

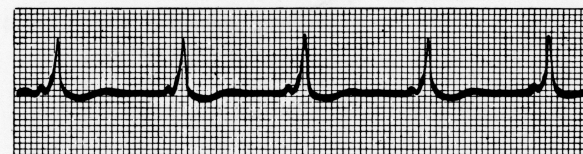
*If the QRS is prolonged to 0.12 sec. or more, the additional diagnosis of bundle branch block is made.

†P inverted in lead 2 and upright in AVR.

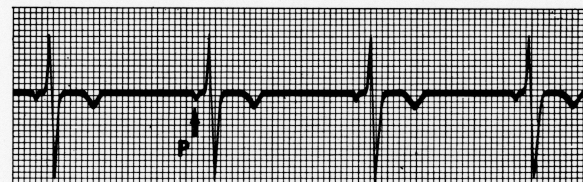
→ *Accelerated conduction syndrome. Syndrome of normal QRS and short P-R interval (Lown-Ganong-Levine Syndrome).* → FIG. P39



→ *Pre-excitation syndrome: Wolff-Parkinson-White.* → FIG. P40

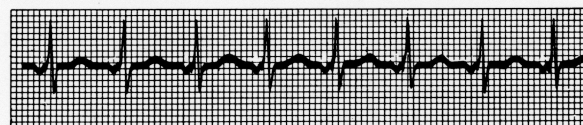


→ *Junctional escape rhythm with atrial activation preceding ventricular.* → FIG. P41

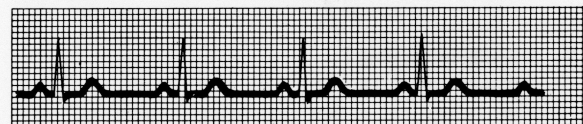


→ *Nonparoxysmal junctional tachycardia.*

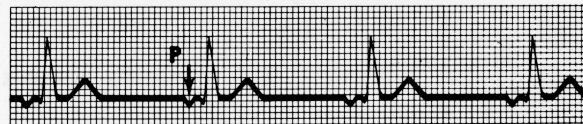
→ *Paroxysmal junctional tachycardia with atrial activation preceding ventricular.* → FIG. P42



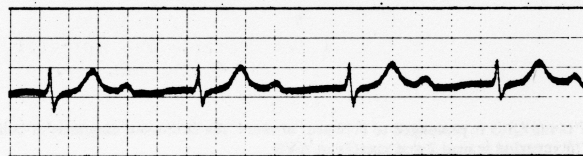
→ *Regular sinus rhythm.* → FIG. P43



→ *Coronary sinus rhythm or junctional rhythm with delayed ventricular activation or aberrant atrial depolarization.* → FIG. P44

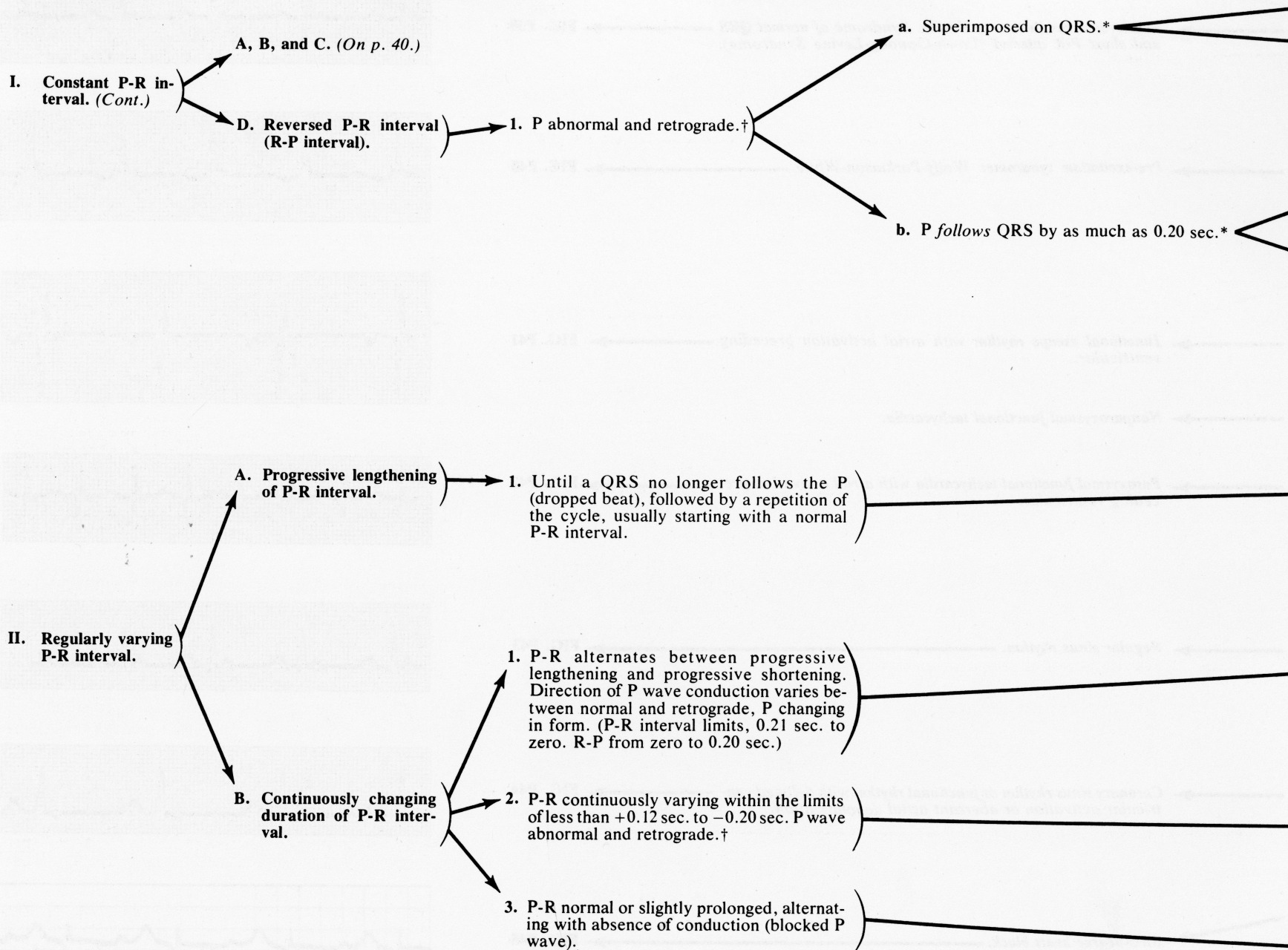


→ *First-degree heart block.* → FIG. P45



→ *First-degree heart block with associated arrhythmia.*

ARRHYTHMIAS—DIAGNOSES BASED ON P-R RELATIONSHIP (Cont.)



*If the QRS is prolonged to 0.12 sec. or more, the additional diagnosis of bundle branch block is made.

†P inverted in lead 2 and upright in AVR.

Junctional rhythm with simultaneous activation of atria and ventricle. Rate usually less than 60 beats per min.

FIG. P46

Junctional tachycardia with simultaneous activation of atria and ventricle. Rate more than 100 beats per min. Often more than 160.

Junctional rhythm with activation of ventricle preceding atria. Rate usually less than 60 beats per min.

FIG. P47

Junctional tachycardia with activation of ventricles preceding atria. Rate more than 100 beats per min. Usually more than 160.

FIG. P48

Wenckebach periods.

FIG. P49

Wandering pacemaker (between sinoatrial node and junctional tissues).

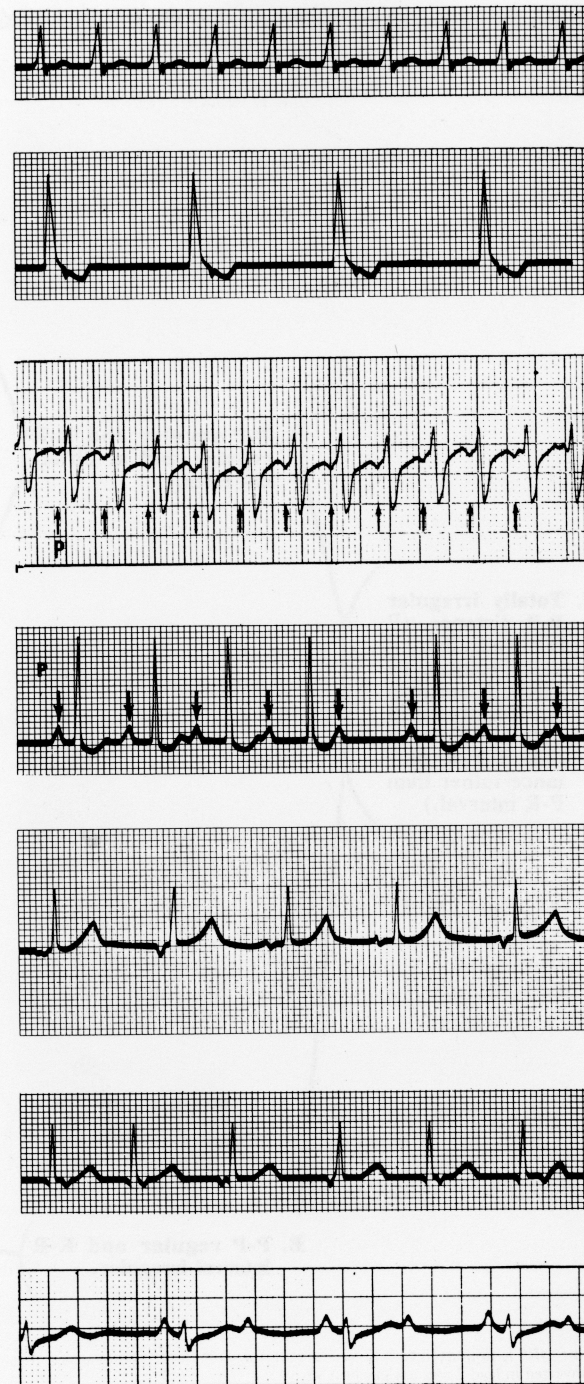
FIG. P50

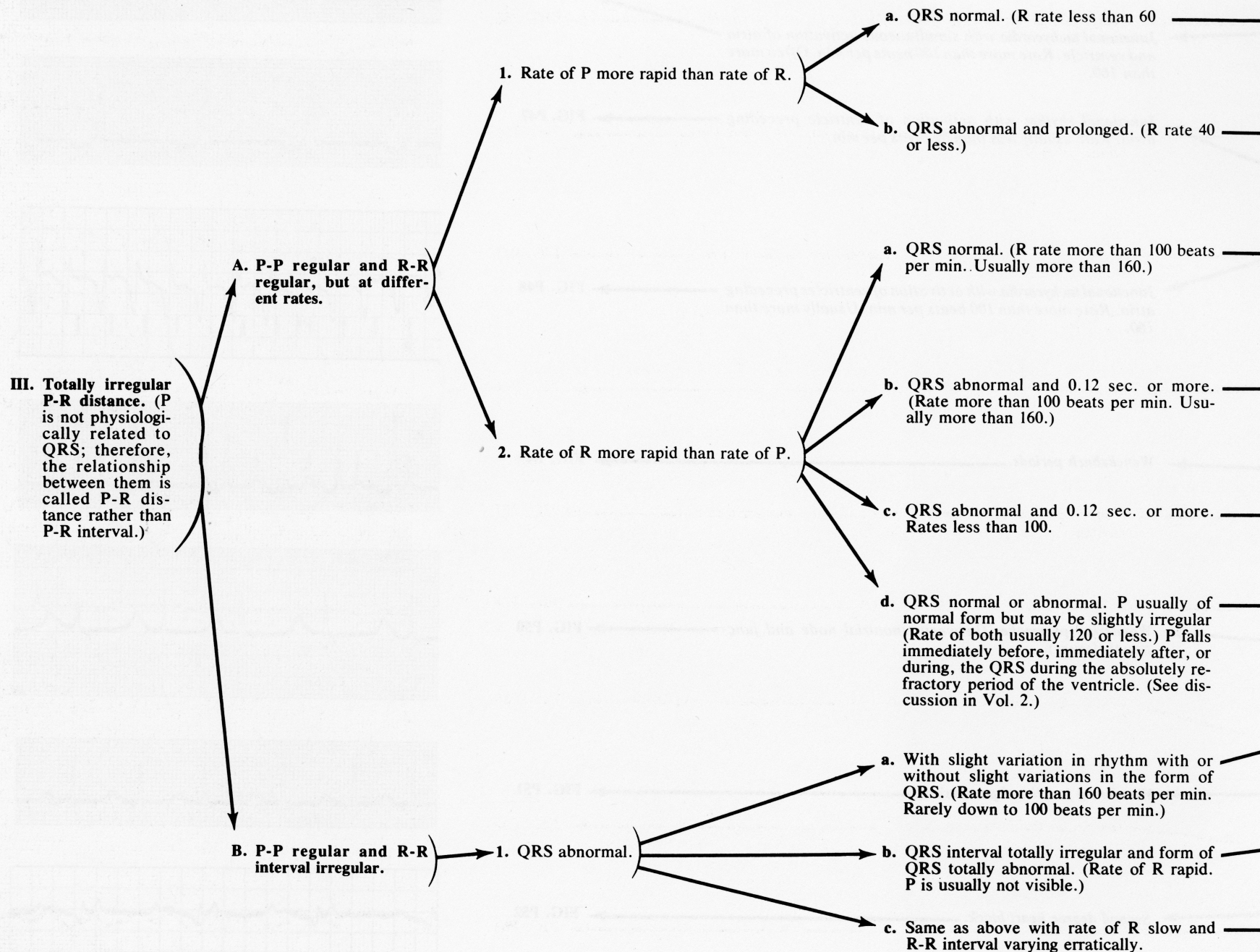
Wandering junctional pacemaker.

FIG. P51

Second degree heart block.

FIG. P52





→ *Complete heart block with bundle of His acting as ventricular pacemaker.* → FIG. P53

→ *Complete heart block with ventricular pacemaker below the bundle of His.* → FIG. P54

→ *Bundle of His tachycardia (or junctional tachycardia with retrograde block).* → FIG. P55

→ *Paroxysmal ventricular tachycardia.* → FIG. P56

→ *Nonparoxysmal ventricular tachycardia. Benign idioventricular rhythm.* → FIG. P57

→ *A.V. dissociation without heart block.* → FIG. P58

→ *Ventricular tachycardia.* → FIG. P59

→ *Ventricular fibrillation.* → FIG. P60

→ *Chaotic heart action.* → FIG. P61



ARRHYTHMIAS—DIAGNOSES BASED ON R-R INTERVAL

I. Regular R-R interval.

A. Rate less than 60 beats per min. (R-R interval more than 1 sec.)

B. Rate between 60 and 100. (See p. 48.)

C. Rate more than 100. (See p. 48.)

1. P wave normal.
P-P interval regular.

- a. P-R interval short. _____
QRS normal. _____
- b. P-R interval short. _____
QRS abnormal (0.12 sec. or more) and
Δ wave present. _____
- c. P-R interval normal. _____
QRS normal. _____
- d. P-R interval prolonged. _____
- e. Increased ratio of P waves to QRS complexes. (QRS does not follow every P wave, but P-R when present is fixed.) _____
- f. Absence of P to R relationship. _____

2. P wave abnormal and retrograde. (Inverted in L2 and upright in AVR.)

- a. Short P-R interval (less than 0.12 sec.). _____
- b. Normal P-R interval. _____

3. P absent and replaced by other atrial activity. F waves present. _____

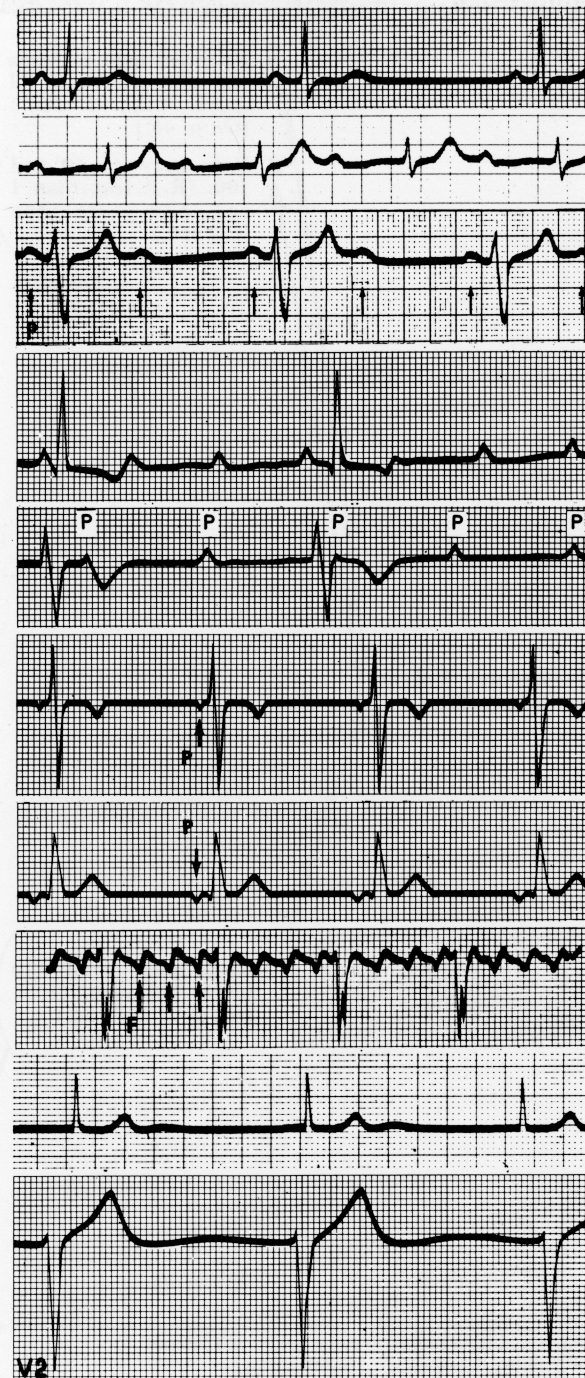
4. P wave absent and replaced by other atrial activity; fibrillatory waves present. _____

5. P wave absent and not replaced by other atrial activity.

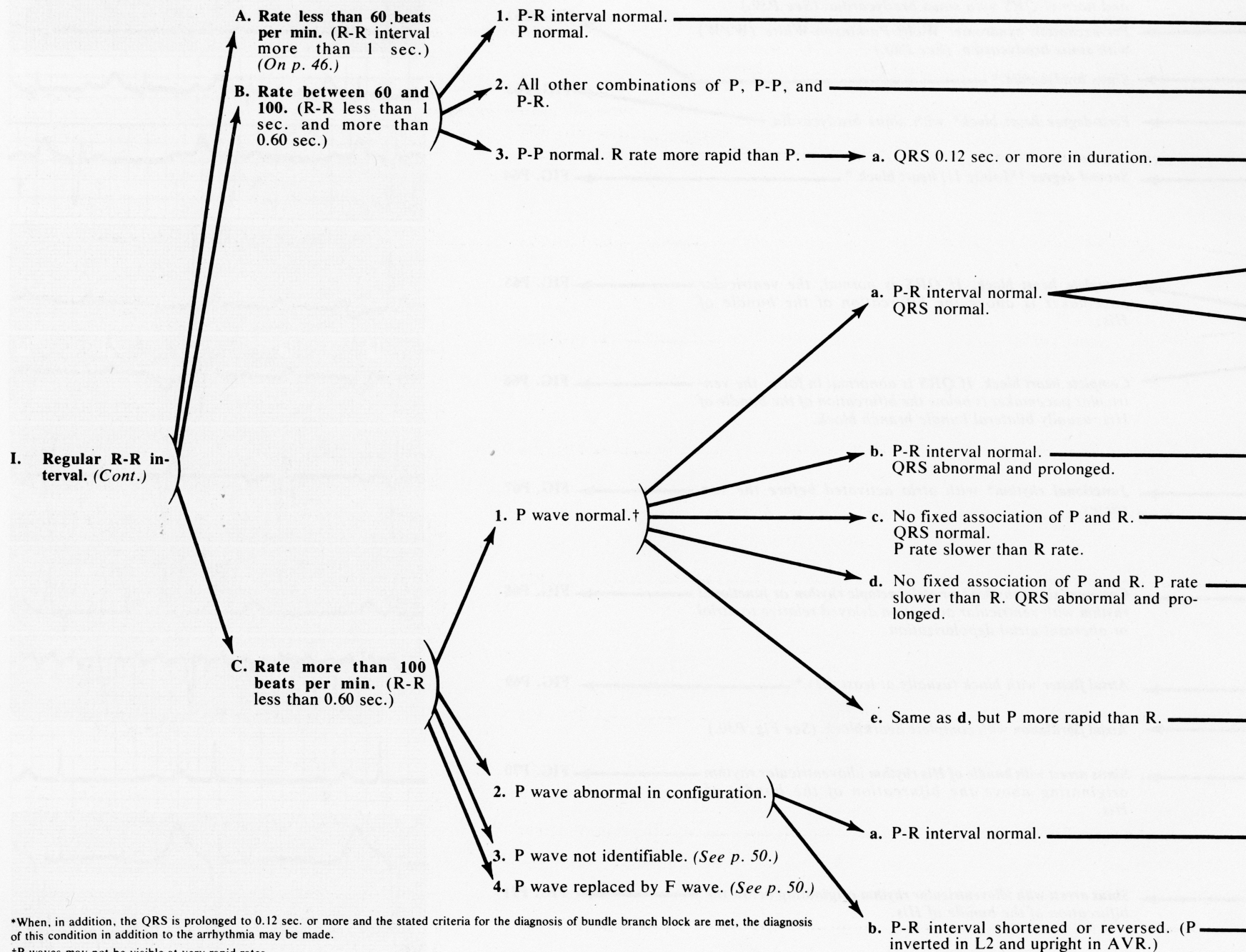
- a. QRS normal. _____
- b. QRS abnormal (0.12 sec. or more in duration). _____

*When, in addition, the QRS is prolonged to 0.12 sec. or more and the stated criteria for the diagnosis of bundle branch are met, the diagnosis of this condition in addition to the arrhythmia may be made.

- **Pre-excitation syndrome.** Syndrome of the short P-R interval and normal QRS with sinus bradycardia. (See P39.) → **FIG. P62**
- **Pre-excitation syndrome: Wolff-Parkinson-White (WPW)** with sinus bradycardia. (See P40.) → **FIG. P63**
- **Sinus bradycardia.*** → **FIG. P64**
- **First-degree heart block*** with sinus bradycardia. → **FIG. P64**
- **Second degree (Mobitz II) heart block.*** → **FIG. P64**
- **Complete heart block.** If QRS is normal, the ventricular pacemaker is above the bifurcation of the bundle of His. → **FIG. P65**
- **Complete heart block.** If QRS is abnormal in form, the ventricular pacemaker is below the bifurcation of the bundle of His, usually bilateral bundle branch block. → **FIG. P66**
- **Junctional rhythm*** with atria activated before the ventricles. → **FIG. P67**
- **Coronary sinus rhythm* or atrial ectopic rhythm or junctional rhythm** with ventricular activation delayed relative to atrial or aberrant atrial depolarization. → **FIG. P68**
- **Atrial flutter with block** (usually at least 4:1).* → **FIG. P69**
- **Atrial fibrillation with complete heart block.** (See Fig. P30.) → **FIG. P70**
- **Sinus arrest with bundle of His rhythm** idioventricular rhythm originating above the bifurcation of the bundle of His. → **FIG. P70**
- **Sinus arrest with idioventricular rhythm** originating below the bifurcation of the bundle of His. → **FIG. P71**



ARRHYTHMIAS—DIAGNOSES BASED ON R-R INTERVAL (Cont.)



*When, in addition, the QRS is prolonged to 0.12 sec. or more and the stated criteria for the diagnosis of bundle branch block are met, the diagnosis of this condition in addition to the arrhythmia may be made.

†P waves may not be visible at very rapid rates.

- **Regular sinus rhythm.*** → FIG. P72
- *(The diagnoses arrived at in section A (rate less than 60 beats per min.) are not altered by increase of rate to over 60 beats per min. Idioventricular rhythms do not usually exceed a rate of 70 beats per min. Junctional rhythms at a rate of 60 to 150 are called nonparoxysmal junctional tachycardia.)* → FIG. P73
- **Nonparoxysmal or slow ventricular tachycardia.** →
- **Sinus tachycardia, rate usually 100 to 160 (occasionally to 170).** → FIG. P74
- **Paroxysmal atrial tachycardia (rate usually 160 to 220).** → FIG. P75
- **Sinus or atrial tachycardia with bundle branch block.** → FIG. P76
- **Bundle of His tachycardia (see Fig. P 55).**
- **Ventricular tachycardia.** → FIG. P77
- **Double tachycardia (simultaneous atrial and ventricular tachycardia).** → FIG. P78
- **Paroxysmal atrial tachycardia.†** → FIG. P79
- **Junctional tachycardia.** → FIG. P80

