- Permanent
- Controlled

Quiz 5

Conditions where short duration atrial fibrillation is seen

- Myocarditis
- AMI
- Digitalis toxicity
- Electrolyte imbalance
- Severe infections—pneumonia

Quiz 6

Most important endocrine cause of hypertension

Thyrotoxicosis

Quiz 7

Complications of atrial fibrillation

- Systemic embolization (from LA)—stroke, AMI and limb gangrene
- Pulmonary embolism (from RA)
- CHF

Quiz 8

Lone atrial fibrillation

a. Fibrillation without any apparent, underlying or structural cardiac cause? Genetic cause.
b. Could present as paroxysmal/persistent atrial fibrillation.

Quiz 9

Ashman phenomenon (Ashman beats)

In atrial fibrillation when long ventricular cycle is immediately followed by a short ventricular cycle, the beat ending the short cycle shows aberrant conduction almost always through the right bundle.

Long RR → Short RR → Wide complex aberrancy with RBBB morphology.

Quiz 10

What is the definition of Ashman phenomenon?

Duration of the refractory period is directly proportional to the length of the preceding RR interval.

Quiz 11

What is the mechanism of Ashman phenomenon?

Sudden lengthening of the cycle (as in atrial fibrillation), suddenly lengthens the refractory period resulting in a delay or block in the conduction of the ensuing impulse causing it to be conducted aberrantly.

4. Measures to prevent thromboembolism
5. Warfarin anticoagulation (maintain INR 2–3).

QRS VARIATIONS

QRS Alternans in Sinus Rhythm in Pericardial Tamponade

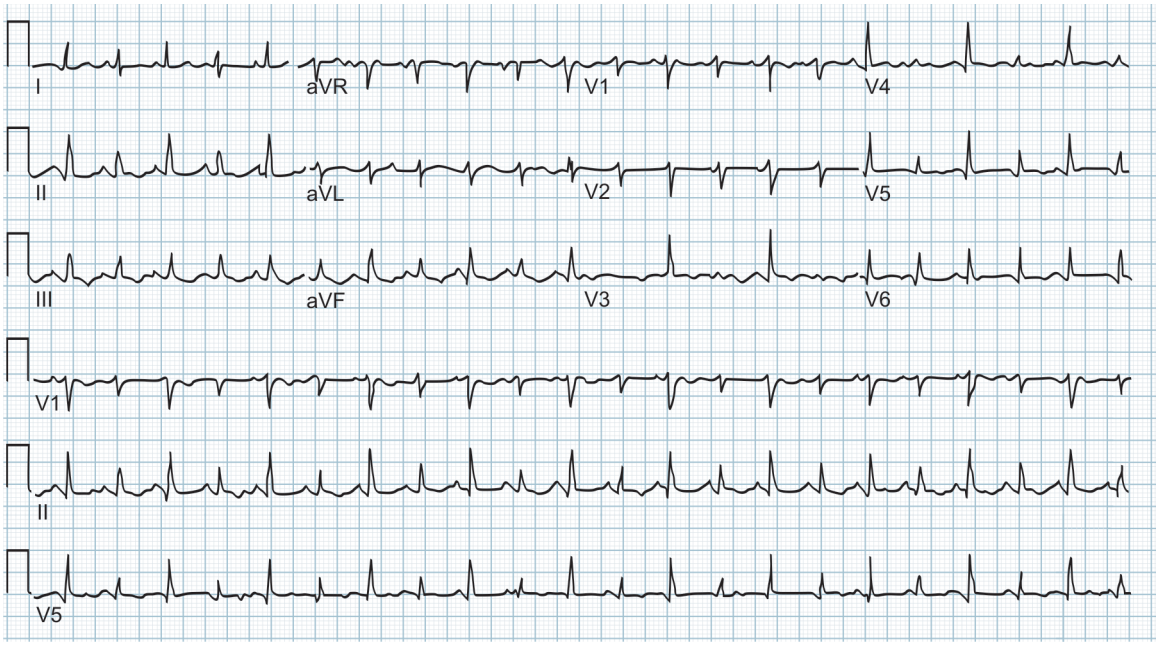

Fig. 9

Observations: The basic rhythm is sinus rhythm with tachycardia (sinus tachycardia)—HR about 135/min

P wave is normal

PR interval is normal

QRS: Note that the alternate QRS is smaller—alternate change in the morphology of the QRS complexes.

T waves (wherever seen) are similar (lead II)

The phenomenon of QRS alternans is being demonstrated.

Quiz 1

What are the proposed mechanisms of electrical alternans?

Proposed mechanisms for QRS alternans:

1. Anatomical oscillations of the heart in pericardial effusion.
2. Alternate prolongation of the refractory phase of some part of the heart.

These result in the alternate change in the QRS morphology.

Because the origin of the impulse does not change, the RR interval remains constant.

Quiz 6

Are there any medical options for the treatment of bradycardia?

Oral theophylline and beta-adrenergic agonists have been tried.

They increase the heart rate and reduce the duration of the sinus pauses.

But they do not prevent recurrent syncope.

Stoppage of the causative drugs and other extraneous factors must be promptly attended to.

GIANT T WAVE

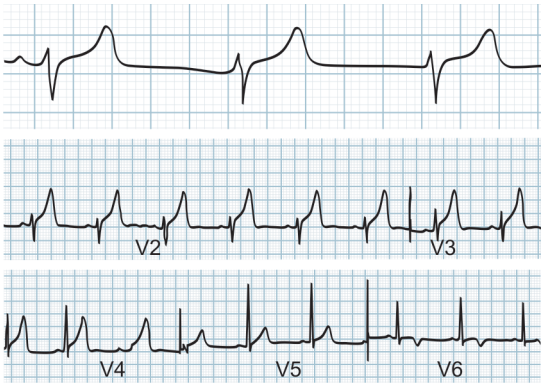

Fig. 16

Normal T Wave Features

Indicates ventricular repolarization.

Positive in I, II, V3–V6; inverted in aVR, V1, positive/flat/biphasic in III, aVL, aVF, V1, V2.

Juvenile T wave (inverted T in healthy youngsters) may be seen in V1–V3

Normal T wave amplitude—<6 mm in limb leads; <10 mm in chest leads

T waves are asaid to be tall if >6 mm in limb leads and >10 mm in chest leads

Flat/slightly inverted T may indicate nonspecific T wave changes.

Causes of Big/Giant T Waves on ECG

1. Early repolarization syndrome—A normal variant
2. Acute MI—Hyperacute phase
3. Hyperkalemia
4. CVS—Sometimes

Some Points to Distinguish Large T Waves of Hyperkalemia and Large T Waves of AMI

1. Wide based T wave suggest AMI (hyperkalemia has narrow based T wave)
2. U wave rule out hyperkalemia.
3. Tenting, peaking narrow T wave suggest hyperkalemia.
4. *Pardee sign:* Upward coving of ST segment followed by an inverted T, seen in AMI.

- Electrolyte disturbances—Hypokalemia, hypomagnesemia
- CAD—IHD
- Cardiomyopathies
- Hypoxemia—COPD
- Reperfusion—Post-thrombolysis
- Could be normal in healthy youngsters—disappears with exercise.

Quiz 3

What is ventricular bigeminy?

A couple of one sinus beat and a VPC—every alternate beat is a sinus beat and every other alternate beat is a VPC. Classically seen in digitalis toxicity.

Quiz 4

What is an interpolated VPC?

A VPC sandwiched between 2 normal sinus beats without a compensatory pause.

Quiz 5

What is a parasystole?

Ventricular parasystole is one of the pararrhythmias characterized by VPCs.

Widely varying coupling interval between the VPC and the preceding beat of the predominant rhythm (usually sinus rhythm).

Interectopic intervals are equal to or multiples of a common denominator (the cycle length of parasystole).

The diagnosis is fortified by the presence of fusion beats.

Quiz 6

In connection with a VPC, what is a R on T phenomenon?

An ectopic beat superimposing on the preceding T wave is called a R on T phenomenon. This phenomenon can predispose to ventricular tachycardia or ventricular fibrillation.

Quiz 7

When are the VPCs considered to be significant?

- Multifocal/Polymorphic
- VPCs occurring in couplets

Unifocal/Monomorphic VPC if

- Occurring frequently >10/min
- Bigeminy
- R on T phenomenon
- Occur in the setting of heart disease
- Above 40 years (age)
- Exercise induced VPCs