

ACUTE SIMULTANEOUS SERIAL CHANGES:
In QRS, S-T, and T (Cont.)

II. Development of decreased voltage of QRS.

A. Progressive elevation of the S-T segment in those leads with an upright QRS.

1. T wave changing from upright to inverted in the same lead (usually later).

-
1. *Acute pericarditis.*
 2. *Myocardial infarction.*

FIG. Ser50A

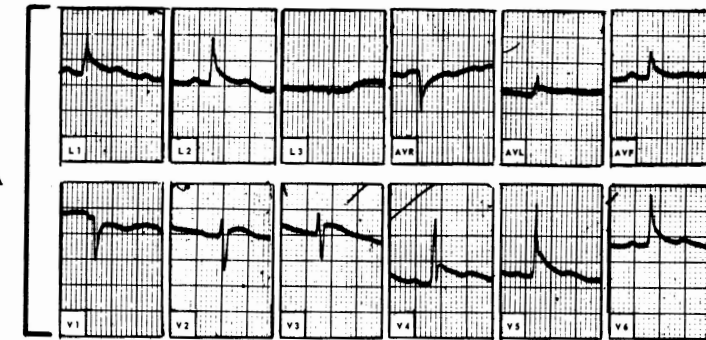
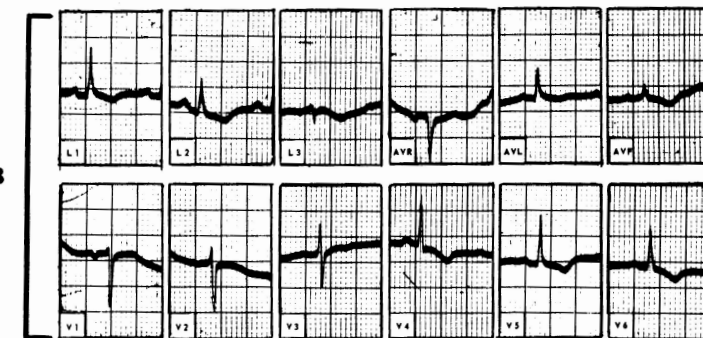
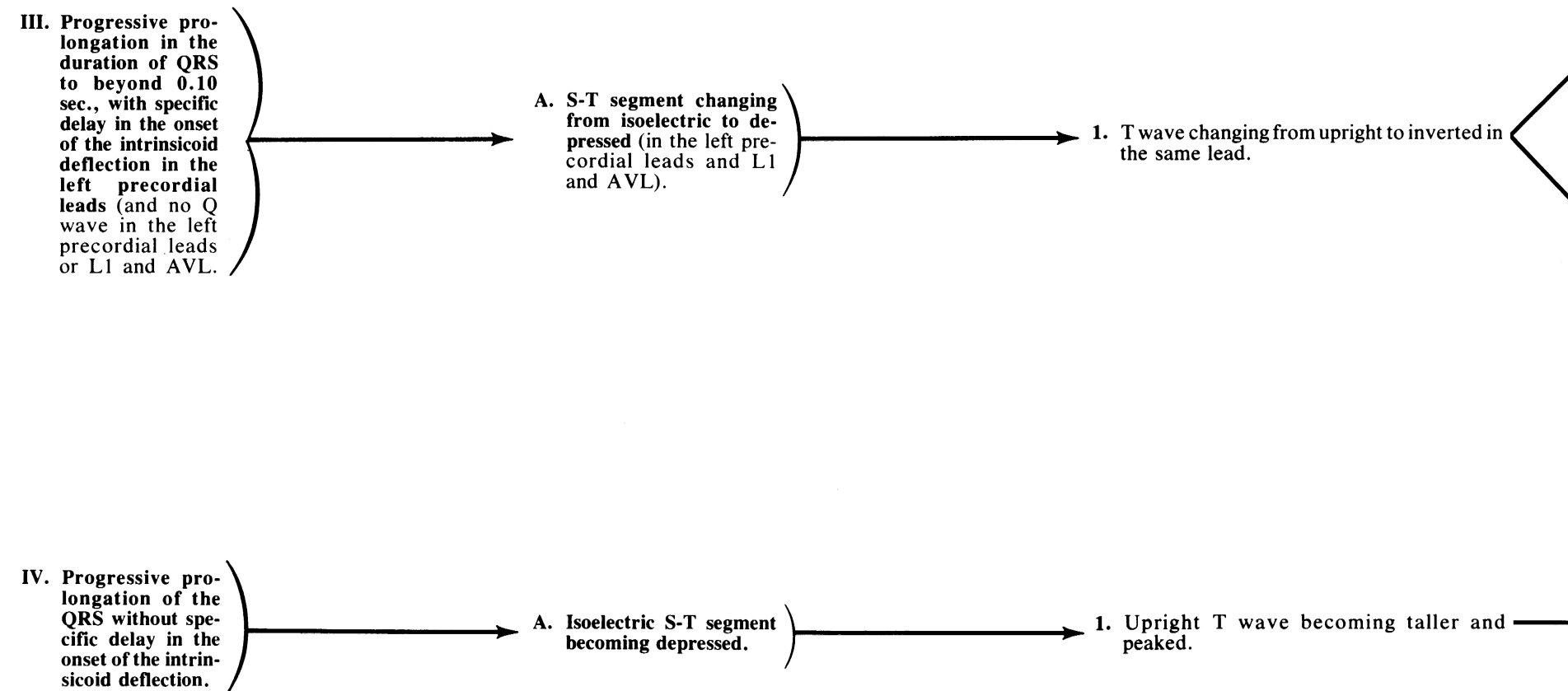
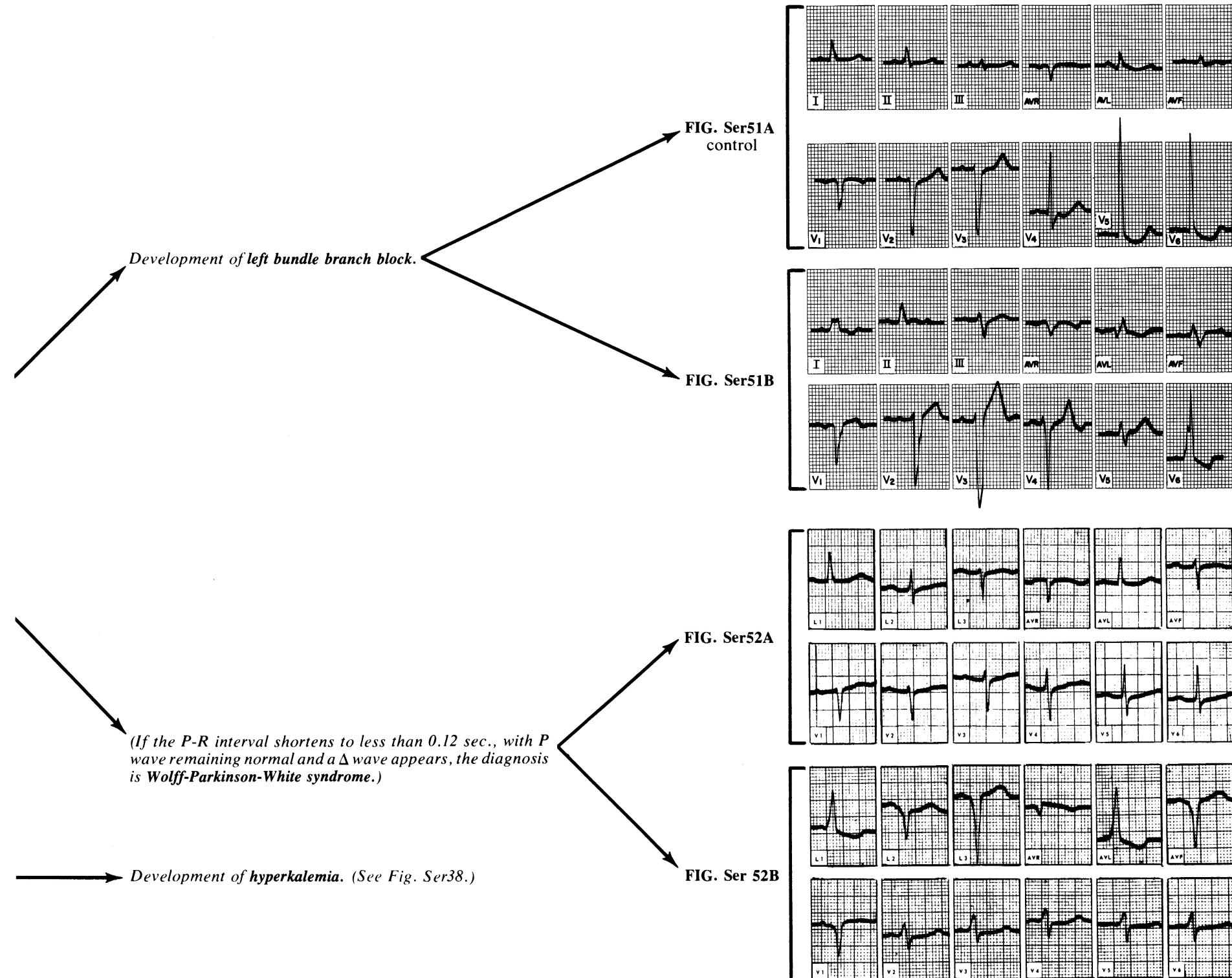


FIG. Ser50B

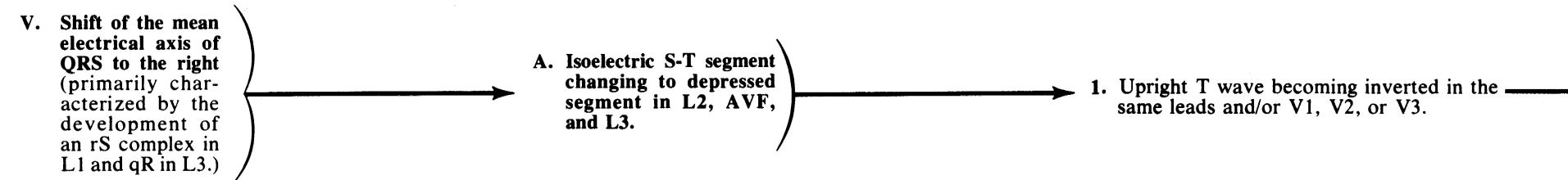


ACUTE SIMULTANEOUS SERIAL CHANGES:
In QRS, S-T, and T (Cont.)





ACUTE SIMULTANEOUS SERIAL CHANGES:
In QRS, S-T, and T (Cont.)



→ *Acute cor pulmonale.*

FIG. Ser53A

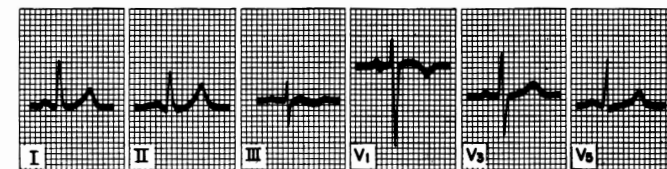
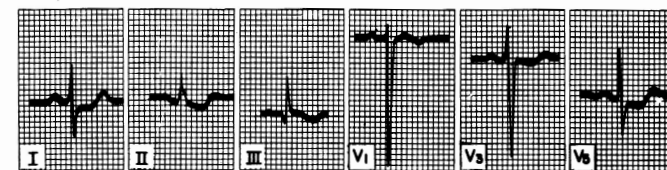


FIG. Ser53B



Index

- ACCELERATED conduction syndrome, 41
- ANGINA PECTORIS
S-T segment in, 129, 131, 177, 179
S-T segment and T wave in, 195, 197
T wave in, 183
- ANTERIOR wall myocardial infarction, Q wave in, 75, 77, 91, 93, 95. *See also* Myocardial infarction.
- ANTEROLATERAL wall myocardial infarction, Q wave in, 95. *See also* Myocardial infarction.
- ANTEROSEPTAL myocardial infarction. *See also* Myocardial infarction.
acute, S-T segment in, 181
Q wave in, 83, 85, 87, 89, 93
- ARREST, sinus. *See* Sinus arrest.
- ARRHYTHMIA(S)
differential diagnosis of, 25-63
in patients with pacemakers (Key Page) 65
(Key Page), 28-29
P wave in, 30-39
P-R interval in, 40-45
R-R interval in, 46-55
sinus, 35, 51
nonphasic, 51
- ARTIFACTS, in ECG, precautions to avoid, 15-18
- ASYNCHRONOUS pulse generator, 64. *See also* Pulse generator.
- ATRIAL
abnormality, P wave in, 35
beat, premature, 57
contraction, premature, blocked, 61
depolarization, aberrant, 33
dilatation, right, 83
ectopic rhythm, 47
enlargement, left, 75
escape, P wave in, 57, 61
- fibrillation, f wave in, 37, 47, 53, 55, 63
flutter, F wave in, 37, 47, 51, 53, 55
pacemaker, 67. *See also* Pacemaker.
synchronous, 67, 69, 71
wandering, 37
premature beat, blocked, 57
pulse generator, synchronous, 64. *See also* Pulse generator.
- tachycardia, 31, 33, 49. *See also* Tachycardia.
multifocal, 37, 55
paroxysmal, 49, 53, 55
- ATRIOVENTRICULAR pacemaker, 67. *See also* Pacemaker.
- AUTONOMIC imbalance, T wave in, 183
- A.V. block, highgrade, 61. *See also* Heart block.
- A.V. dissociation, 45
with interference, 61
- BEAT(S)
fusion, 59
premature, 56-61
atrial, 57
bundle of His, 59
junctional, 57
interpolated, 59
lower nodal. *See* Junctional premature beat.
middle nodal. *See* Junctional premature beat.
upper nodal. *See* Junctional premature beat.
ventricular, interpolated, 59
ventricular paced, 157
- BIDIRECTIONAL junctional tachycardia, 51
- BIFASCICULAR block, 109
- BIGEMINY, ventricular, 59
- BLACKS
elevation of S-T segment in, 137
T wave changes in, 147
- BLOCK
A. V., highgrade, 61
heart. *See* Heart block.
intermittent S-A, 35, 53
intra-atrial, 33
- BRADYCARDIA, sinus, 31, 47
- BRADYCARDIA-TACHYCARDIA arrhythmia, 35
- BUNDLE branch block
left. *See* Left bundle branch block.
right. *See* Right bundle branch block.
- BUNDLE of His
beat, premature, 59
rhythm, 47
tachycardia, 45, 49
- CEREBRAL injury, acute, prolonged Q-T in, 153
- CEREBROVASCULAR accident(s)
prolonged Q-T in, 153
S-T segment in, 131
- CEREBROVASCULAR injury, S-T segment and T wave in, 197
- CHEST leads, correct electrode placement for, 18
- CHILDREN, T wave changes in, 147, 149
- CLOCKWISE rotation of heart, 12
- CONDUCTION defect, intraventricular. *See* Intraventricular conduction defect.
- CORONARY insufficiency
acute
prolonged Q-T in, 155
S-T segment and T wave in, 197
S-T segment in, 129, 131, 179
S-T segment and T wave in, 195
T wave in, 183
- CORONARY sinus rhythm, 33, 41, 47
- COR pulmonale
acute
Q wave in, 79, 81
QRS complex in, 165, 167
QRS, S-T, and T in, 205
QRS and T in, 185
recovery from, 191
S-T segment in, 179
chronic, Q wave in, 79, 81
S-T segment in, 131
- COUNTERCLOCKWISE rotation of heart, 12
- DEMAND pacemaker, 67, 69, 71. *See also* Pacemaker.
malfunctioning, 69, 71
- DEMAND/standby pulse generator, 64. *See also* Pulse generator.
- DEXTROCARDIA, 75, 89
- DIGITALIS effect
on Q-T interval, 159
on S-T segment, 129, 131, 179
on S-T segment and T wave, 195
on T wave, 183
recovery from, S-T segment and T wave and, 197
- DILATATION
left atrial, 75
right atrial, 83
- DISSOCIATION, A.V., 45
with interference, 61
- DRUG effect
on S-T segment, 179
on S-T segment and T wave, 195, 197
on T wave, 183
prolonged Q-T in, 153
- DRUG toxicity
QRS in, 107, 115
QRS and T in, 189

- ECG. *See also* Electrocardiogram.
of patients with pacemakers, 64-71
- ECG machine
checking accuracy of, 15
defect of paper advance in, 18
defective, 131
effect on S-T segment, 179
defective damping of, 129
excess of filtering in, 181
improper standardization of
QRS complex in, 177
QRS and T in, 189
- EFFUSION
pericardial
QRS complex in, 177
QRS and T in, 189
pleural
abnormal T wave in, 149
massive, QRS complex in, 177
QRS and T in, 189
- EINTHOVEN triangle, 2
- ELECTRIC theory, basic, 5
- ELECTRICAL axis
mean. *See* Mean electrical axis (MEA).
of the heart, shift of, QRS complex in, 165
- ELECTRICAL connections of standard leads,
2-3
- ELECTRICAL potentials, heart as a source of,
1
- ELECTROCARDIOGRAM, 75, 81, 83, 85. *See also* ECG.
technique for taking, 15-18
- ELECTROCARDIOGRAPHIC complex, compo-
nents of, 18
- ELECTRODE placement
correct, for chest leads, 18
improper, 33
- ELECTRODE jelly, use of, 17
- ELECTROLYTE imbalance, correction of, 175
See also Hypokalemia, Hyper-
kalemia.
- ELECTROMOTIVE force of heart
clinical recording of
in frontal plane, 1-3
in horizontal plane, 4
derivation of mean electrical axis of, 5
EMITINE, prolonged Q-T with, 153
- ENLARGEMENT
left atrial, 75
right atrial, 83
- ESCAPE
atrial, 61
interval, 64
junctional, 57, 61
rhythm, junctional, 41
ventricular, 57, 61
- FIBRILLATION
atrial, f wave in, 37, 47, 53, 55, 63
ventricular, P wave in, 39, 45, 55
- FIXED rate pacemaker, 67. *See also* Pace-
maker.
malfunctioning, 67, 69
nonfunctioning, 71
- FIXED rate pulse generator, 64. *See also*
Pulse generator.
- FLUTTER
atrial, F wave in, 37, 47, 51, 53, 55
ventricular, P wave in, 51
- FRONTAL plane
clinical recording of heart in, 1-3
leads, angular relationships between, 2-3
- FUSION beat, 59
- HEAD injury, T wave in, 183
- HEART
as source of electrical potentials, 1
chaotic action of, 39, 45, 53
clockwise rotation of, 12
counterclockwise rotation of, 85
electromotive force of
derivation of mean electrical axis of, 5
clinical recording of, in frontal plane,
1-3
clinical recording of, in horizontal
plane, 4
rate of, calculated from ECG chart boxes,
24
- HEART block
complete
P wave in, 45, 47
prolonged Q-T in, 153
first degree, 31, 41, 47
high grade, 61
second degree
Mobitz I, 33, 43, 53,
Mobitz II, 31, 43, 47
third degree, complete, 45, 47
- HEART disease
beri-beri, recovery from, 191
nutritional, recovery from, 191
- HEMIBLOCK
left anterior
QRS complex in, 109, 111, 121, 165
QRS and T in, 185
left posterior, QRS complex in, 111, 123,
165
- HEMORRHAGE, subarachnoid, prolonged
Q-T in, 155
- HEXAXIAL system, 3
- HIGH voltage
in left precordial leads, 98-99
in right precordial leads, 100-103
- HIS bundle escape, 57. *See also* Bundle of
His.
- HORIZONTAL plane, clinical recording of,
electromotive force of heart in, 4
- HYPERCALCEMIA, shortened Q-T in, 159
- HYPERKALEMIA
QRS in, 117
QRS, S-T, and T in, 203
QRS and T in, 191
return to normal of, T wave in, 183
S-T segment in, 129, 133
T wave in, 183
abnormal, 143
- HYPERTROPHY
septal, 95
- ventricular
left. *See* Left ventricular hypertrophy.
right. *See* Right ventricular hyper-
trophy.
- HYPOCALCEMIA, prolonged Q-T in, 155
- HYPOKALEMIA, 131. *See also* Potassium, de-
ficiency of.
prolonged Q-T in, 153, 155
S-T segment in, 179
S-T segment and T wave in, 195, 197
T wave in, 183
- HYSTERESIS pacemaker, 64, 69
- IDIOPATHIC hypertrophic subaortic stenosis,
95
- IDIOVENTRICULAR rhythm
benign, 45
low, prolonged Q-T in, 157
P wave in, 39, 47
- INFARCTION
myocardial. *See* Myocardial infarction.
subendocardial. *See* Subendocardial in-
farction.
- INFECTIOUS diseases, prolonged Q-T in, 153
- INFERIOR wall myocardial infarction. *See also* Myocardial infarction.
acute
QRS complex in, 165
S-T segment in, 181
Q wave in, 79, 81, 83
QRS and T in, 185, 191
S-T segment in, 135
- INFERO-LATERAL wall myocardial infarction,
95. *See also* Myocardial infarction.
- INHIBITED pulse generator, ventricular, 64.
See also Pulse generator.
- INTERMITTENT S-A block, 35, 53
- INTRA-ATRIAL block, 33
- INTRAMURAL infarction, T wave in, 183
- INTRAVENTRICULAR conduction defect
prolonged Q-T in, 157
QRS complex in, 107, 113, 115, 117, 169
QRS and T in, 189
reversion to normal of
QRS complex in, 175
QRS and T in, 191
- JUNCTIONAL
escape, 57, 61
escape rhythm, 41
pacemaker. *See also* Pacemaker.
shifting, 51
wandering, 43
premature beat, 57
blocked, 57
interpolated, 59
rhythm, P wave in, 33, 39, 41, 43, 47, 63
tachycardia
bidirectional, P wave in, 51
nonparoxysmal, 33, 41
P wave in, 43, 45, 49, 63
paroxysmal, 33, 41
- LATERAL wall myocardial infarction. *See*
- also* Myocardial infarction.
Q wave in, 95
S-T segment in, 135
- LEADS
chest, correct electrode placement for, 18
frontal plane, angular relationships be-
tween, 2-3
precordial
left, high voltage in, 98-99
right, high voltage in, 100-103
V1 to V6, recording of, 4
standard (L1, L2, L3), 2
unipolar extremity (AVR, AVL, AVF), 2
- LEFT anterior hemiblock
QRS complex in, 109, 111, 121, 165
QRS and T in, 185
- LEFT atrial enlargement, 75
- LEFT axis deviation, 119
- LEFT bundle branch block
abnormal S-T segment in, 133, 139
incomplete, 99, 115
prolonged Q-T in, 157
Q wave in, 89
QRS complex in, 99, 105, 167, 171
QRS, S-T, and T in, 203
QRS and T in, 187
reversion to normal of
QRS complex in, 175
QRS and T in, 191
- LEFT posterior hemiblock, QRS complex in,
111, 123, 165
- LEFT ventricular hypertrophy
QRS complex in, 99, 101, 107, 115, 119,
121, 125
S-T segment in, 129, 131, 133
- Low voltage, 102-103
- LOWER nodal premature beat. *See* Junc-
tional premature beat.
- LOWN-GANONG-LEVINE syndrome, 41
- MEAN electrical axis (MEA)
abnormal in direction, 118-125
of electromotive force of heart, derivation
of, 5
of QRS, 12, 23
of T, 12
plotting, 6-14
- MIDDLE nodal premature beat. *See* Junc-
tional premature beat.
- MOBITZ I heart block, 33, 43, 53
- MOBITZ II heart block, 31, 43, 47
- MULTIFOCAL atrial tachycardia, 37, 55. *See also* Tachycardia.
- MYOCARDIAL infarction
acute
abnormal S-T segment in, 135, 137, 139
anteroseptal, S-T segment in, 181
prolonged Q-T in, 153
QRS complex in, 165, 167
QRS, S-T, and T in, 199
QRS and T in, 185
recovery from
QRS complex in, 175
QRS and T in, 191

MYOCARDIAL infarction—(*Continued*)
 S-T segment and T wave in, 193
 anterior wall. *See* Anterior wall myocardial infarction.
 anterolateral wall, 95
 anteroseptal. *See* Anteroseptal myocardial infarction.
 healing of, QRS complex in, 175
 inferior wall. *See* Inferior wall myocardial infarction.
 inferolateral wall, 95
 lateral wall, 95, 135
 posterior wall
 Q wave in, 81
 QRS in, 101
 posterolateral, QRS complex in, 167
 QRS in, 103, 107, 111, 119, 121
 QRS, S-T, and T in, 201
 QRS and T in, 189
 S-T segment in, 177
 subendocardial, prolonged Q-T in, 155
 See also Subendocardial infarction.
 T wave in, 145, 183
 MYOCARDIAL ischemia
 acute, QRS complex in, 167
 S-T segment in, 179
 MYOCARDITIS
 QRS and T in, 189
 T wave in, 183
 MYXEDEMA, abnormal T wave in, 149

 NONPAROXYSMAL tachycardia
 junctional, 33, 41. *See also* Junctional tachycardia.
 ventricular, 45, 49, 63. *See also* Ventricular tachycardia.

OSCILLOSCOPE monitor, viewing ECG on, 16

P MITRALE, 33
 P PULMONALE, 33

P WAVE
 diagnosis of arrhythmia based on, 30–39
 identification of, 19–20

PACEMAKER
 atrial. *See* Atrial pacemaker.
 atrioventricular, 67
 definition of terms for, 64
 demand. *See* Demand pacemaker.
 ECG of patients with, 64–71
 fixed rate. *See* Fixed rate pacemaker.
 hysteresis, 64
 demand, 69
 junctional, wandering, 43, 51
 malfunctioning, 71
 runaway, 69
 ventricular. *See* Ventricular pacemaker.
 wandering, 43, 51

PACER spike
 absent, 70–71
 present, 66–71

PARASYSTOLE, ventricular, 59

PAROXYSMAL tachycardia
 atrial, 49, 53, 55. *See also* Atrial tachycardia.
 junctional, 33, 41. *See also* Junctional tachycardia.
 ventricular, 45. *See also* Ventricular tachycardia.

PERICARDIAL effusion.
 abnormal T wave in, 149
 QRS complex in, 177
 QRS and T in, 189

PERICARDITIS
 acute
 QRS, S-T, and T in, 201
 recovery from, QRS and T in, 191
 S-T segment in, 135, 137, 177
 S-T segment and T wave in, 193
 T wave in, 183

PHENOTHIAZINE(s)
 effect of, 131

 on T wave, 145
 prolonged Q-T with, 153

PLEURAL effusion. *See also* Effusion.
 abnormal T wave in, 149
 massive, QRS complex in, 177

 QRS and T in, 189

POSTERIOR wall myocardial infarction, 81,
 101. *See also* Myocardial infarction.

POSTEROLATERAL myocardial infarction,
 167. *See also* Myocardial infarction.

POTASSIUM, deficiency of, 129. *See also*
 Hypokalemia.

P-P INTERVAL
 constant, 30–35
 occasional
 prolonged, 56–57
 short, 55–57
 varying, 34–37

P-Q INTERVAL. *See* P-R interval.

P-R INTERVAL (P-Q)
 identification of, 20–21
 normal values for, 24
 prolonged, 31, 41, 47
 short, 31

P-R RELATIONSHIP, diagnosis of arrhythmia
 based on, 40–45

PRECAUTIONS to avoid artifacts in ECG,
 15–18

PRECORDIAL leads. *See also* Leads.

 left, high voltage in, 98–99
 QRS abnormal in, 124–125
 right, high voltage in, 100–103
 V1 to V6, recording of, 4

PRE-EXCITATION syndrome (Wolff-Parkinson-White syndrome). *See also*
 Lown-Ganong-Levine syndrome.

 P-R interval in, 41
 QRS in, 105, 113, 173, 175
 S-T segment in, 133

PREMATURE beat(s), 56–61
 atrial, 57
 bundle of His, 59
 junctional, 57
 interpolated, 59

 lower nodal. *See* Junctional premature beat.
 middle nodal. *See* Junctional premature beat.
 supraventricular, 59
 upper nodal. *See* Junctional premature beat.
 ventricular, 55, 59
 interpolated, 59

PREMATURE contraction
 atrial, 57

 blocked, 61
 ventricular, 59
 multifocal, 55

PRINZMETAL (atypical) angina, 137

PROCAINE amide
 effect of
 on Q-T interval, 155
 on S-T segment, 129, 131

PULSE generator
 asynchronous, 64
 atrial, 64
 definition of, 64
 demand/standby, 64
 fixed rate, 64
 ventricular
 inhibited, 64
 synchronous, 64
 triggered, 64

Q WAVE
 abnormalities of (Key Page), 73
 differential diagnosis of, 72–95

QRS COMPLEX
 abnormalities of (Key Page), 97
 acute serial changes limited to, 164–177
 dextrocardia, 33
 differential diagnosis of, 96–125
 identification of, 21–22
 mean electrical axis of, 23
 normal, 31
 prolongation of
 beyond 0.10 sec. up to 0.12 sec., 114–117
 to 0.12 sec. or more, 104–113
 S-T, T and, acute simultaneous serial changes in, 198–205
 T vectors and, angular relationship of, 12
 T wave and, serial changes in, 184–191

Q-T INTERVAL

 abnormalities of (Key Page), 151

 differential diagnosis of, 150–159

 identification of, 23

 normal, 160

QUINIDINE
 effect of
 on Q-T interval, 155
 on S-T segment, 129, 131
 on T wave, 145

 toxicity, QRS in; 107, 115
 QUININE, effect of, on S-T segment, 131

REFRACTORY period, pacemaker, definition of, 64

REPETITION rate, pacemaker, definition of, 64

REPOLARIZATION, early, S-T segment in, 137

RHYTHM

 atrial ectopic, 47
 bundle of His, 47
 idioventricular benign, 45
 low, prolonged Q-T in, 157
 P wave in, 39, 47
 irregular dominant, arrhythmias with, 62–63
 junctional
 escape, 41
 P wave in, 33, 39, 41, 43, 47, 63
 regular, dominant, arrhythmias with essentially, 56–61
 sinus, P wave in, 31, 33, 41, 47, 49, 53
 supraventricular, prolonged Q-T with, 153

RIGHT atrial dilatation, 83

RIGHT axis deviation, 121, 123

RIGHT axis shift, acute, QRS complex in, 165

RIGHT bundle branch block
 incomplete, QRS in, 103, 117
 prolonged Q-T in, 157
 Q wave in, 85
 QRS in, 103, 109, 111, 171
 QRS and T in, 187
 reversion to normal of
 QRS complex in, 175
 QRS and T in, 191

RIGHT ventricular hypertrophy

 Q wave in, 75, 83, 85, 93, 95
 QRS in, 101, 103, 121, 123, 125
 S-T segment in, 133

ROTATION of the heart

 clockwise, 12
 counterclockwise, 85

R-R INTERVAL

 diagnosis of arrhythmias based on, 46–55
 occasional short, 58–59

SENSITIVITY, pacemaker, definition of, 64

SEPTAL hypertrophy, 95

SERIAL change(s)
 acute (Key page), 162–163
 differential diagnosis of, 161–205
 limited to QRS complex, 164–177
 limited to S-T segment, 176–181
 limited to T wave, 182–183
 simultaneous
 in QRS, S-T, and T, 198–205
 in QRS and T, 184–191
 in S-T segment and T wave, 192–197

SINUS arrest, 47

 P wave in, 47, 57, 61
 intermittant, 35
 or occasional, 53

SINUS arrhythmia, 35, 51. *See also*
 Arrhythmia.

 nonphasic, 51

SINUS bradycardia, 31, 47

SINUS node syndrome, 35

SINUS rhythm, 53

 coronary, 33, 41, 47

 regular, 31, 41, 49

SINUS tachycardia, 31, 49

- S-A BLOCK, intermittent, 35, 53
- S-T SEGMENT
- abnormalities of (Key Page), 127
 - acute serial changes in, 176-181
 - depression of, nonspecific, 129
 - differential diagnosis of, 126-139
 - identification of, 23
 - QRS, T, and, acute simultaneous serial changes in, 198-205
 - T wave and, acute simultaneous serial changes in, 192-197
- STANDARD LEADS (L1, L2, L3), 2
- STANDARDIZATION of ECG machine, improper
- QRS complex in, 177
 - QRS and T in, 189
- SUBARACHNOID hemorrhage, prolonged Q-T in, 155
- SUBENDOCARDIAL infarction
- prolonged Q-T in, 155
 - S-T segment in, 129, 131, 179
 - S-T segment and T wave in, 195
- SUPRAVENTRICULAR premature beat, 59
- SUPRAVENTRICULAR tachycardia, 39, 51, 53.
- See also* Tachycardia.
- SYNCHRONOUS pacemaker
- atrial. *See* Atrial pacemaker, synchronous.
 - ventricular. *See* Ventricular pacemaker, synchronous.
- SYNCHRONOUS pulse generator, 64. *See also* Pulse generator.
- T WAVE
- abnormalities of (Key Page), 141
 - differential diagnosis of, 140-149
 - identification of, 23
 - QRS complex and, serial changes in, 184-191
 - QRS, S-T, and, acute simultaneous serial changes in, 198-205
 - QRS vectors and, angular relationship of, 12
 - serial changes limited to, 182-183
 - S-T segment and, acute simultaneous serial changes in, 192-197
- TACHYCARDIA
- atrial. *See* Atrial tachycardia.
 - bundle of His, 45, 49
 - double, 49
 - junctional. *See* Junctional tachycardia.
 - multifocal atrial, 37, 55
 - prolonged Q-T in, 159
 - QRS and T in, 189
 - sinus, 31, 49
 - S-T segment in, 129, 179
- S-T segment and T wave in, 195, 197
- supraventricular, 39, 51, 53
- termination of, QRS complex in, 175
- ventricular. *See* Ventricular tachycardia.
- TOXIC states, prolonged Q-T in, 153
- TRIAXIAL system, 3
- TRIGGERED pulse generator, ventricular, 64.
- See also* Pulse generator.
- U WAVE, identification of, 23
- UNIPOLAR extremity leads (AVR, AVL, AVF), 2
- UPPER nodal premature beat. *See* Junctional premature beat.
- VENTRICULAR
- bigeminy, 59
 - contraction, premature, 59
 - deflection, main, 21-22
 - escape, 57, 61
 - fibrillation, 39, 45, 55
 - flutter, 51
 - hypertrophy
 - left. *See* Left ventricular hypertrophy.
 - right. *See* Right ventricular hypertrophy.
 - paced beat, prolonged Q-T in, 157
 - pacemaker. *See also* Pacemaker.
 - inhibited, 71
- demand, 69
- failure of, 67
 - malfunctioning, 69
 - synchronous, 69, 71
 - malfunctioning, 71
- parasytote, 59
- premature beat, 59
- interpolated, 59
 - multifocal, 55
- pulse generator. *See also* Pulse generator.
- inhibited, 64
 - synchronous, 64
 - triggered, 64
- tachycardia. *See also* Tachycardia.
- nonparoxysmal, 45, 49, 63
 - P wave in, 39, 45, 49, 61, 63
 - paroxysmal, 45
- VOLTAGE, low, 102-103
- WENKEBACH periods, 33, 43, 53
- WILSON Central Terminal, 2
- WOLFF-Parkinson-White syndrome (Pre-excitation syndrome)
- P-R interval in, 41
 - QRS in, 105, 113, 173, 175
 - QRS, S-T, and T in, 203
 - S-T segment in, 133
- YOUNG adults, T wave changes in, 147, 149