inversion
- Prolonged QT interval.

PERICARDIAL DISEASE

Acute pericarditis

- Sinus tachycardia
- Upright T waves
- Concave ST elevation
- PR segment depression

Pericardial effusion

- Sinus tachycardia
- Low QRS voltage
- Electrical alternans
- Nonspecific T inversion.

PULMONARY DISEASE

Pulmonary embolism

- Sinus tachycardia
- Atrial fibrillation
- P. pulmonale
- $S_1Q_{III}T_{III}$ pattern
- Right axis deviation
- Clockwise rotation

- Right bundle branch block
- Right ventricular hypertrophy

Chronic pulmonary disease

- Sinus tachycardia
- Atrial fibrillation
- P. pulmonale
- Right axis deviation
- Right bundle branch block
- Right ventricular hypertrophy
- Nonprogression of the R wave.

Luthra's ECG Made Easy®

Key Features

- Presents the subject of ECG in a crisp and practically relevant format, which is not just easy to comprehend but also handy for reference
- Initial chapters deal with basic principles, nomenclature of deflections and calculation of heart rate and electrical-axis
- Presents up-to-date, well-explained, evidence-based concepts to explain pathophysiology of ECG patterns
- A new chapter on ECG recording during pacemaker rhythm has been introduced
- Easy-to-read and user-friendly presentation merging with fluid scientific information and latest clinical data make for an enhanced reading experience
- Valuable resource for medical students, resident doctors, paramedical staff and clinicians involved in heart care.

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