SNS COLLEGE OF ALLIED HEALTH SCIENCES

SNS Kalvi Nagar, Coimbatore - 35

Affiliated to Dr MGR Medical University, Chennai

DEPARTMENT OF CARDIO PULMONARY PERFUSION CARE TECHNOLOGY

COURSE NAME : PRINCIPLES OF PERFUSION TECHNOLOGY I

II nd YEAR

TOPIC : HEART BLOCK

WHY DOES AVB OCCUR?

- Disease of the atrioventricular node
- A change in the normal transmission of the electrical signal through the conduction of the system

TYPES OF ATRIOVENTRICULAR BLOCKS

- 1st degree AV block
- 2nd degree AV block, Type I
- 2nd degree AV block, Type II
- 3rd degree AV block

FIRST DEGREE HEART BLOCK

- Signal originates on SA node
- Signal conducted to ventricles
- But there is a delay in the conduction pathway

FIRST DEGREE AV BLOCK

- One P wave to each QRS Complex
- A constant PR interval
- PR interval of greater than 0.2sec
- Bradycardia or Tachycardia

Etiology : Prolonged conduction delay in the AV node or Bundle of His

2nd DEGREE HEART BLOCK

- Divided into two types
- Type I – Wenkeback (Mobitz type I)
- Type II - Mobitz type II

2ND DEGREE AV BLOCK, TYPE I

- PR interval progressively lengthens
- One non conducted beat – (P wave not followed by QRS)
- Following beat has shorter PR interval

Etiology: Each successive atrial impulse encounters a longer and longer delay in the AV node until one impulse (usually the 3rd or 4th) fails to make it through the AV node

TYPE II SECOND DEGREE BLOCK

- Type II
- Not as common as type I and often leads to complete heart block
- Block usually within or below the Bundle of His

2ND DEGREE AV BLOCK TYPE II

- Normal and constant PR interval in the conducted beats and not prolonged
- Dropped beats
- QRS complex may appear widened
- Note : P wave may only show itself as a distortion of the T wave
- 2:1 conduction – Two P waves as per QRS complex

2ND DEGREE AV BLOCK TYPE II

Etiology : Conduction is all or nothing (no prolongation of PR interval); typically block occurs in the Bundle of His.

3RD DEGREE AV BLOCK

- The P-P interval and R-R interval will be regular and consistent. Atria will beat at intrinsic rate (60-80). Ventricles (20-40)
- No relation between P and QRS complex.
- Note QRS may be abnormal shape (P wave and abnormal spread of depolarisation)

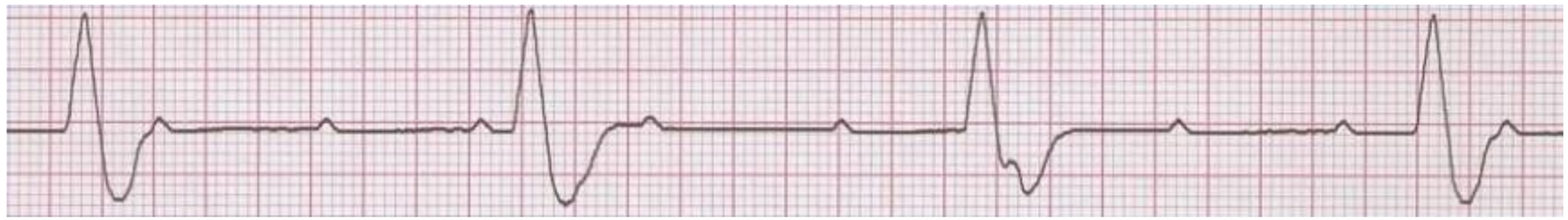
3RD DEGREE AV BLOCK

- Etiology ; There is complete block of conduction in the AV junction, so the atria and ventricles form independently of each other. Without impulses from the atria, the ventricles own intrinsic pacemaker kicks in at around 30-45 beats/minutes
- Most dangerous

DIFFERENTIATING ATRIOVENTRICULAR BLOCK

- Examine atrial rate
- Examine ventricular rate
- P waves
- PR interval
- QRS complex

REMEMBER



- When impulse originates in a ventricle, conduction through the ventricles will be inefficient and the QRS will be wide and bizarre.

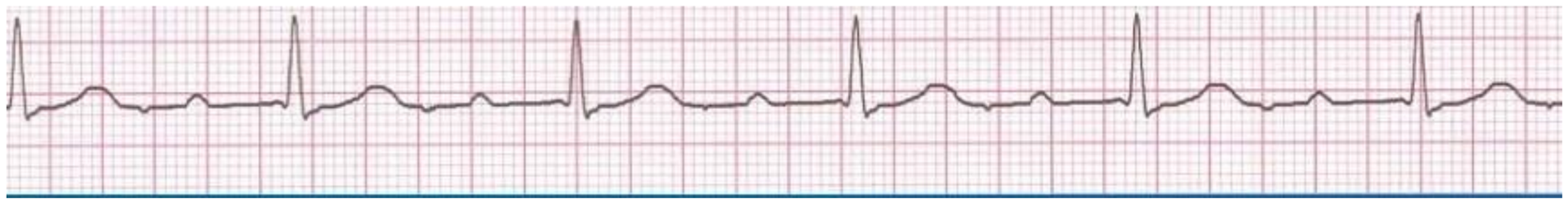
RHYTHM 1

▪ RATE	• 50 BPM
▪ REGULARITY	• REGULARLY IRREGULAR
▪ P WAVES	• NL, BUT 4TH NO QRS
▪ PR INTERVAL	• LENGTHENS
▪ QRS DURATION	• 0.08S
INTERPRETATION	• 2ND DEGREE AV BLOCK TYPE 1

RHYTHM 2

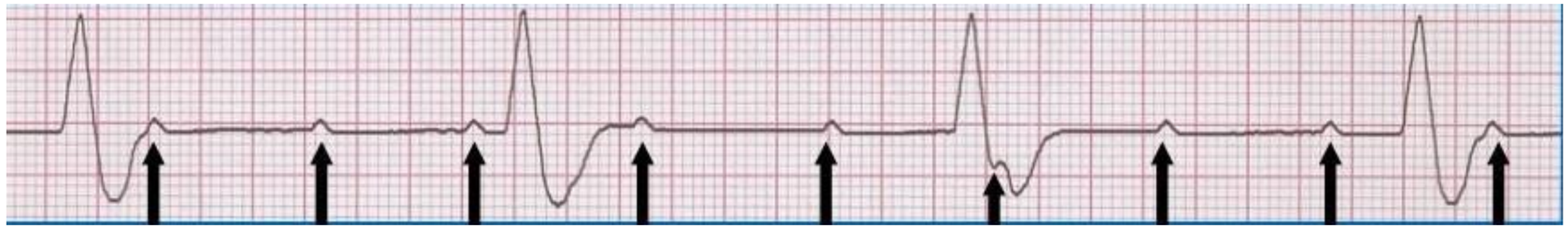
▪ RATE	• 40 BPM
▪ REGULARITY	• REGULAR
▪ P WAVES	• NL, 2 OF 3 NO QRS
▪ PR INTERVAL	• 0.14S
▪ QRS DURATION	• 0.08S
INTERPRETATION	• 2ND DEGREE AV BLOCK TYPE II

RHYTHM 3



▪ RATE	▪ 60 BPM
▪ REGULARITY	▪ REGULAR
▪ P WAVES	▪ NORMAL
▪ PR INTERVAL	▪ 0.36S
▪ QRS DURATION	▪ 0.08S
INTERPRETATION	1ST DEGREE AV BLOCK

RHYTHM 4



▪ RATE	▪ 40 BPM
▪ REGULARITY	▪ REGULAR
▪ P WAVES	▪ NO RELATION TO QRS
▪ PR INTERVAL	▪ NONE
▪ QRS DURATION	▪ WIDE >0.12S
INTERPRETATION	1ST DEGREE AV BLOCK

MANAGEMENT

- Assess the high risk patient
- Monitor the ECG of the patient
- Assess the family history of heart disease
- Assess the history of smoking and alcoholism
- Monitor lab values frequently especially serum cholestrol levels
- Assess for CAD
- Monitor vital signs
- Instruct to avoid high fat and oil rich diet

REFERENCES

Text book of Pathology Harsh Mohan

THANK YOU