

- Atrial fibrillation



- P waves absent
- Atrial activity is totally irregular and represented by fibrillatory (f) waves of varying amplitude, duration and morphology, causing random oscillation of the baseline

Atrial activity is best seen in leads V1, V2, II, III, aVF.

- Ventricular rhythm is typically irregularly irregular

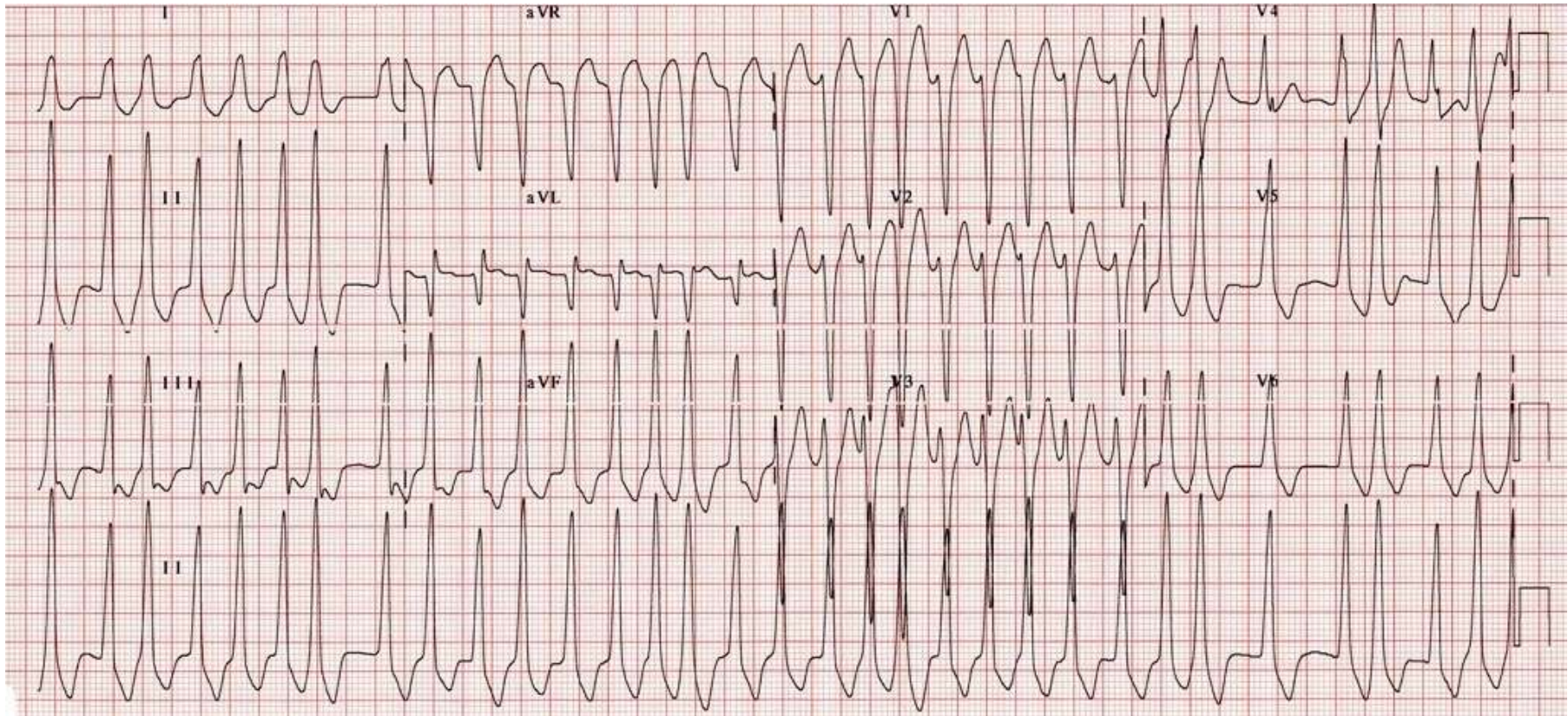
If the RR interval is regular, 2° or 3° AV block with a junctional rhythm may be present.

Digitalis toxicity may result in regularization of the RR interval due to complete heart block with junctional tachycardia.

- Ventricular rate is usually 100-180 BPM in the absence of drugs

If ventricular response rate without AV blocking drugs < 100 BPM, AV conduction system disease is likely to be present.

Consider WPW if the ventricular rate is > 200 per minute and QRS duration is > 120 msec. The 12-lead ECG during sinus rhythm should show a short PR interval and a wide QRS complex with initial slurring (delta wave).



*WPW with AFIB*



Ashman's phenomenon is a form of rate-related aberrancy that is often seen during AFIB and refers to a long RR interval followed by a relatively short RR interval with the beat in the short cycle manifesting aberrant conduction, usually with RBBB configuration.



*Circled beats show Ashman's phenomenon.*

Conditions mimicking AFIB include:

- MAT: shows 3 or more different P wave morphologies and a distinct isoelectric baseline
- Atrial flutter: shows distinct/uniform flutter waves as opposed to varying fibrillatory waves
- Frequent APCs

Etiologies of AFIB include:

- Sleep apnea
- Mitral valve disease (especially if severe)
- Heart disease (e.g. heart failure)
- Hypertension
- Post-CABG (30% of patients)
- MI
- Thyrotoxicosis
- Pulmonary embolism
- Post-operative state
- Hypoxia
- Chronic lung disease (e.g., emphysema)
- Atrial septal defect
- WPW
- SSS (tachy-brady syndrome)
- Alcohol (holiday heart syndrome)
- Normals (lone AFIB)