



تقنيات اجهزة تخدير الكورس الاول

ELECTROCARDIOGRAPHY



Sawa University

College of health and medical
techniques

Department of Anesthesia

Four Stage

جامعة ساوة

الاهلية

كلية التقنيات الصحية
والطبية

قسم تقنيات التخدير

المرحلة الرابعة

محاضرة رقم 5

الجانب النظري

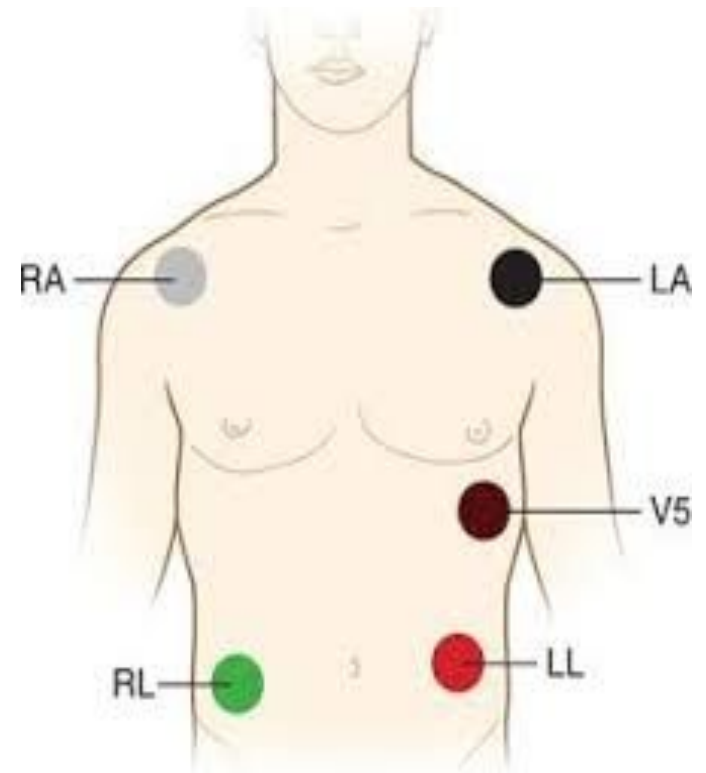
Lecture No5.

Theoretical

استاذ المادة :م.د سامي رحيم حسن

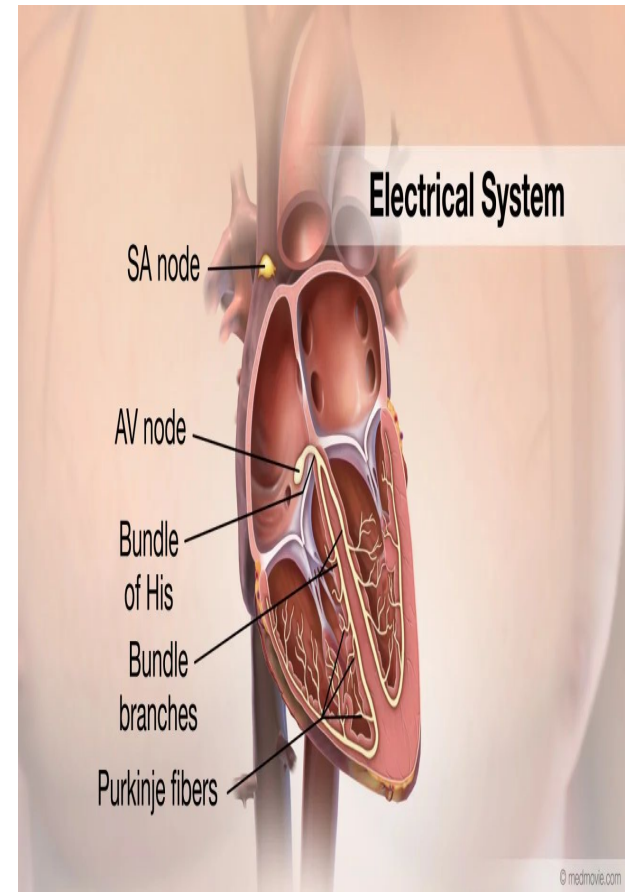
Introduction

- - ECG records the electrical activity of the heart over time.
- - It is an essential tool in anesthesia and critical care.
- - Provides information about heart rate, rhythm, and conduction.



Electrical Activity of the Heart

- - Impulse starts from the SA node
→ atria → AV node → Bundle of His → Purkinje fibers.
- - This sequence causes atrial and ventricular contraction.
- (Insert a labeled heart conduction diagram here)



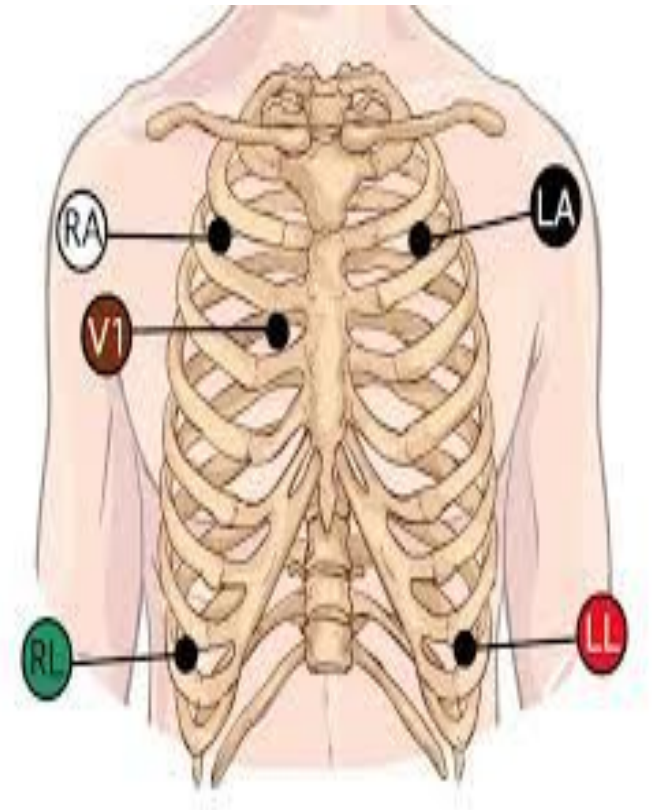
ECG Components (Waveforms)

- P wave – Atrial depolarization
- QRS complex – Ventricular depolarization
- T wave – Ventricular repolarization
- PR interval – Time from atrial to ventricular activation
- ST segment – Early phase of ventricular repolarization



ECG Leads

- - Limb Leads: I, II, III
- - Augmented Leads: aVR, aVL, aVF
- - Chest Leads: V1–V6
- - Monitoring leads in anesthesia often use Lead II or V5.



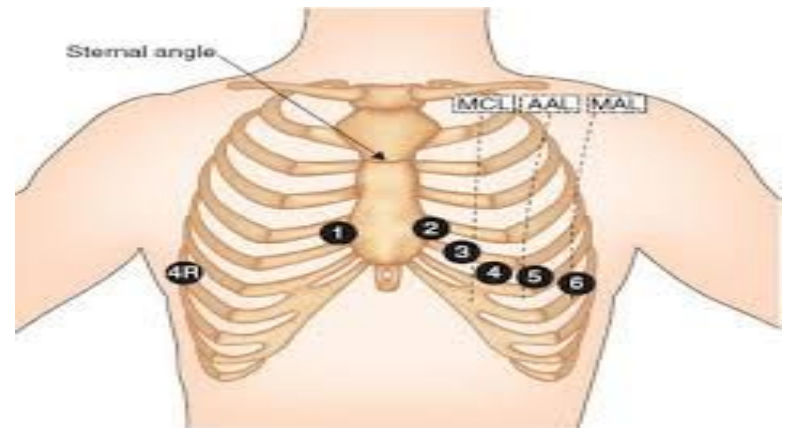
ECG Machine

- Composed of:
 - **Electrodes & cables**
 - **Amplifier**
 - **Display or printer**
- **Modern ECGs are integrated into anesthesia monitors.**



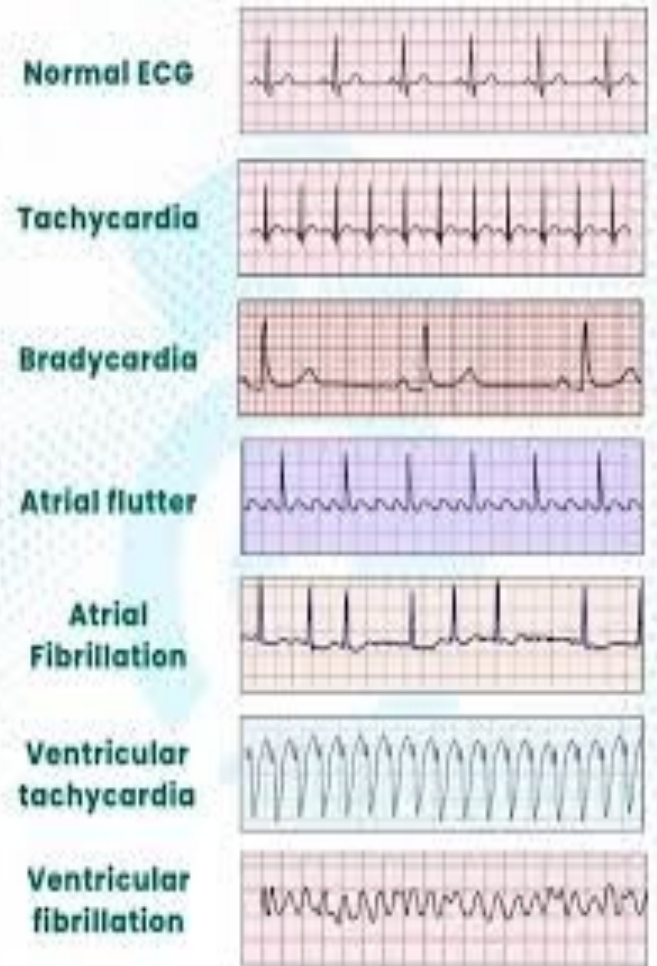
ECG in the Operating Room

- Used for continuous monitoring of cardiac function.
- Detects:
 - Arrhythmias
 - Ischemia
 - Electrolyte abnormalities
- Critical during induction and recovery from anesthesia.



Common ECG Abnormalities

- - Bradycardia – slow heart rate
- - Tachycardia – fast heart rate
- - Atrial fibrillation (AF)
- - Ventricular fibrillation (VF)
- - ST segment elevation or depression – may indicate ischemia



Safety and Troubleshooting

- - Ensure skin preparation before electrode placement
- - Avoid electrical interference from other devices
- - Check for loose leads and proper grounding



References

- • Miller's Anesthesia, 9th Edition
- • Stoelting's Basics of Anesthesia
- • ECG Interpretation Made Easy – Dale Dubin



Thank You