

# CURSO DE ELECTROCARDIOGRAFÍA BÁSICA

Interpretación del E.C.G.

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# Interpretación del E.C.G.

## Algoritmo de lectura

- ✓ Frecuencia cardíaca
- ✓ Ritmo
  - ✓ Sinusal
  - ✓ Arritmia
- ✓ Medir Intervalos
  - ✓ PR
    - ✓ Normal
    - ✓ Corto: Preexcitación
    - ✓ Largo: Bloqueo AV
  - ✓ QRS
    - ✓ Normal
    - ✓ Ancho: Bloqueo de rama, WPW, Extrasistolia Ventricular, Marcapasos
  - ✓ QTc
- ✓ Calculo del eje del QRS en el plano frontal
  - ✓ Normal
  - ✓ Izquierdo Hemibloqueo anterior
  - ✓ Derecho Crecimiento VD, Hemibloqueo posterior
- ✓ Análisis de las ondas
  - ✓ Onda P
    - ✓ Amplitud
    - ✓ Duración
    - ✓ Morfología
  - ✓ Complejo QRS
    - ✓ Amplitud
    - ✓ Duración
    - ✓ Morfología
  - ✓ Segmento ST
    - ✓ Morfología
  - ✓ Onda T
    - ✓ Morfología

# Interpretación del E.C.G.

## Evaluación de la onda P

✓ Voltaje de la onda P en II:

✓ Normal

✓ Aumentado

Crecimiento de AD

✓ Duración de la onda P en II:

✓ Normal

✓ Aumentada

Crecimiento de AI

✓ Morfología en V<sub>1</sub>:

✓ Normal

✓ Aumento módulo negativo

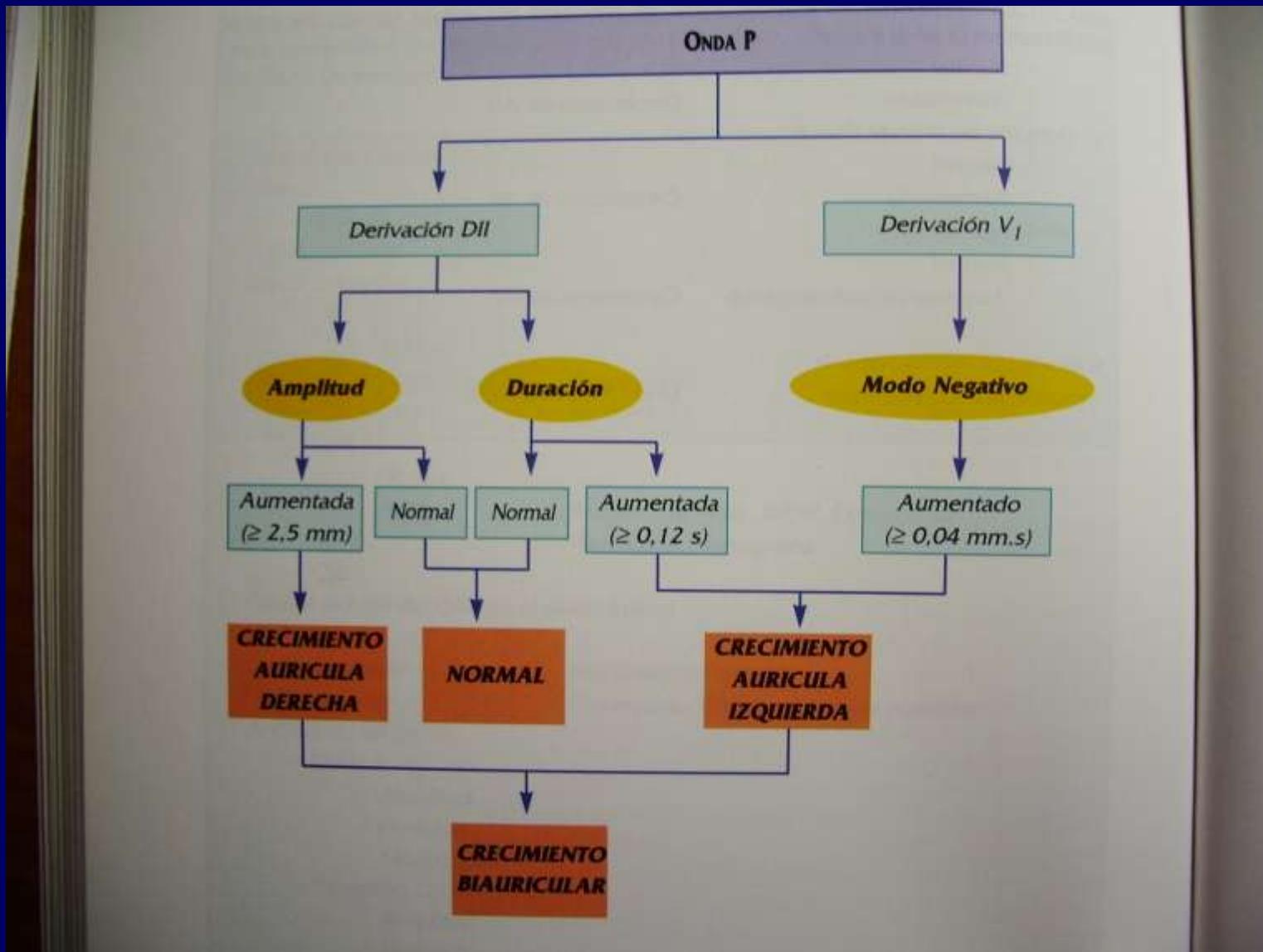
Crecimiento de AI

Si el voltaje, la duración y la morfología son normales:

Onda P normal

# Interpretación del E.C.G.

## Evaluación de la onda P



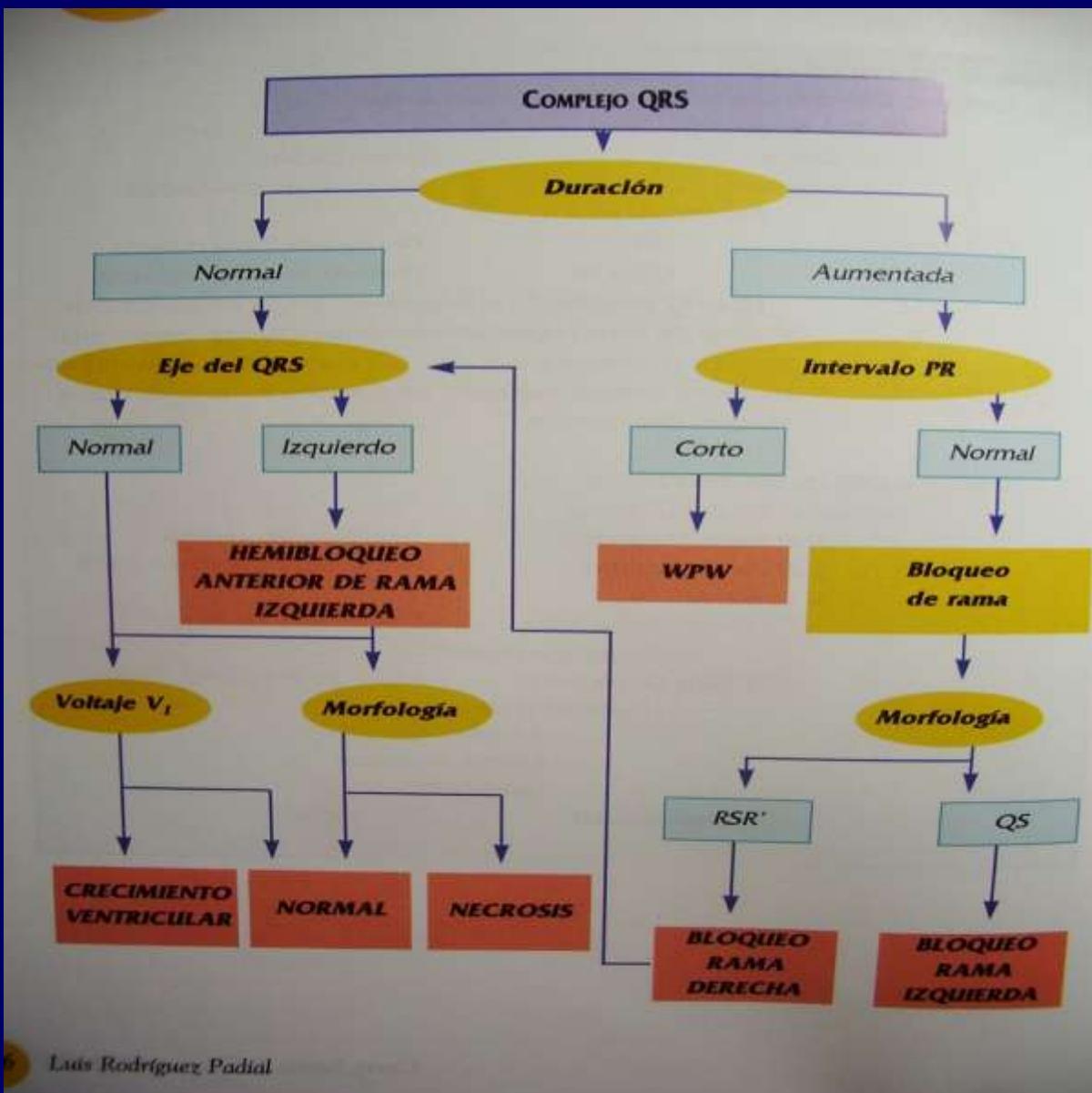
# Interpretación del E.C.G.

## Evaluación del complejo QRS

- ✓ Duración del complejo QRS:
  - ✓ Complejo QRS de duración aumentada (ensanchado):
    - ✓ Medir intervalo PR:
      - ✓ Corto: Preexcitación
      - ✓ Normal: Trastorno de conducción
    - ✓ Morfología en  $V_1$ :
      - ✓ rSR': Bloqueo de rama derecha
      - ✓ QS o rS: Bloqueo de rama izquierda
  - Una vez establecido el diagnóstico de preexcitación o de bloqueo de rama (especialmente izquierda) hay que ser muy cauto en la interpretación del ECG, puesto que no pueden utilizarse los criterios habituales de crecimiento de cavidades o necrosis, por ejemplo:
  - ✓ Complejo QRS de duración normal:
    - ✓ Calcular el eje del QRS:
      - ✓ Si el eje es izquierdo: Hemibloqueo anterior
      - ✓ Si el eje es derecho: Hemibloqueo posterior (raro)
      - ✓ Si es normal:
        - ✓ Voltaje aumentado: Crecimiento ventricular
        - ✓ Morfología específica CVI o CVD
      - ✓ Ondas de necrosis: Infarto de miocardio
      - ✓ Localización de la necrosis:
        - ✓ Anterior
        - ✓ Inferior (posterior)
        - ✓ Lateral alto
    - ✓ Voltaje normal: QRS normal

# Interpretación del E.C.G.

## Evaluación del complejo QRS



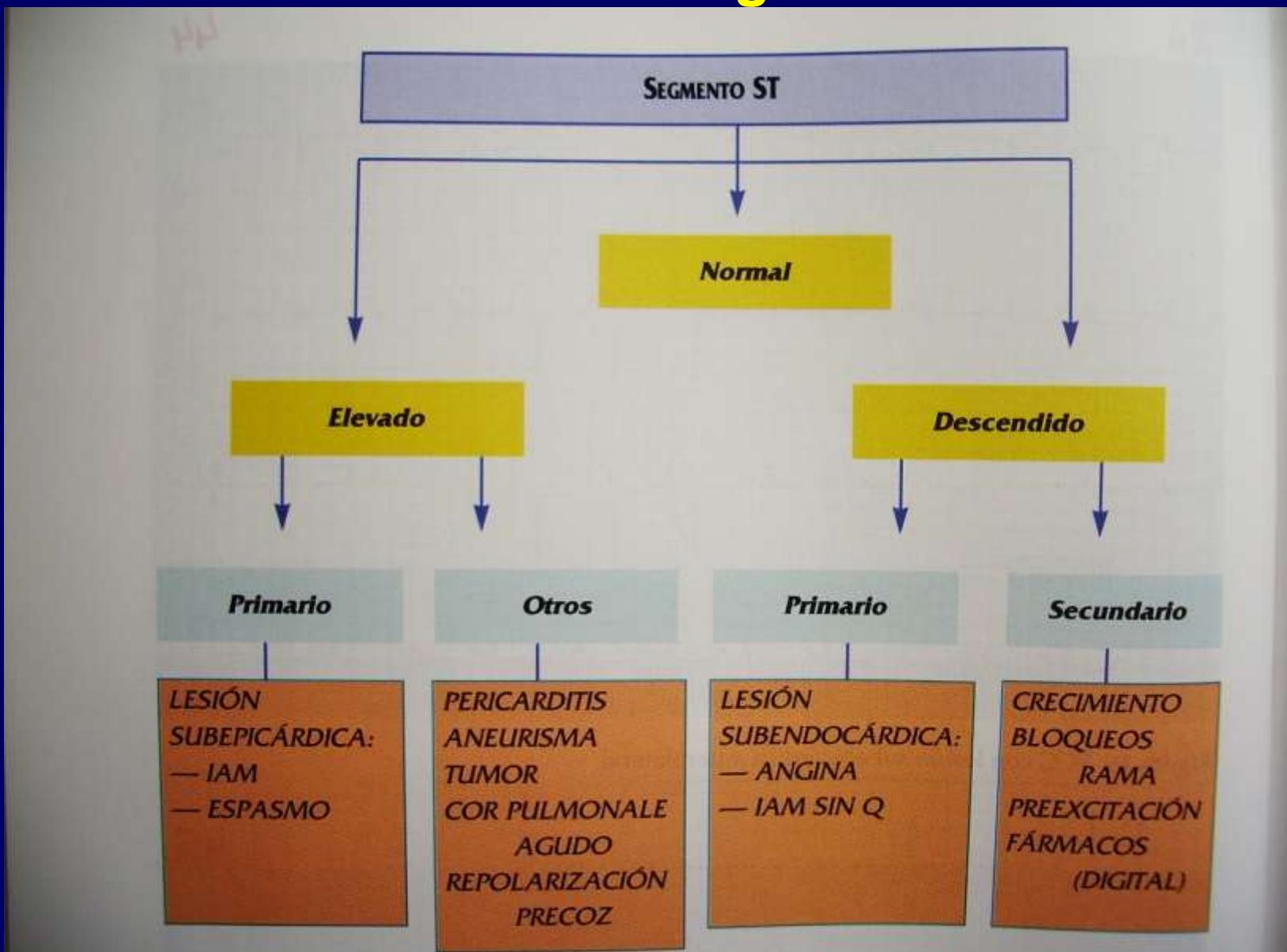
# Interpretación del E.C.G.

## Evaluación del segmento ST

- ✓ **ST elevado:**
  - ✓ **Primario:**
    - ✓ Lesión subepicárdica: Infarto agudo de miocardio, vasoespasmo coronario
  - ✓ **Otros:**
    - ✓ Pericarditis
    - ✓ Aneurisma
    - ✓ Tumor
    - ✓ Cor pulmonale agudo
    - ✓ Repolarización precoz
- ✓ **ST descendido:**
  - ✓ **Primario:**
    - ✓ Lesión subendocárdica: Angina inestable, infarto no-Q
  - ✓ **Secundario:**
    - ✓ Crecimiento de ventrículos
    - ✓ Trastorno de conducción
    - ✓ Preexcitación
    - ✓ Fármacos (digital)

# Interpretación del E.C.G.

## Evaluación del segmento ST



# Interpretación del E.C.G.

## Evaluación de la onda T

### ✓ Onda T aumentada:

#### ✓ Primaria:

✓ Isquemia subendocárdica: Fase inicial del infarto de miocardio

#### ✓ Secundaria:

✓ Efecto vagal

✓ Sobrecarga de volumen del VI

✓ Hipertotassemia

### ✓ Onda T invertida:

#### ✓ Primaria:

✓ Isquemia subepicárdica: Angina inestable

#### ✓ Secundaria:

✓ Crecimiento de ventrículos

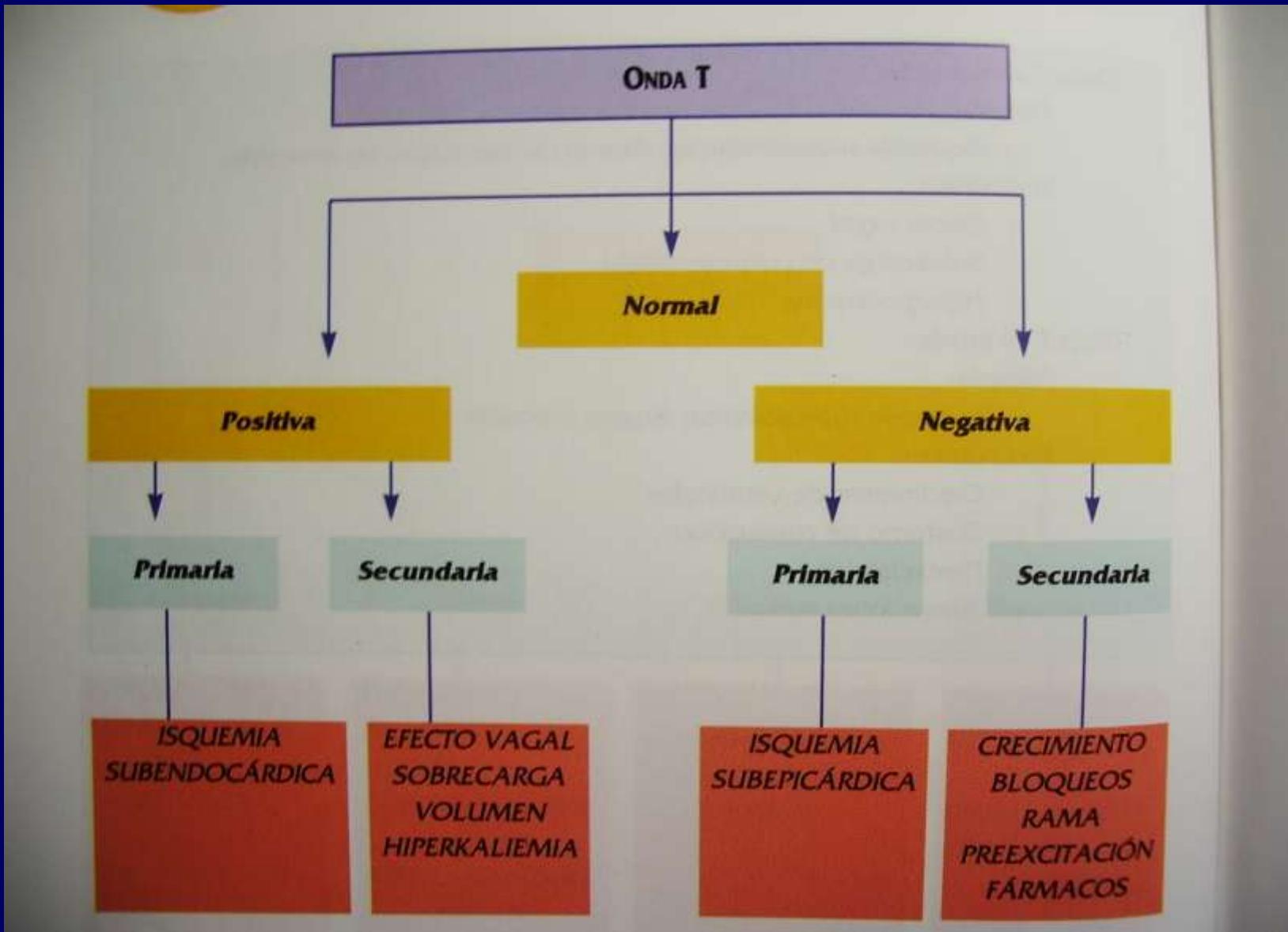
✓ Trastorno de conducción

✓ Preexcitación

✓ Alteraciones iónicas

# Interpretación del E.C.G.

## Evaluación de la onda T



# Interpretación del E.C.G.

## El Ritmo cardiaco

### ✓ Sinusal:

#### ✓ Extrasístole:

✓ No: Ritmo Sinusal Normal

✓ Si

#### ✓ QRS:

✓ Estrecho: Extrasístole supraventricular

✓ Ancho: Extrasístole ventricular

### ✓ "Arrítmico"

#### ✓ Regular:

#### ✓ QRS:

#### ✓ Ancho:

✓ Taquicardia ventricular

✓ Taquicardia supraventricular con aberrancia

#### ✓ Estrecho:

✓ Flúter auricular

✓ Taquicardia supraventricular paroxística

✓ Taquicardia auricular

#### ✓ Irregular:

#### ✓ QRS:

#### ✓ Ancho:

✓ Fibrilación auricular con aberrancia o preexcitación (WPW)

✓ Taquicardia ventricular

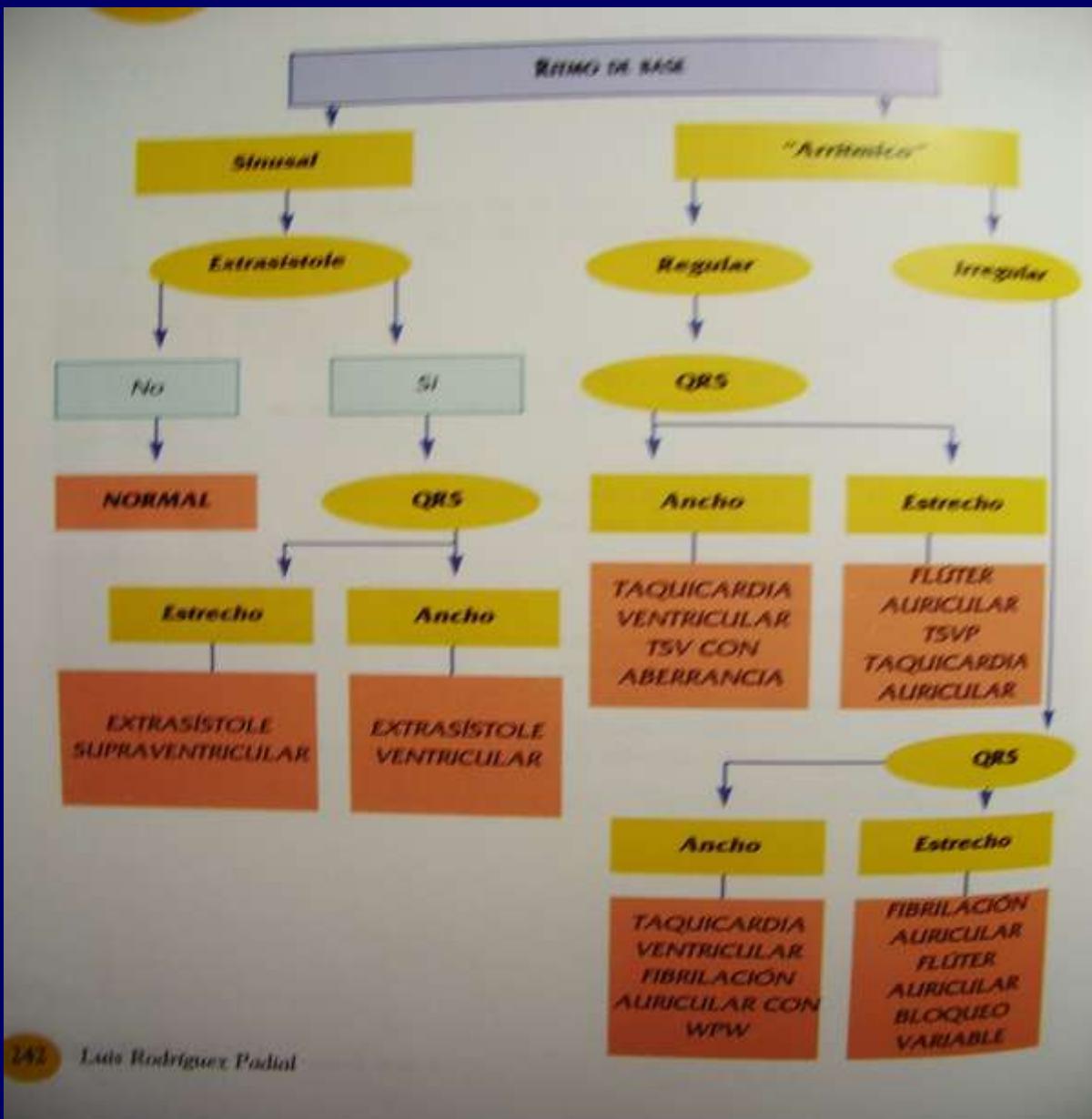
#### ✓ Estrecho:

✓ Fibrilación auricular

✓ Flúter auricular con bloqueo AV variable

# Interpretación del E.C.G.

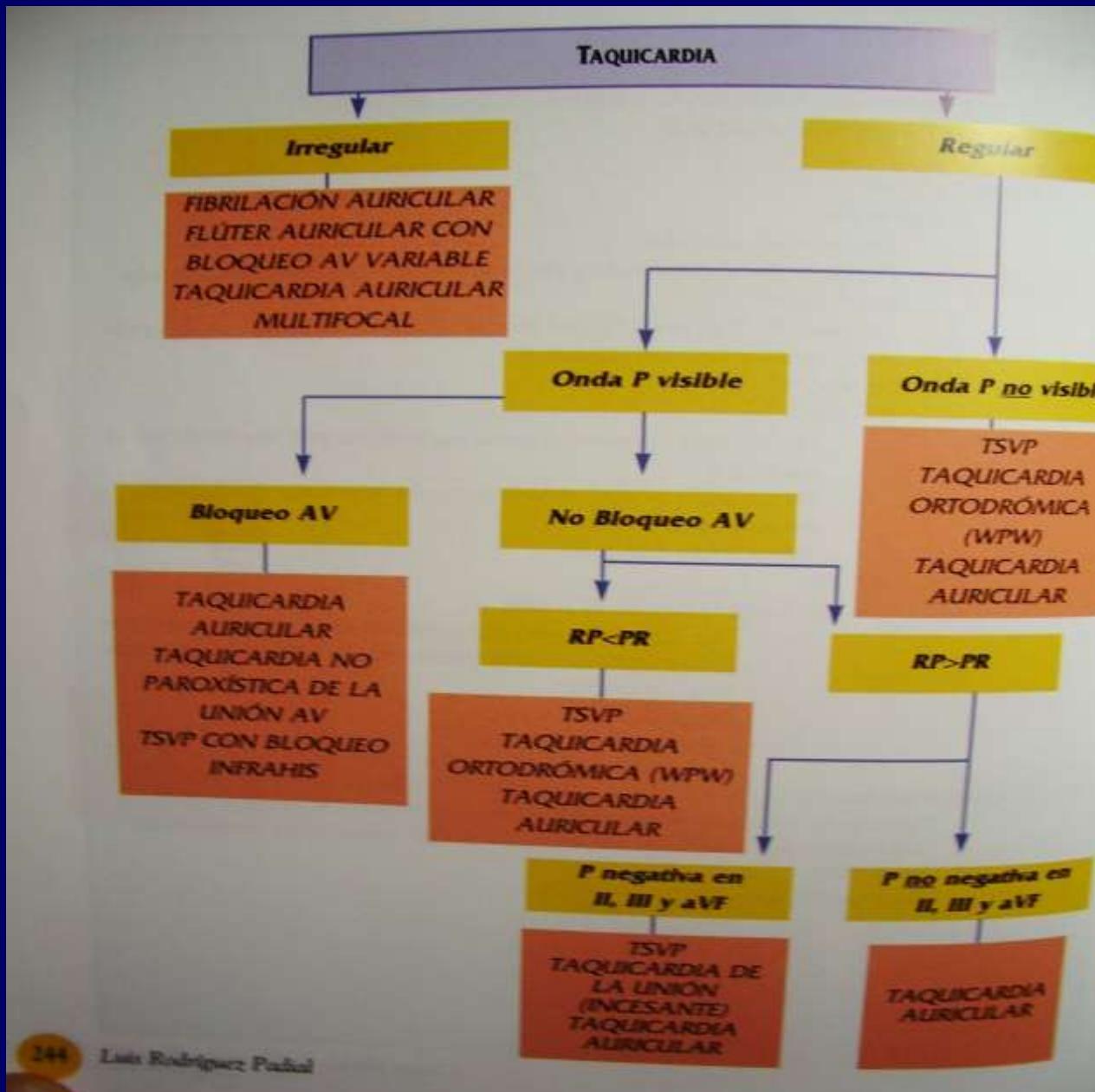
## El Ritmo cardíaco



# Evaluación de Taquicardia QRS estrecho

- ✓ Irregular:
  - ✓ Fibrilación auricular:
  - ✓ Flúter auricular con bloqueo AV variable
  - ✓ Taquicardia auricular multifocal
- ✓ Regular:
  - ✓ Onda P visible:
    - ✓ Bloqueo AV:
      - ✓ Taquicardia auricular
      - ✓ Taquicardia no paroxística de la unión (con dissociación auriculoventricular)
      - ✓ Taquicardia supraventricular paroxística por reentrada en el nodo AV (con bloqueo infrahisiano)
    - ✓ No bloqueo AV:
      - ✓ RP<PR:
        - ✓ Taquicardia supraventricular paroxística por reentrada en el nodo AV
        - ✓ Taquicardia por reentrada auriculoventricular (taquicardia ortodrómica del WPW)
        - ✓ Taquicardia auricular
      - ✓ RP>PR:
        - ✓ P negativa en II, III y aVF:
          - ✓ Taquicardia reciproante de la unión (forma incesante)
          - ✓ Taquicardia supraventricular paroxística por reentrada en el nodo AV
          - ✓ Taquicardia auricular
        - ✓ P no negativa en II, III y aVF:
          - ✓ Taquicardia auricular
  - ✓ Onda P no visible:
    - ✓ Taquicardia supraventricular paroxística por reentrada en el nodo AV
    - ✓ Taquicardia por reentrada auriculoventricular (taquicardia ortodrómica del WPW)
    - ✓ Taquicardia auricular

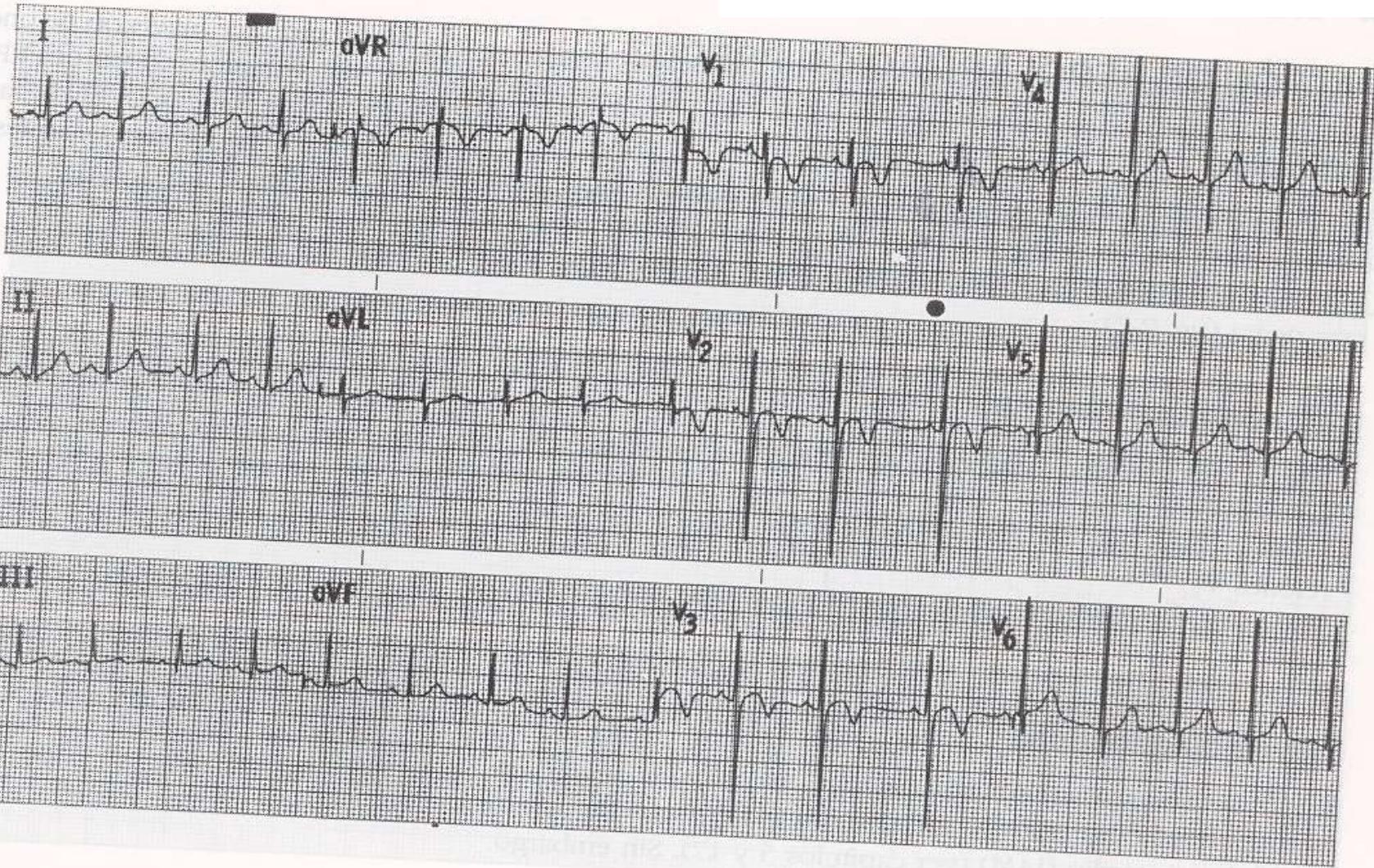
# Evaluación de Taquicardia QRS estrecho

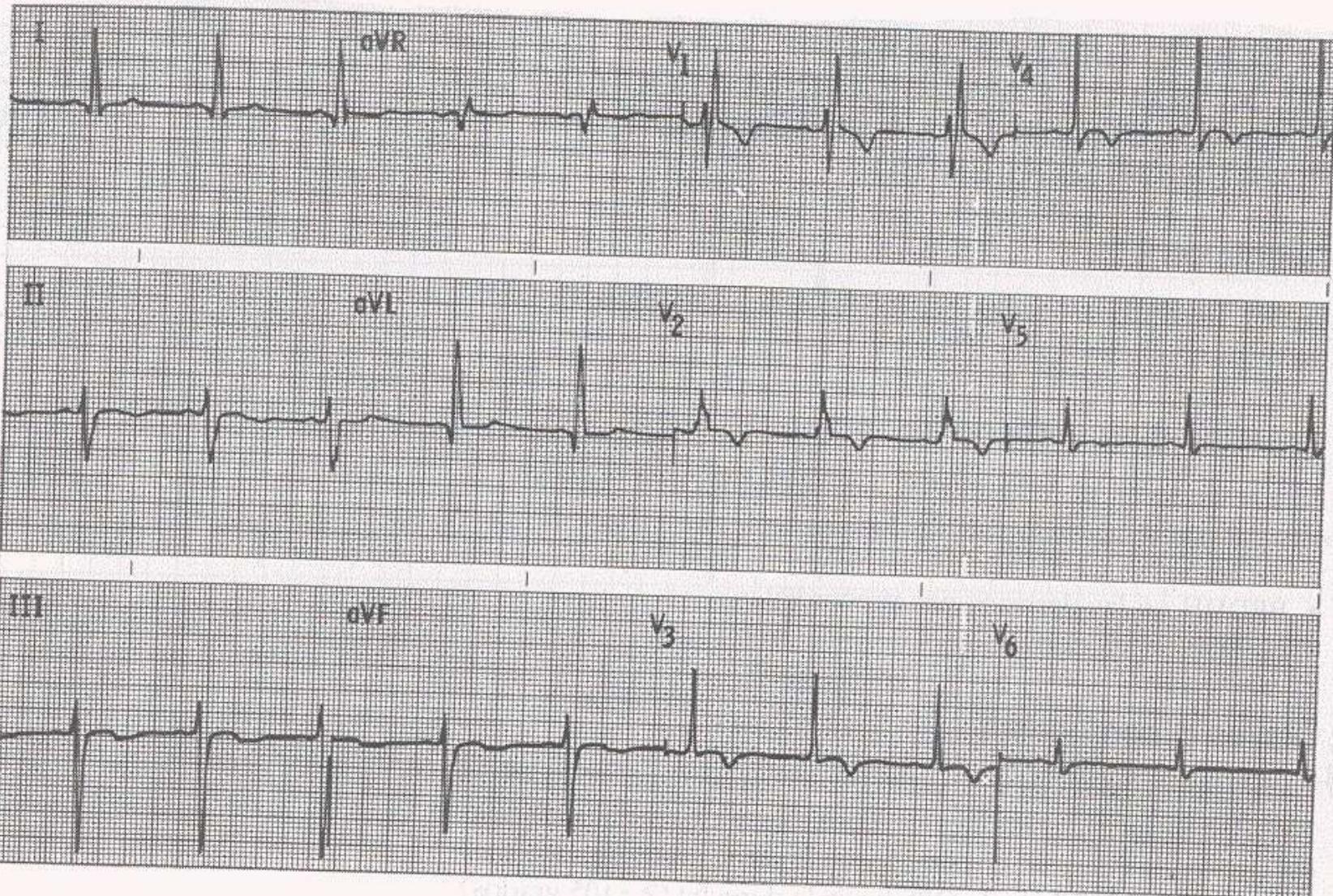


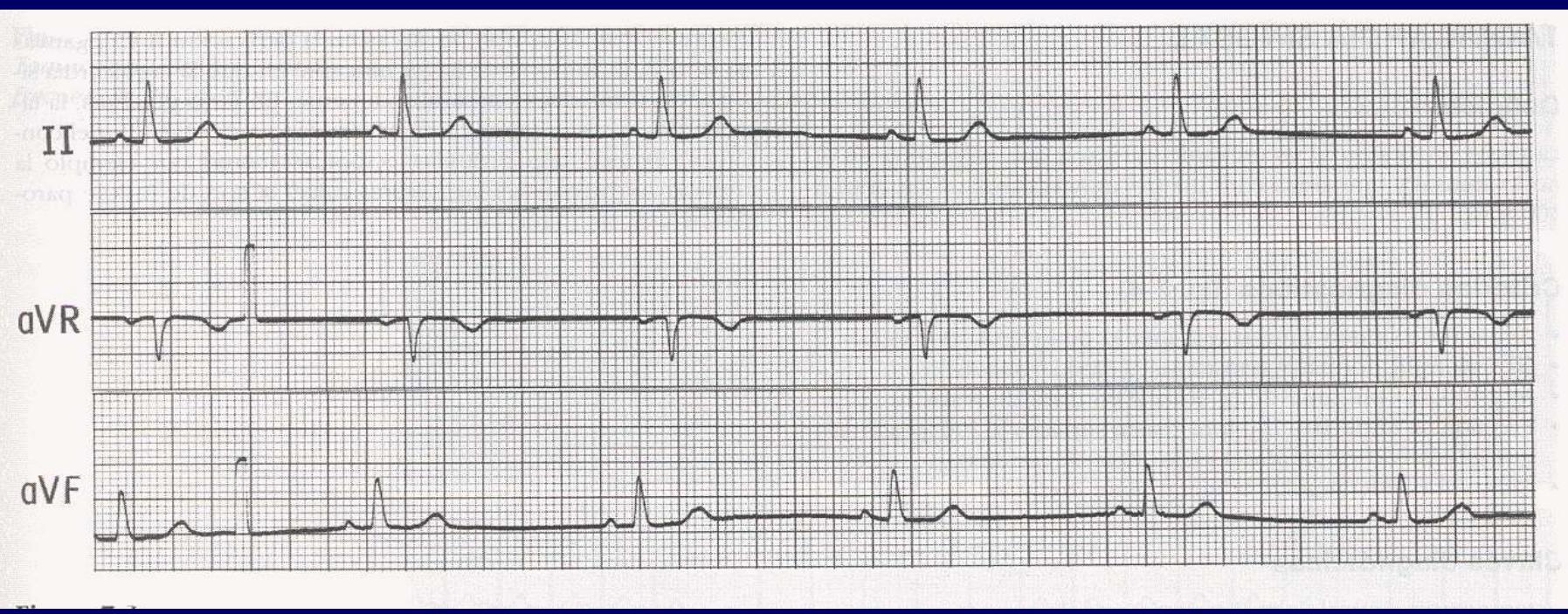
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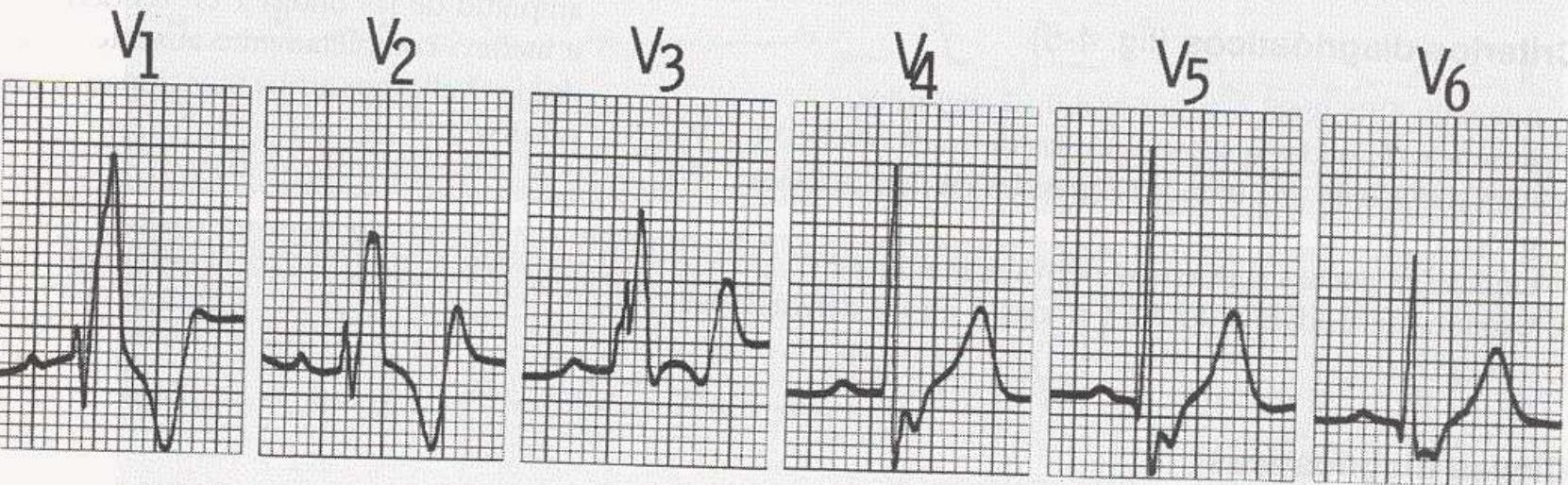
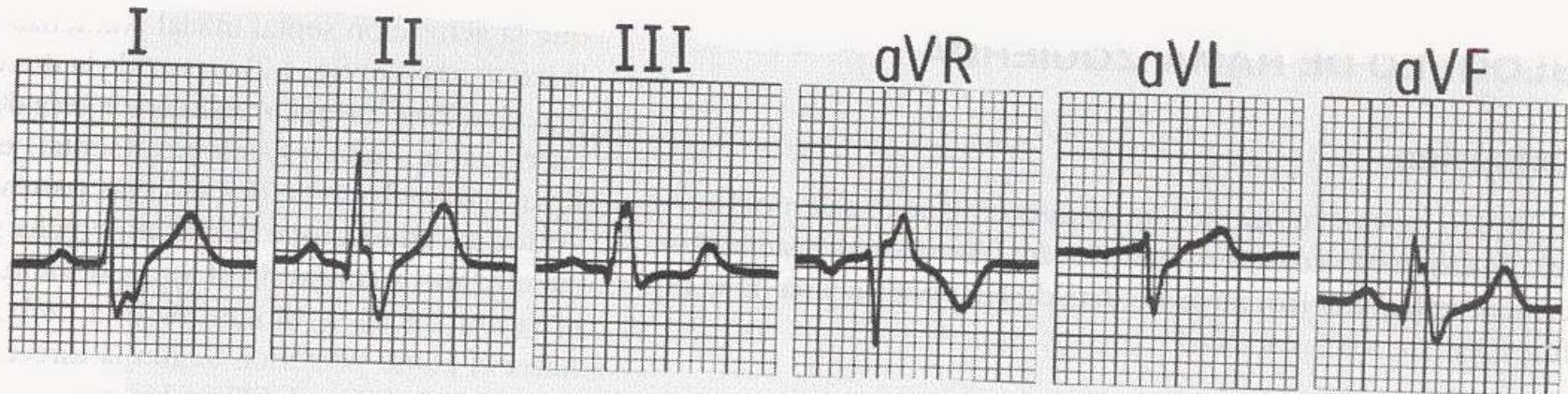
Algunos ECG prácticos

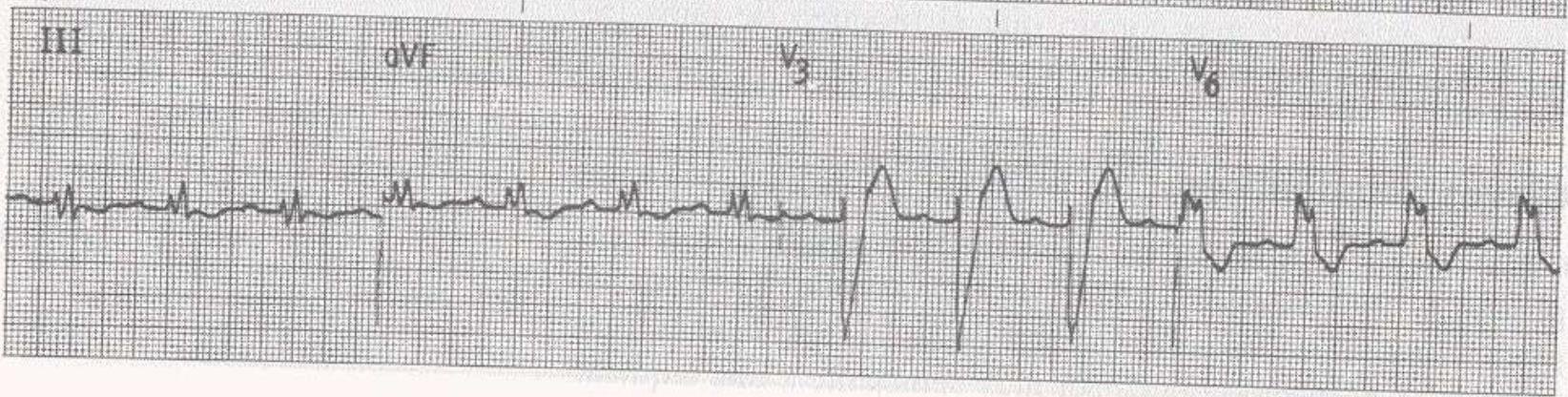
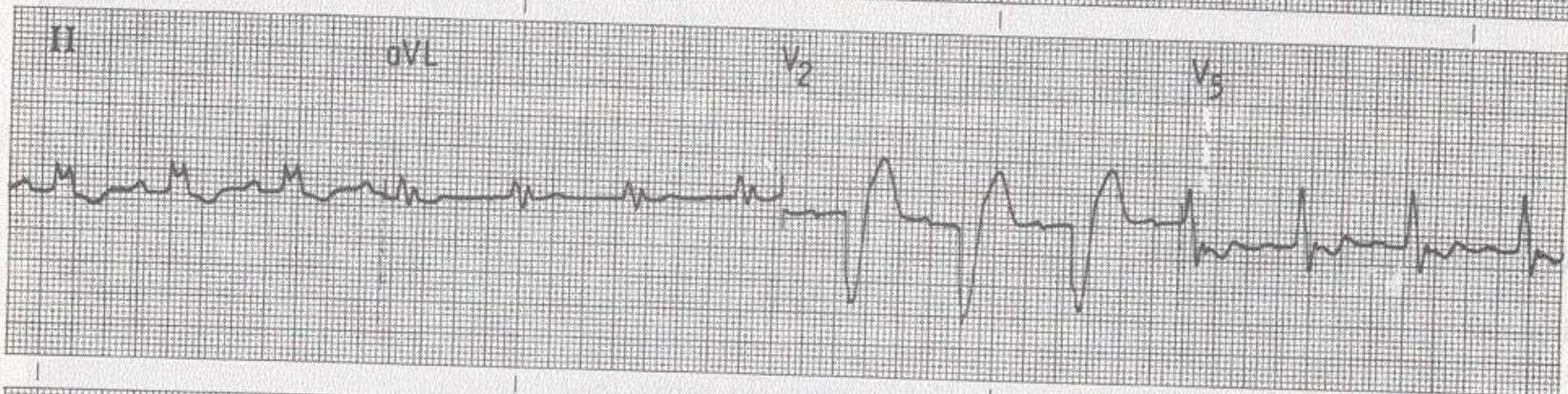
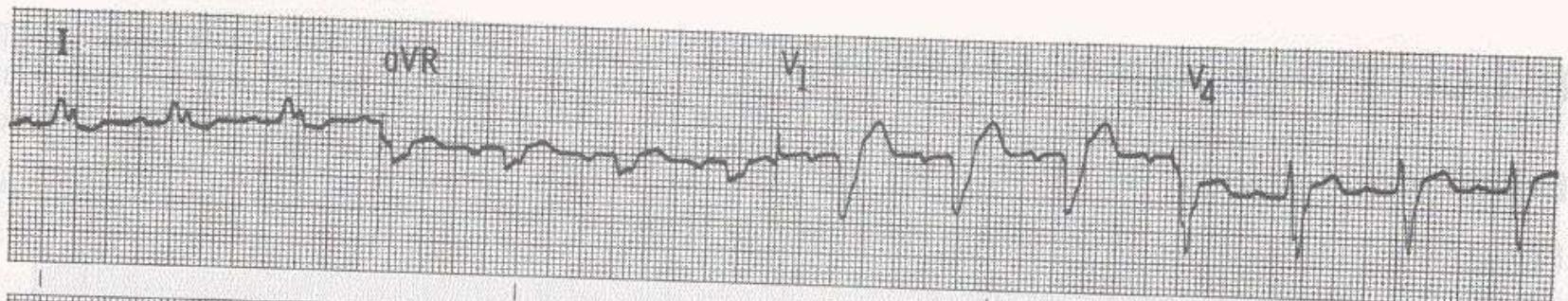
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F  
B  
C  
c

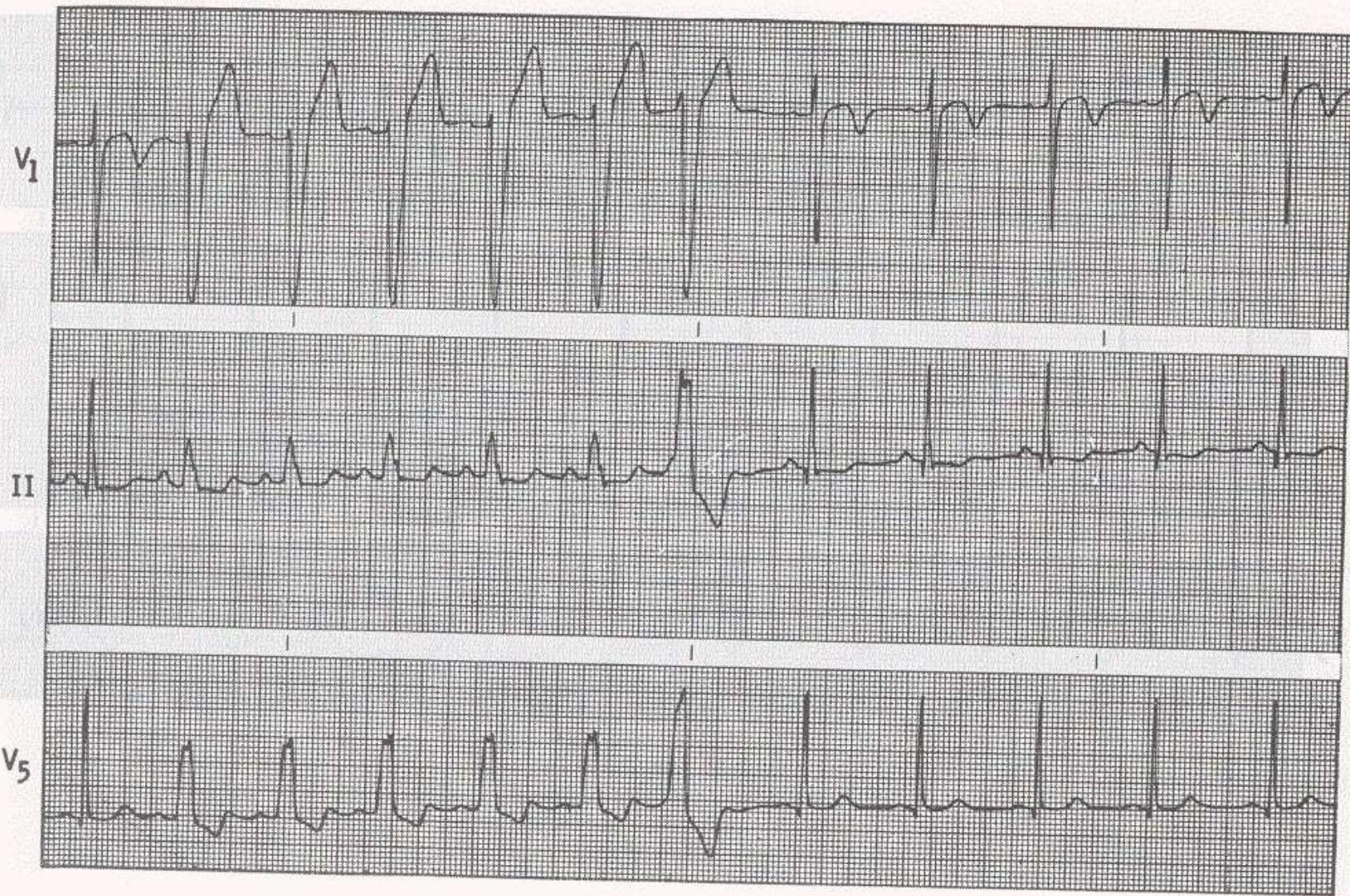
V1

II

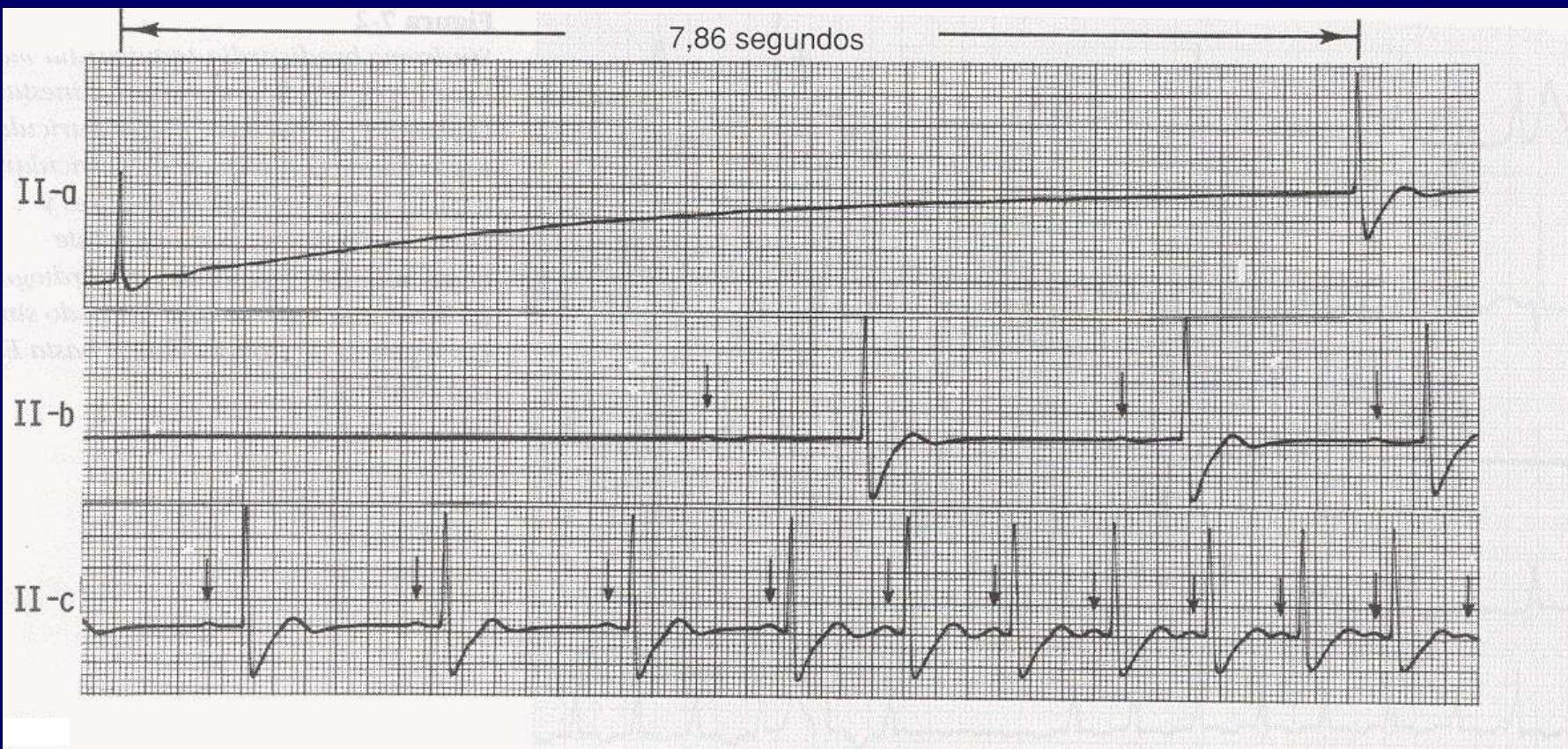
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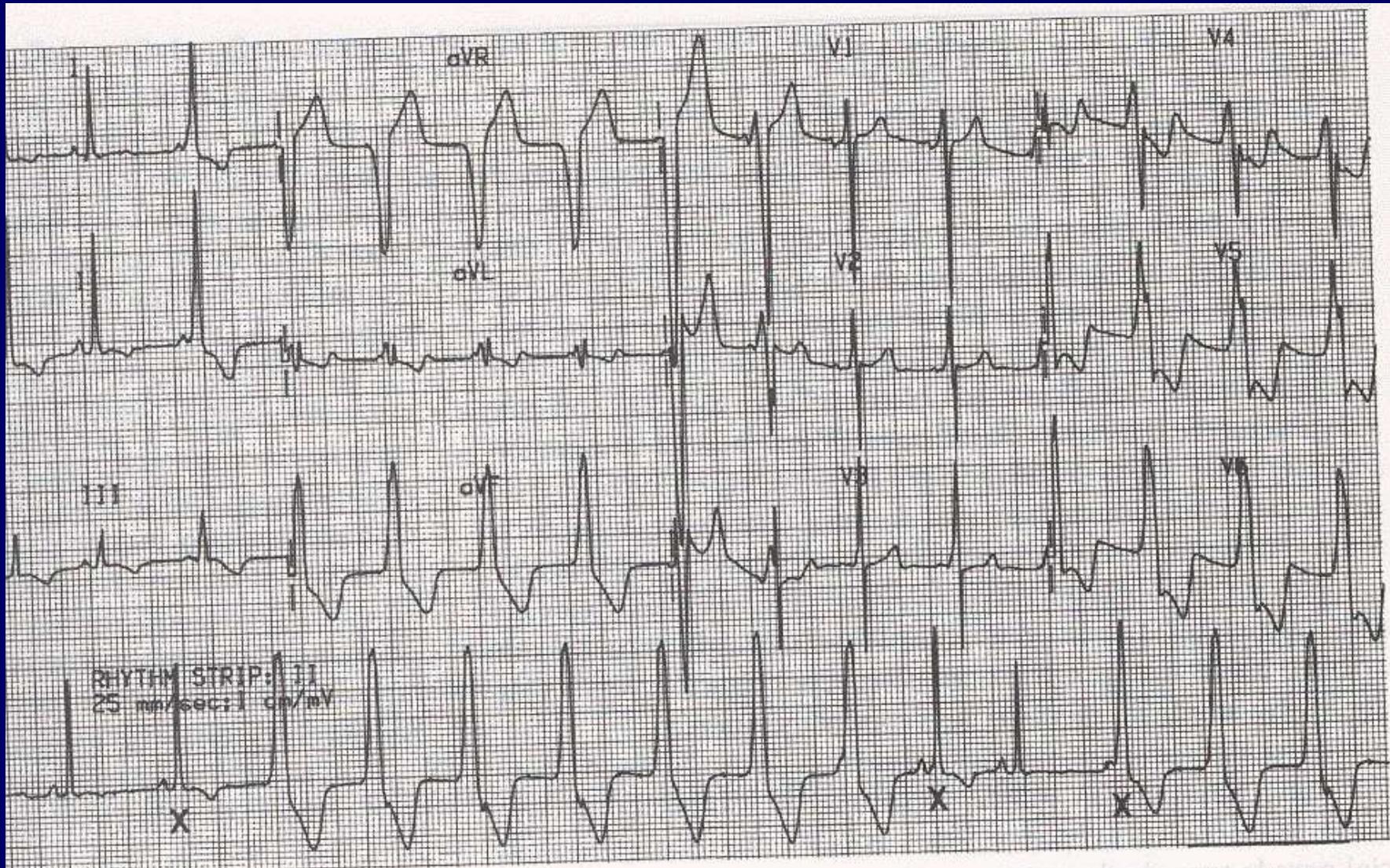
V5

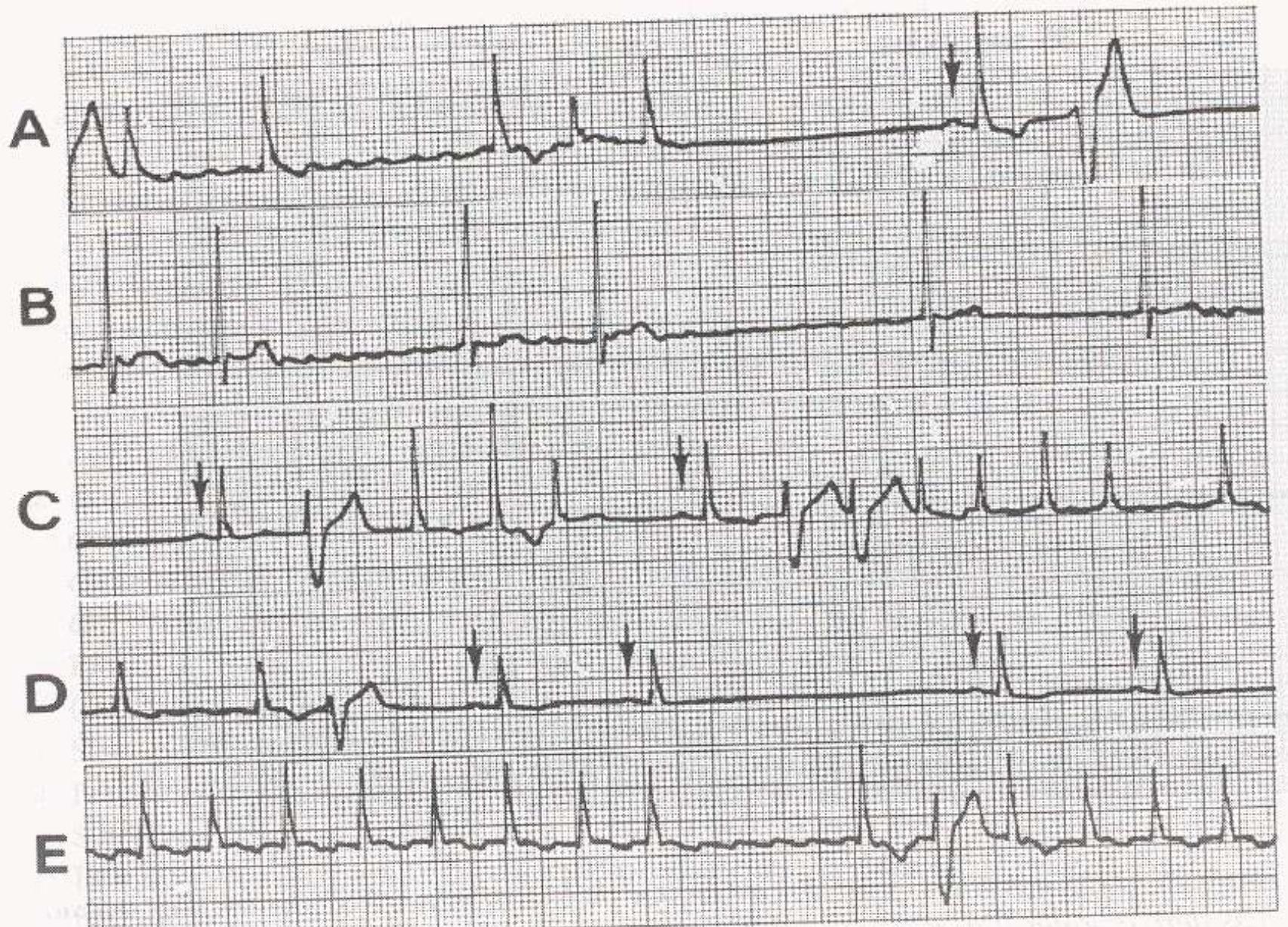
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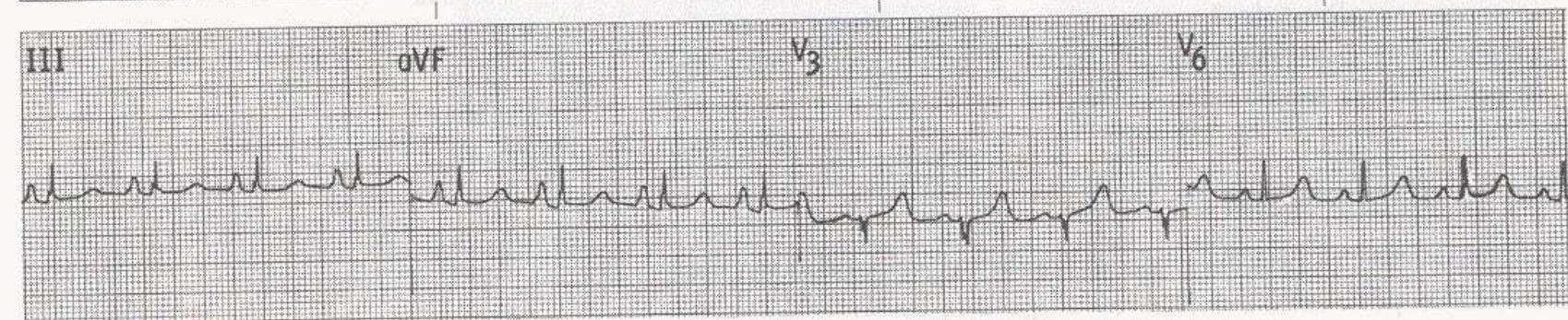
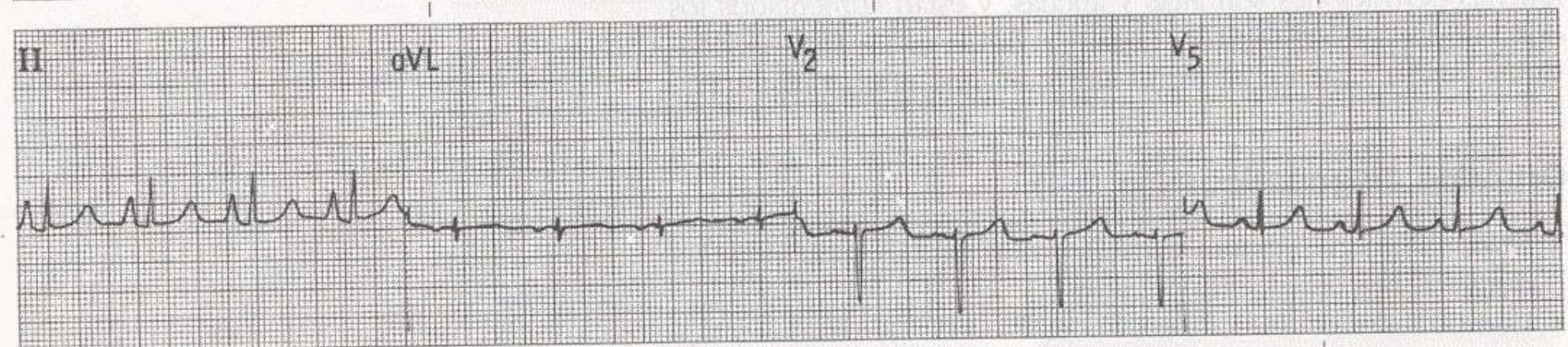
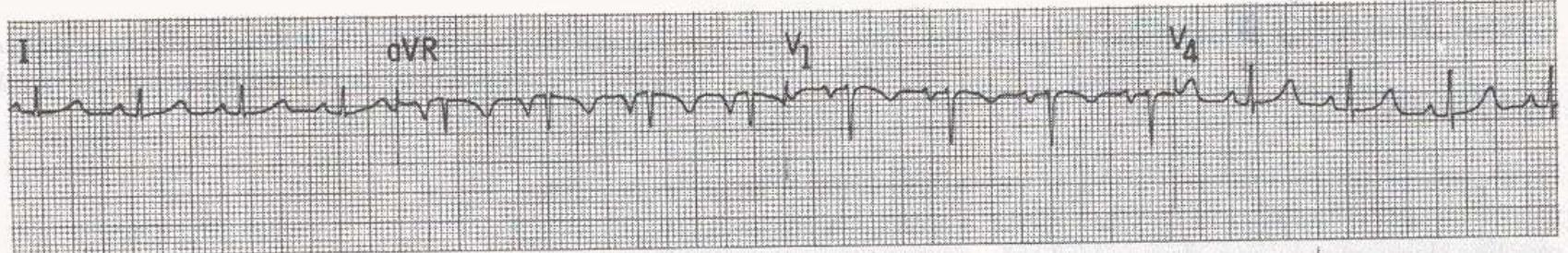


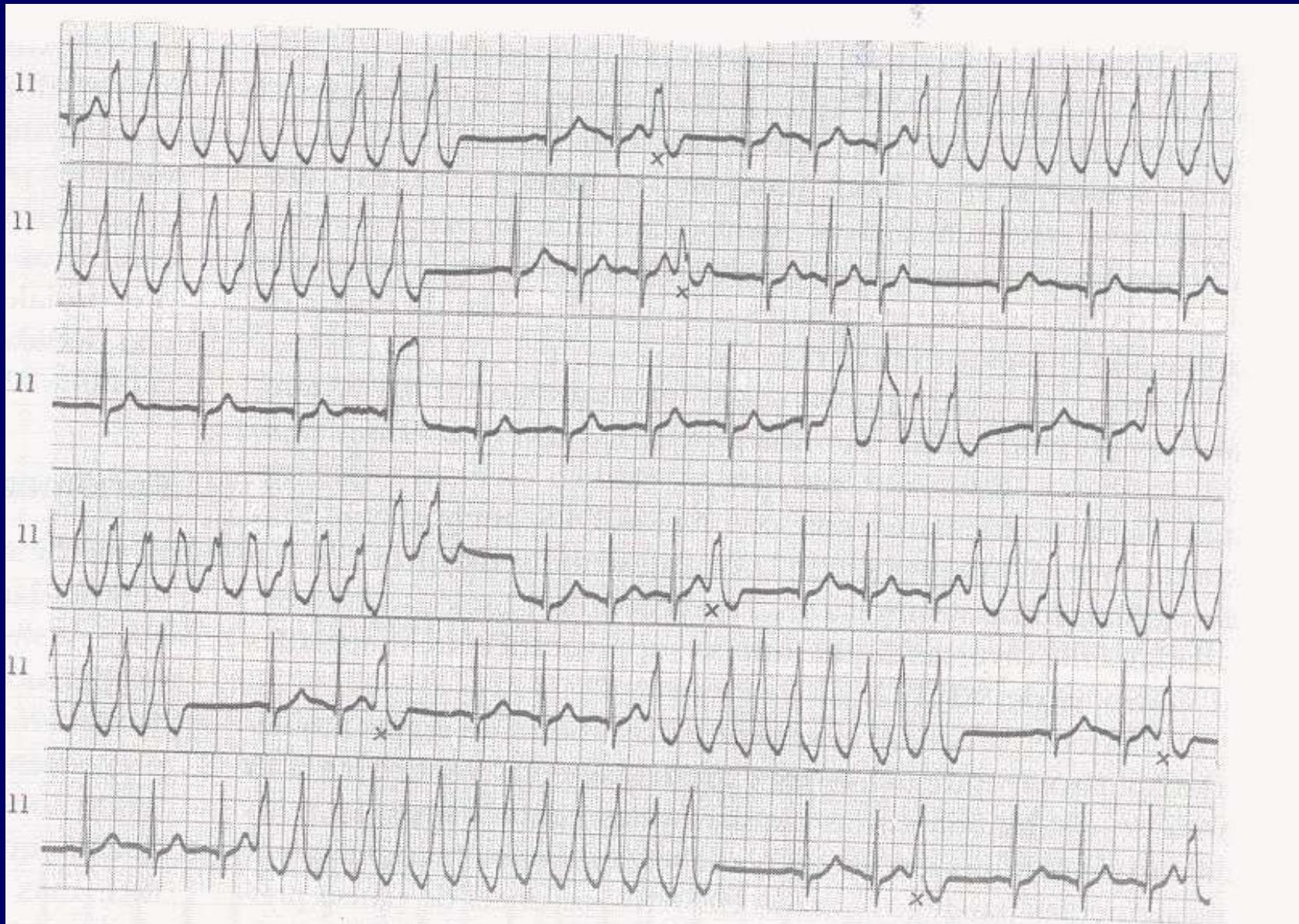
7,86 segundos

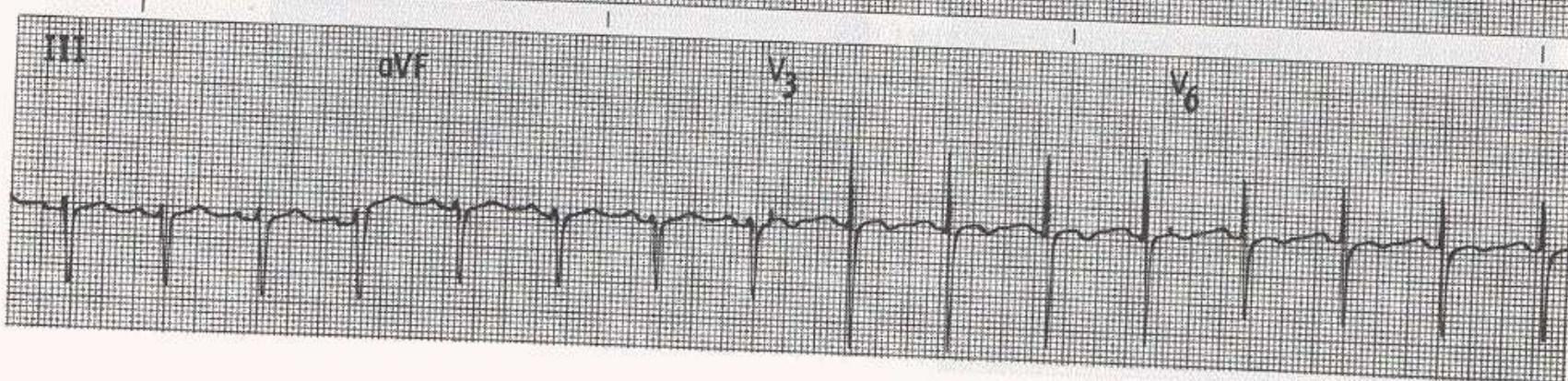
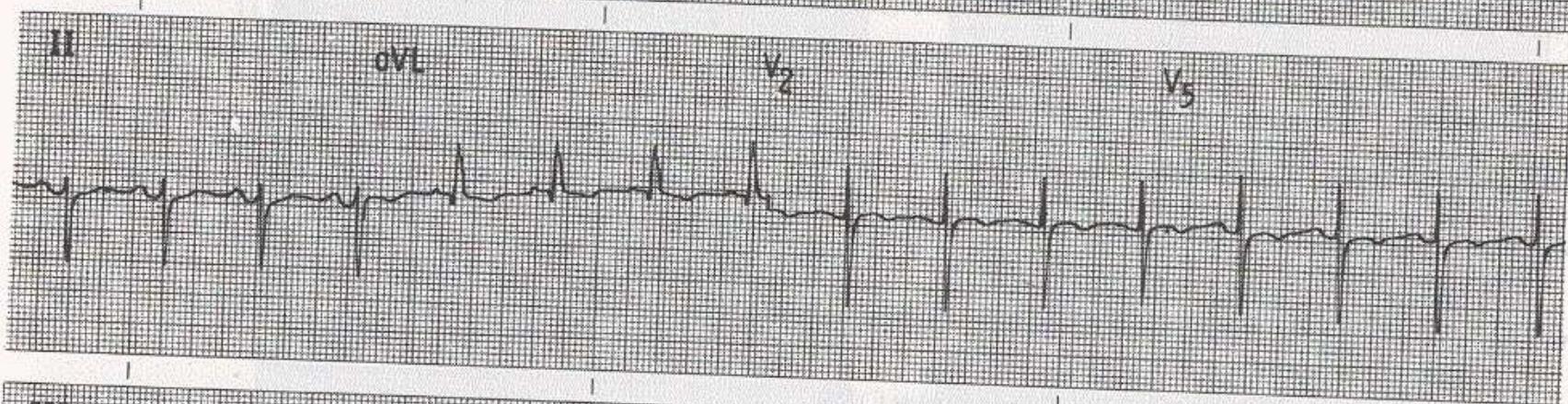
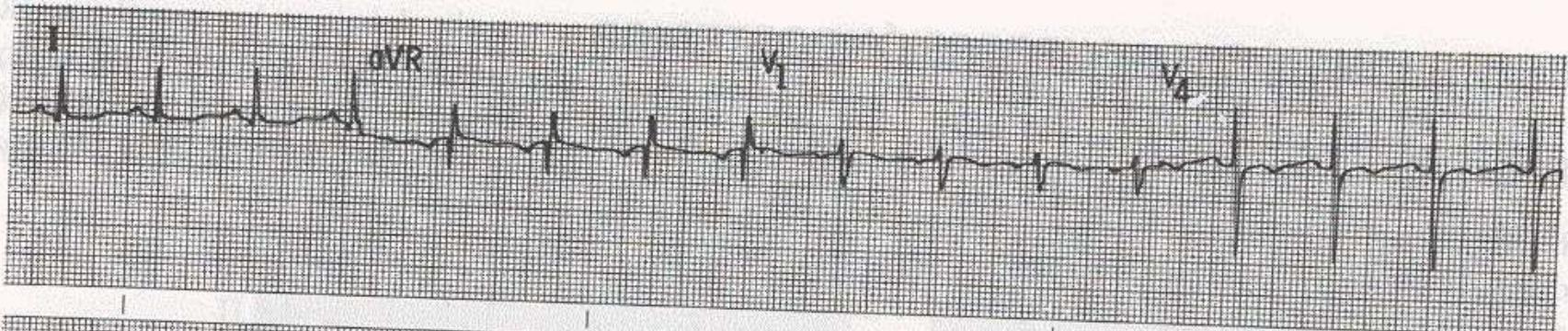


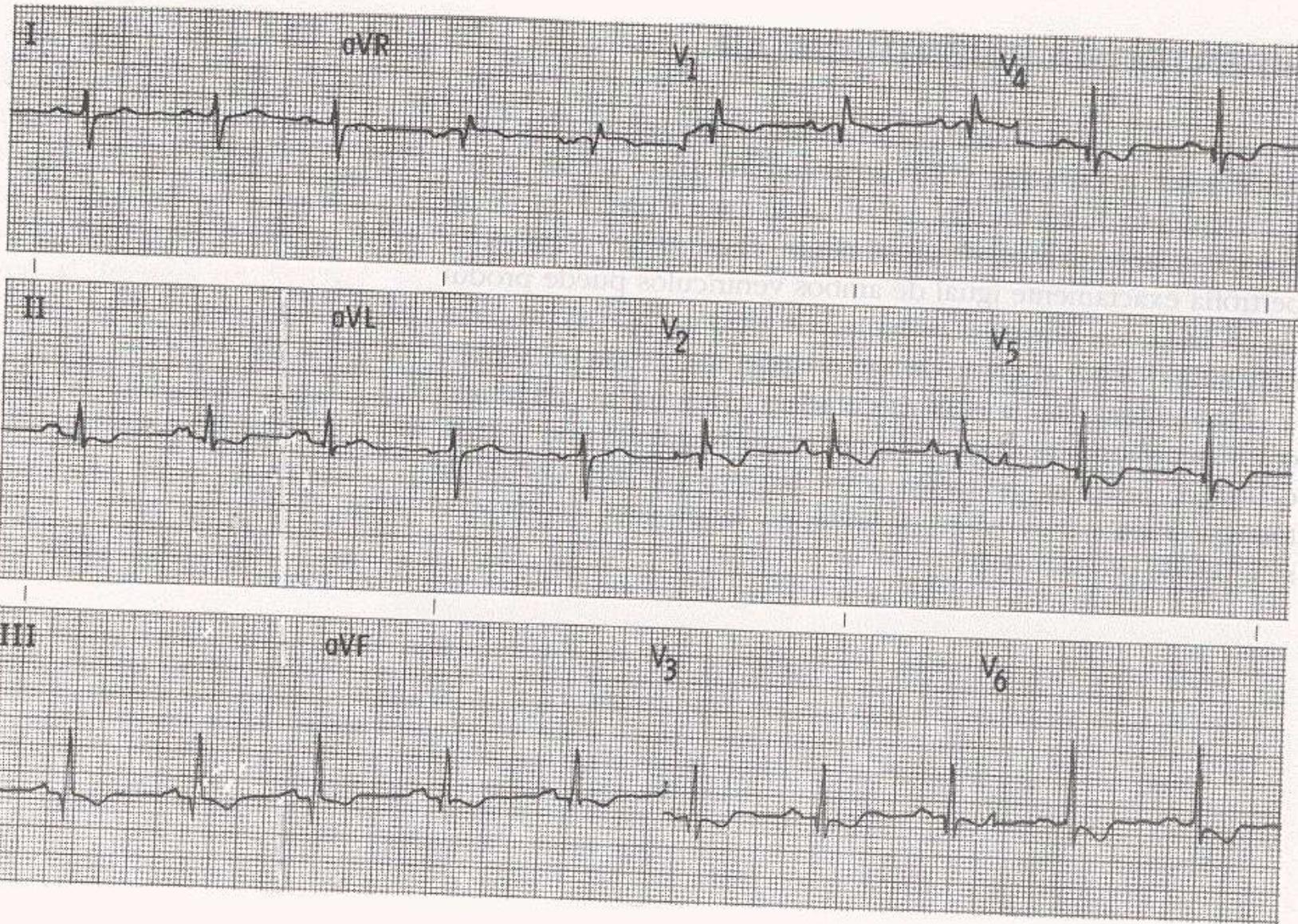


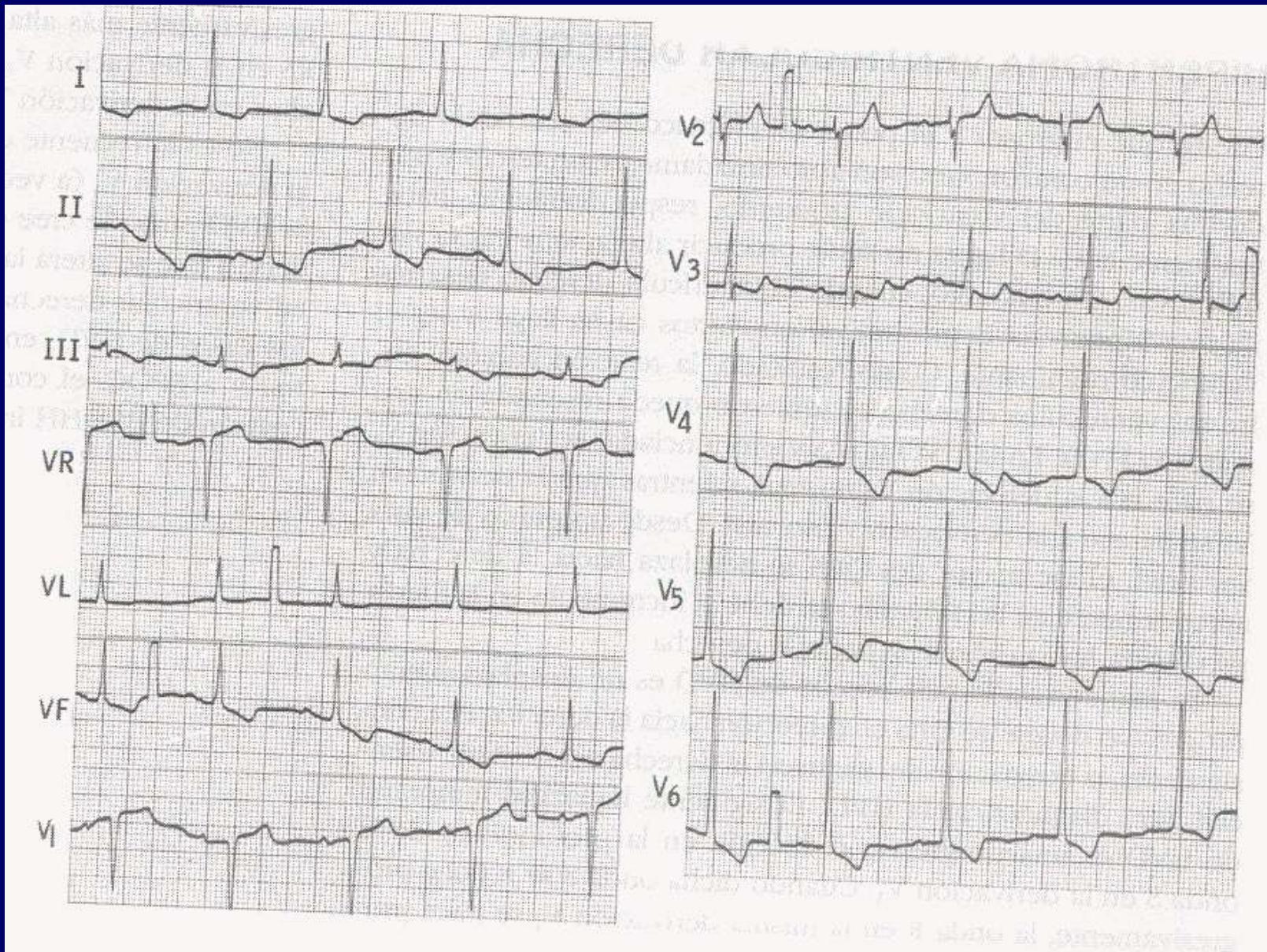


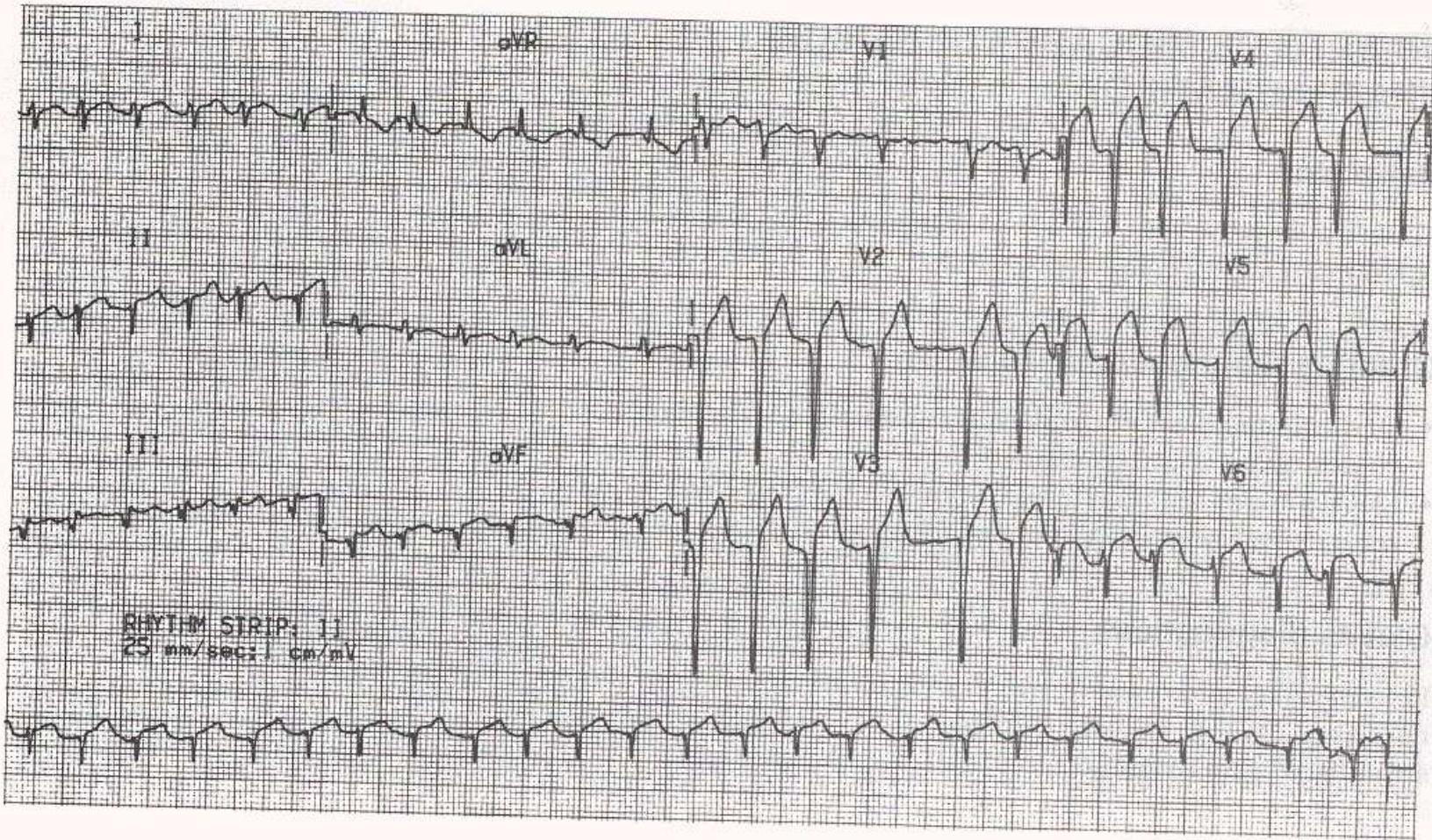


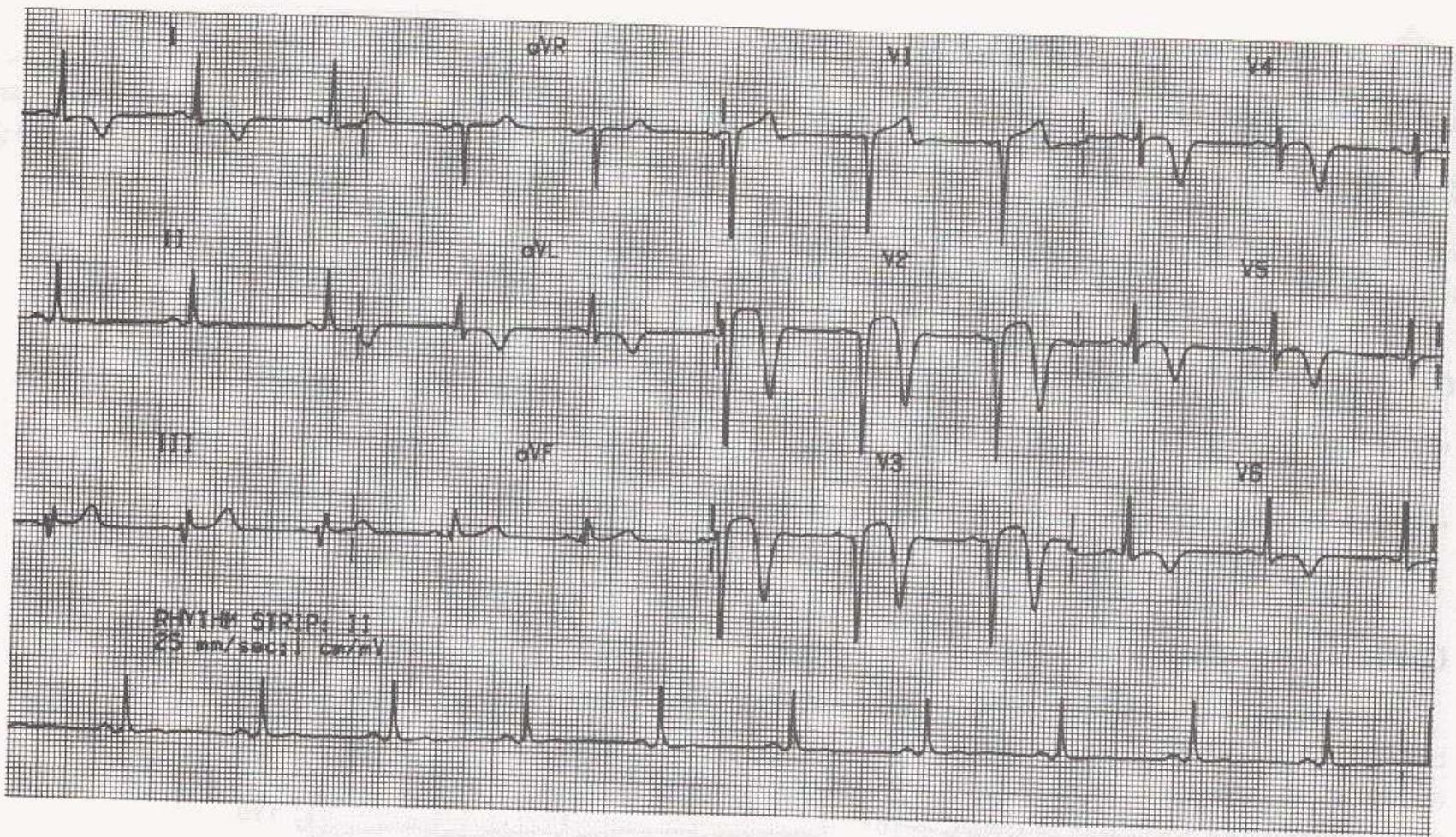


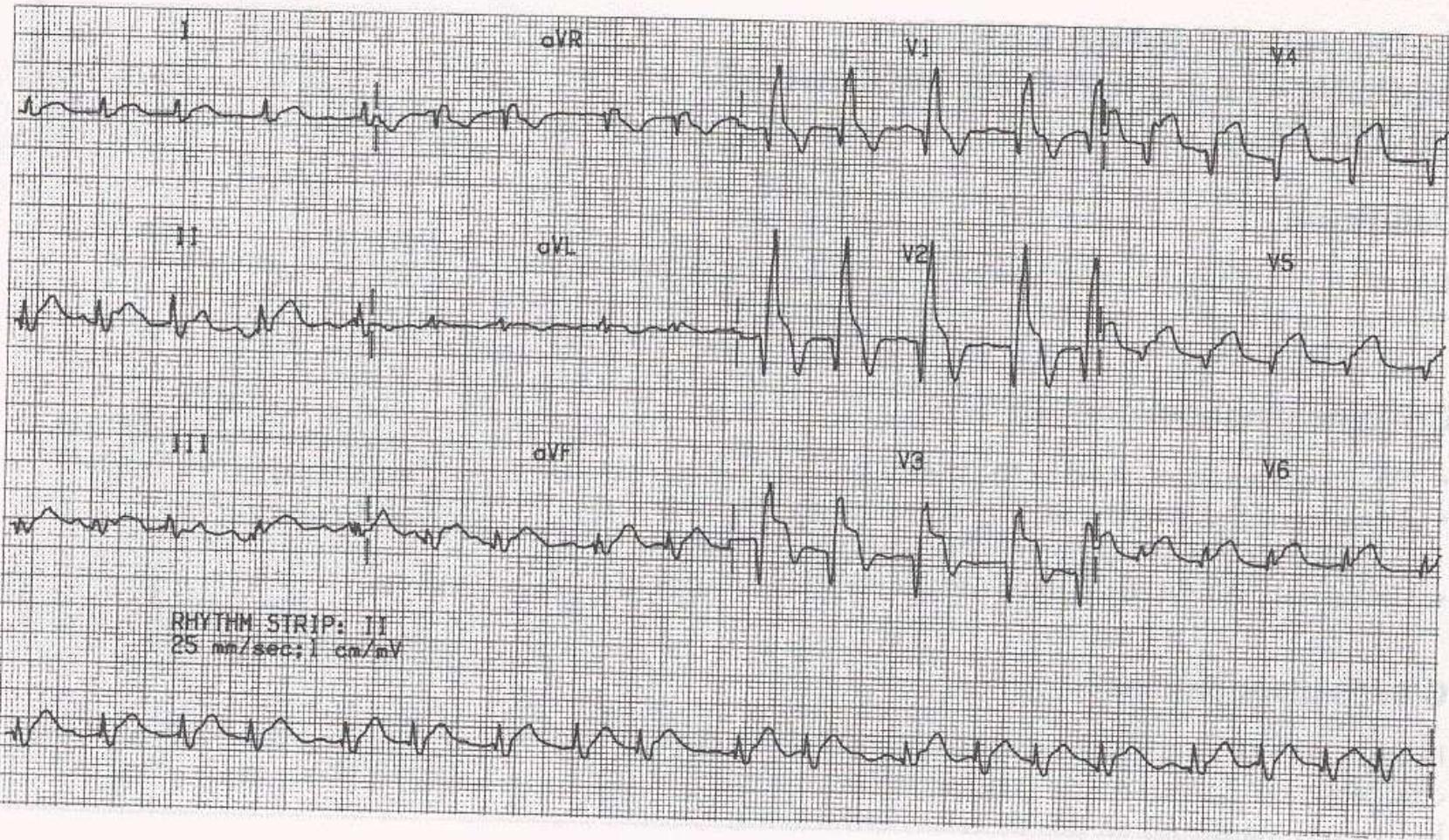


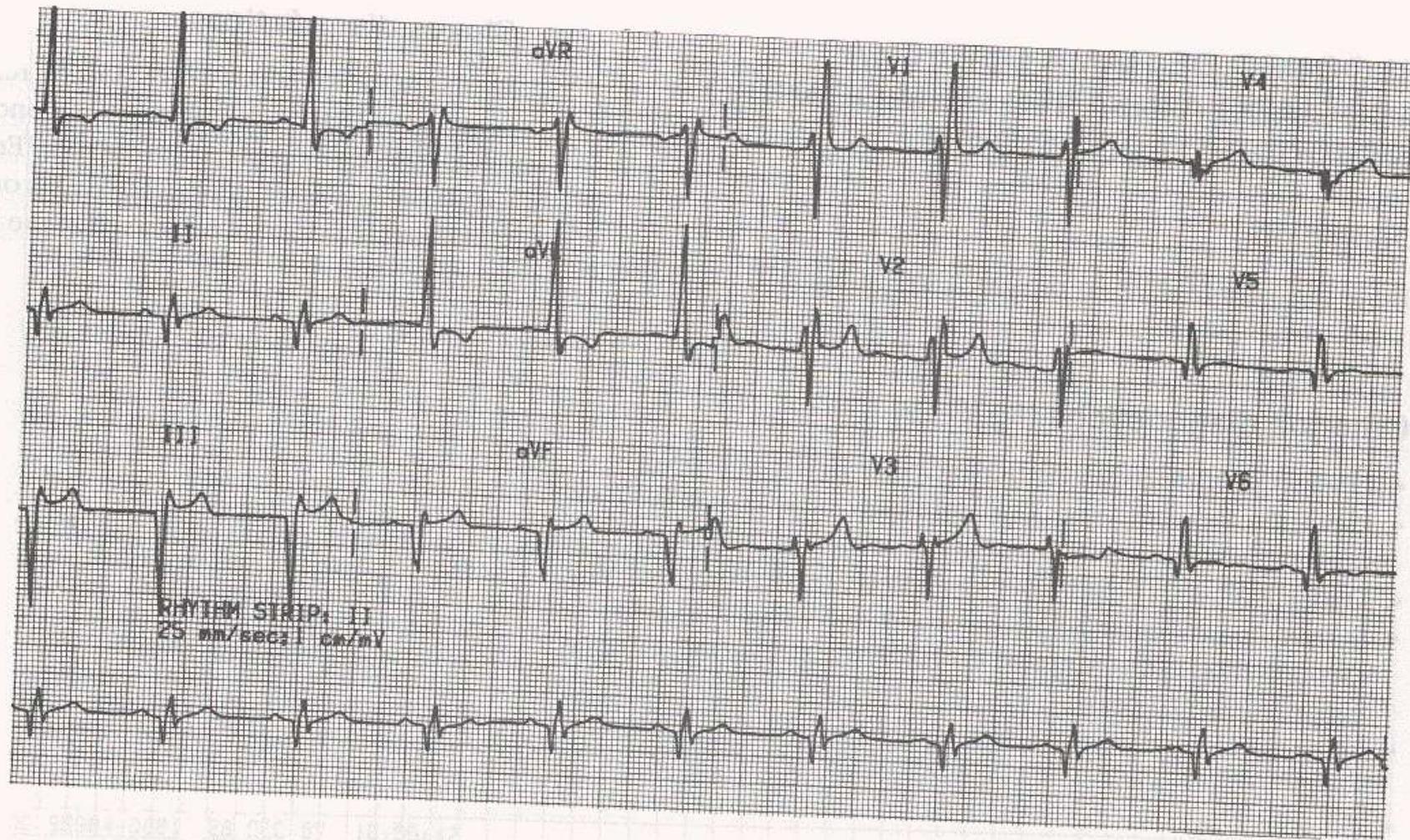


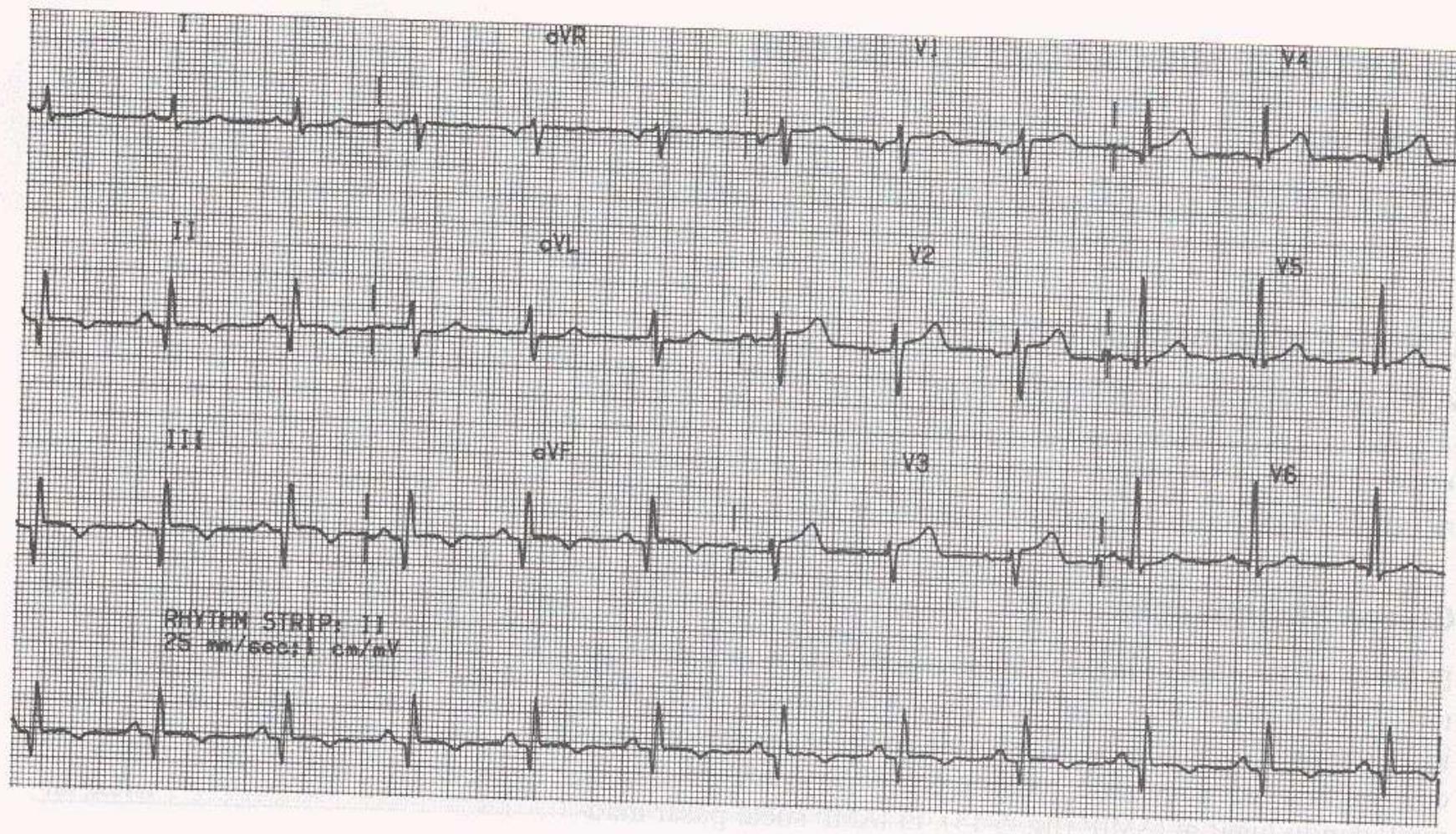


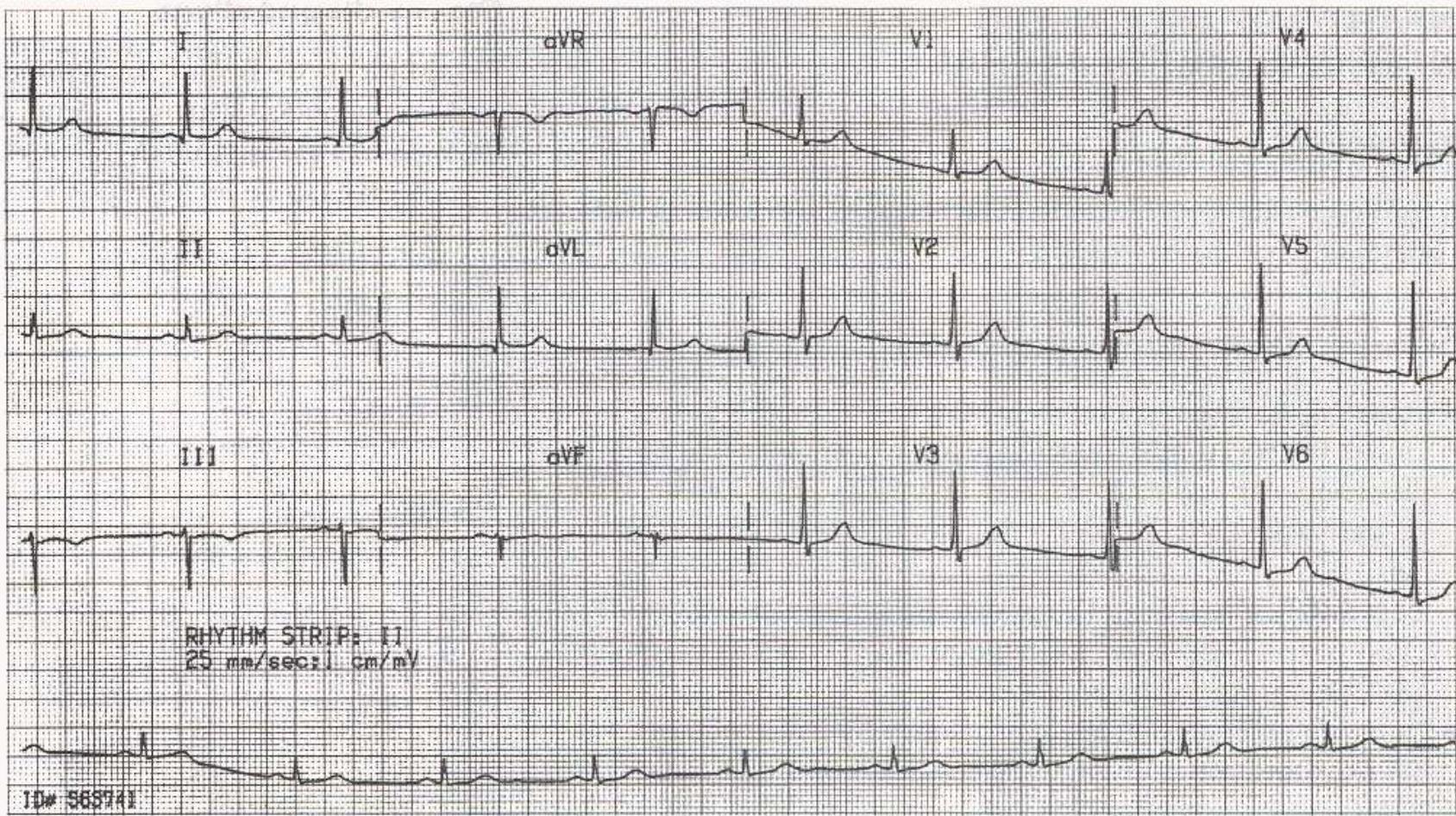


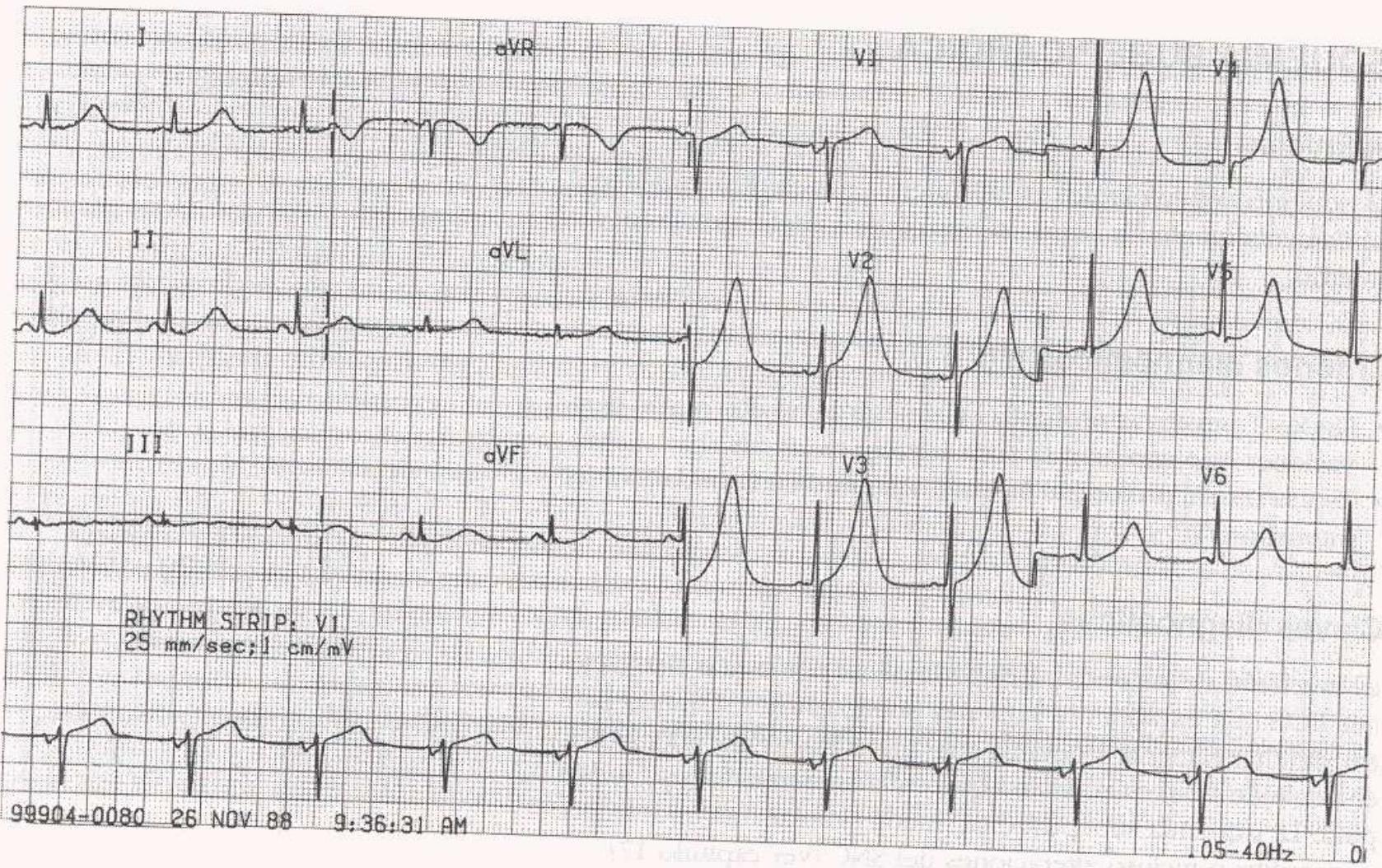


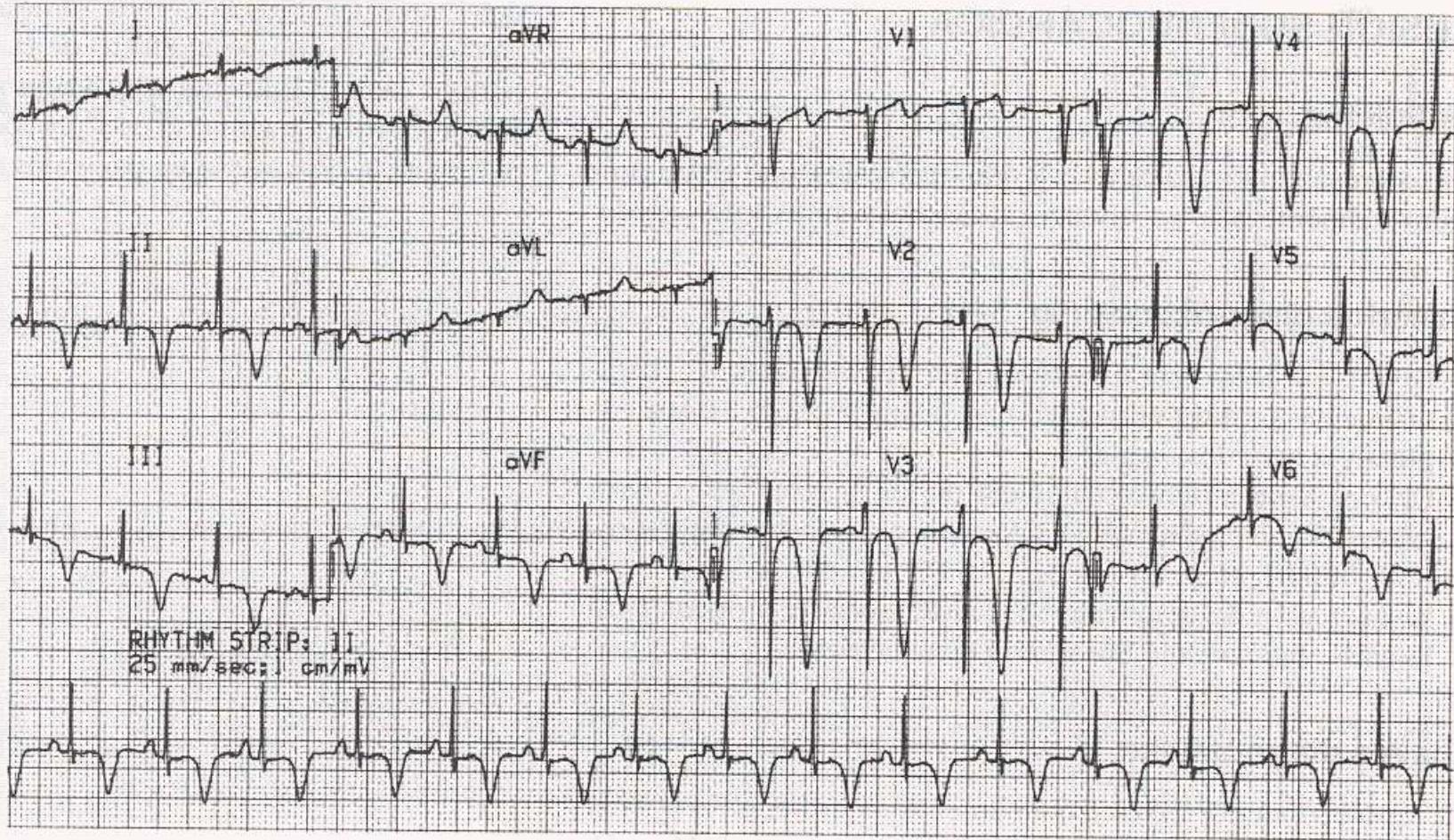


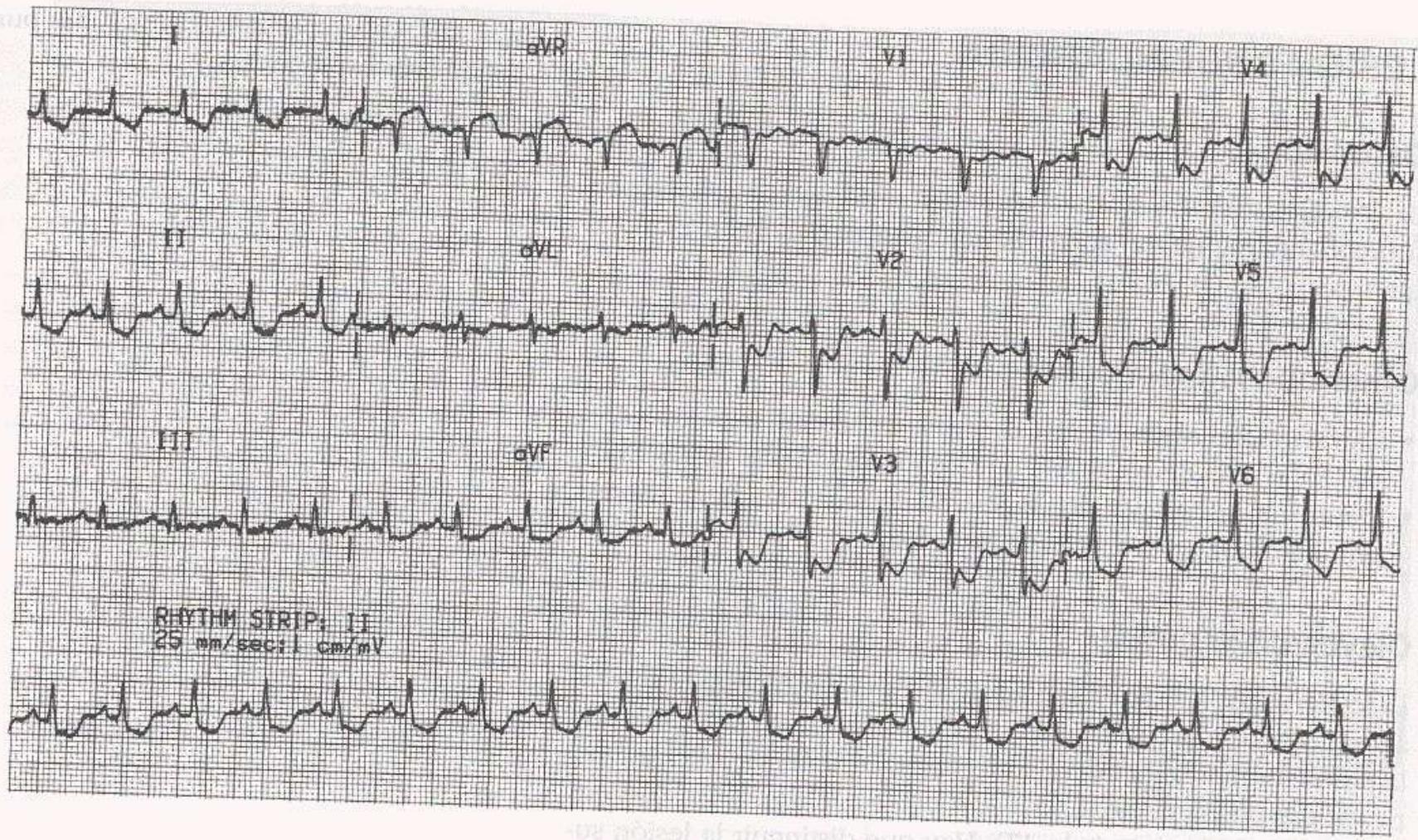


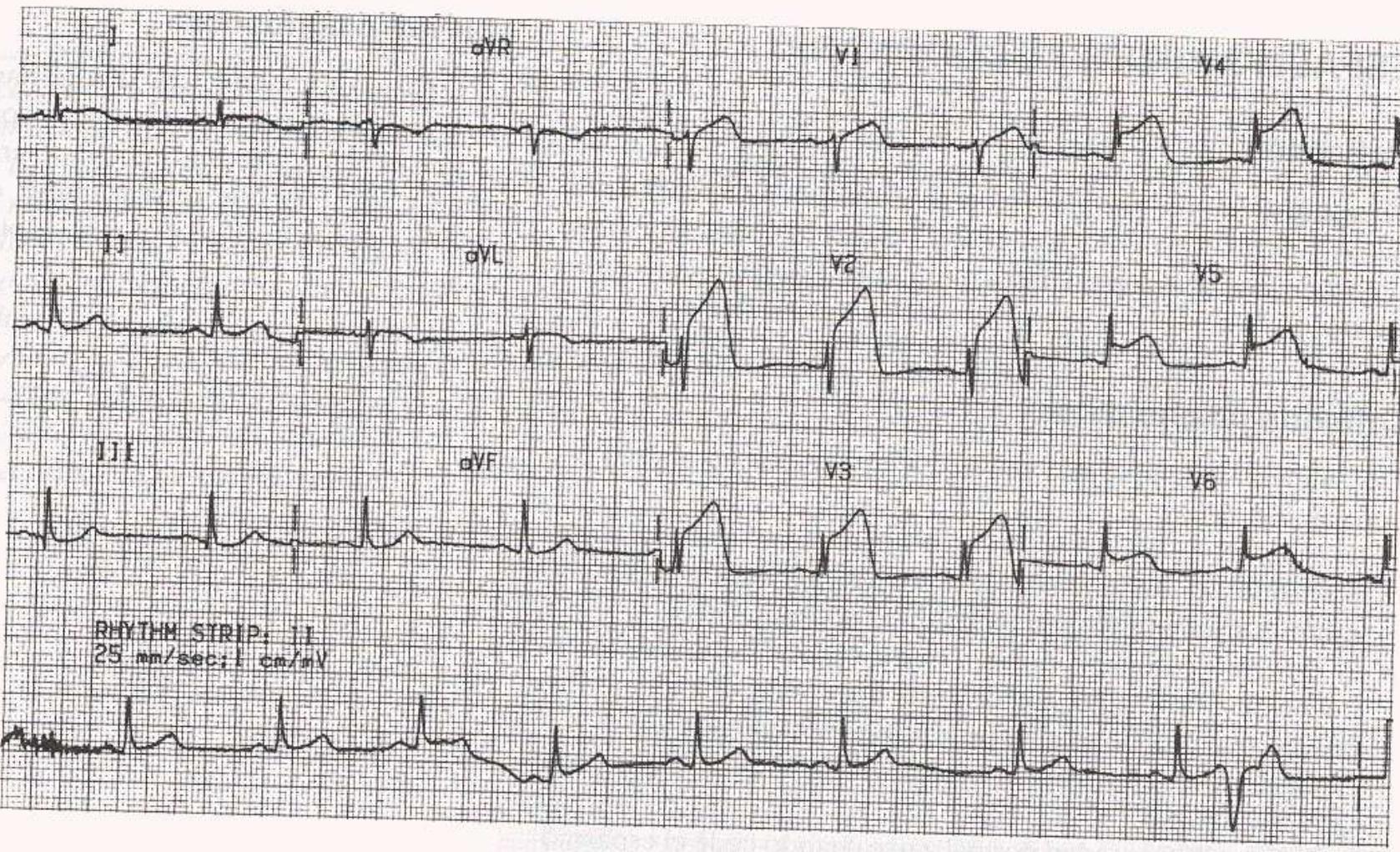


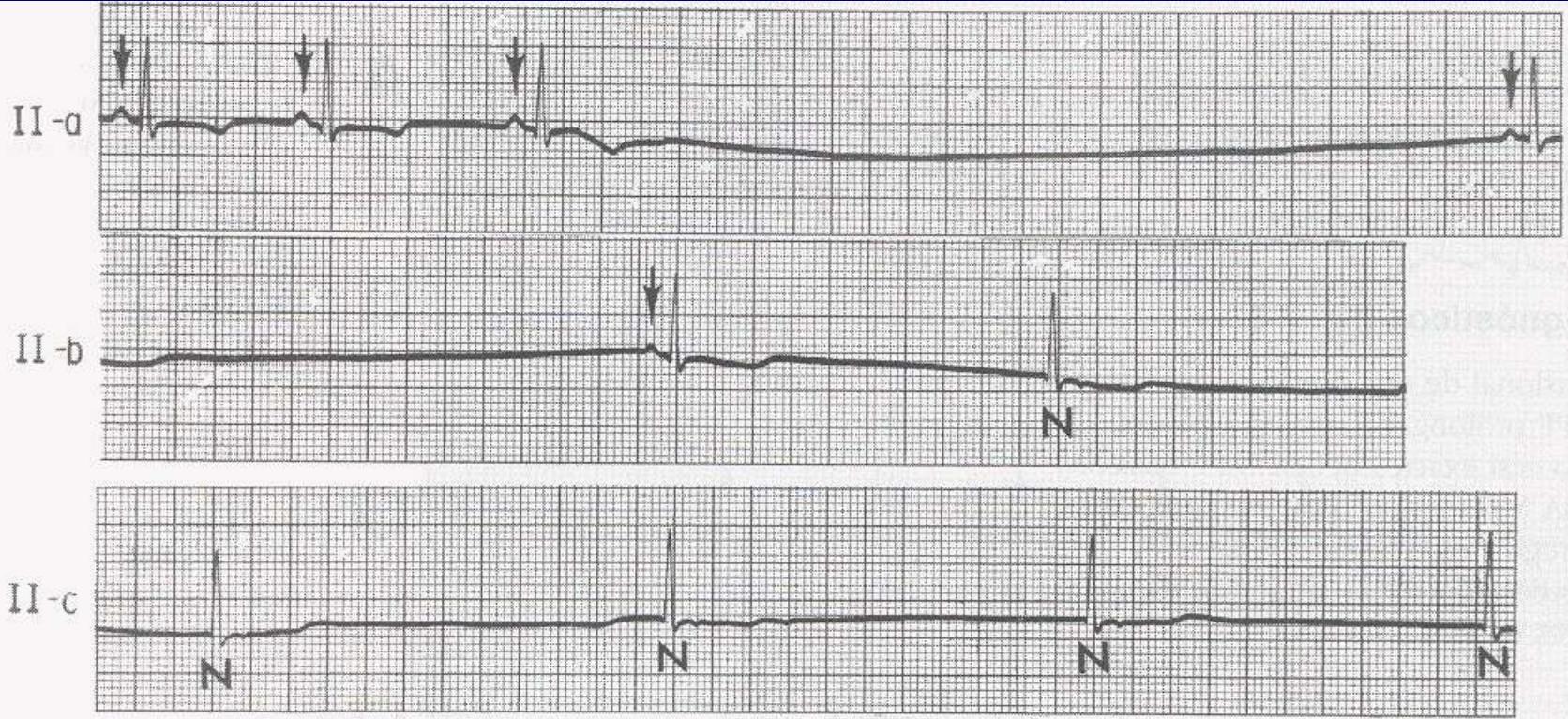


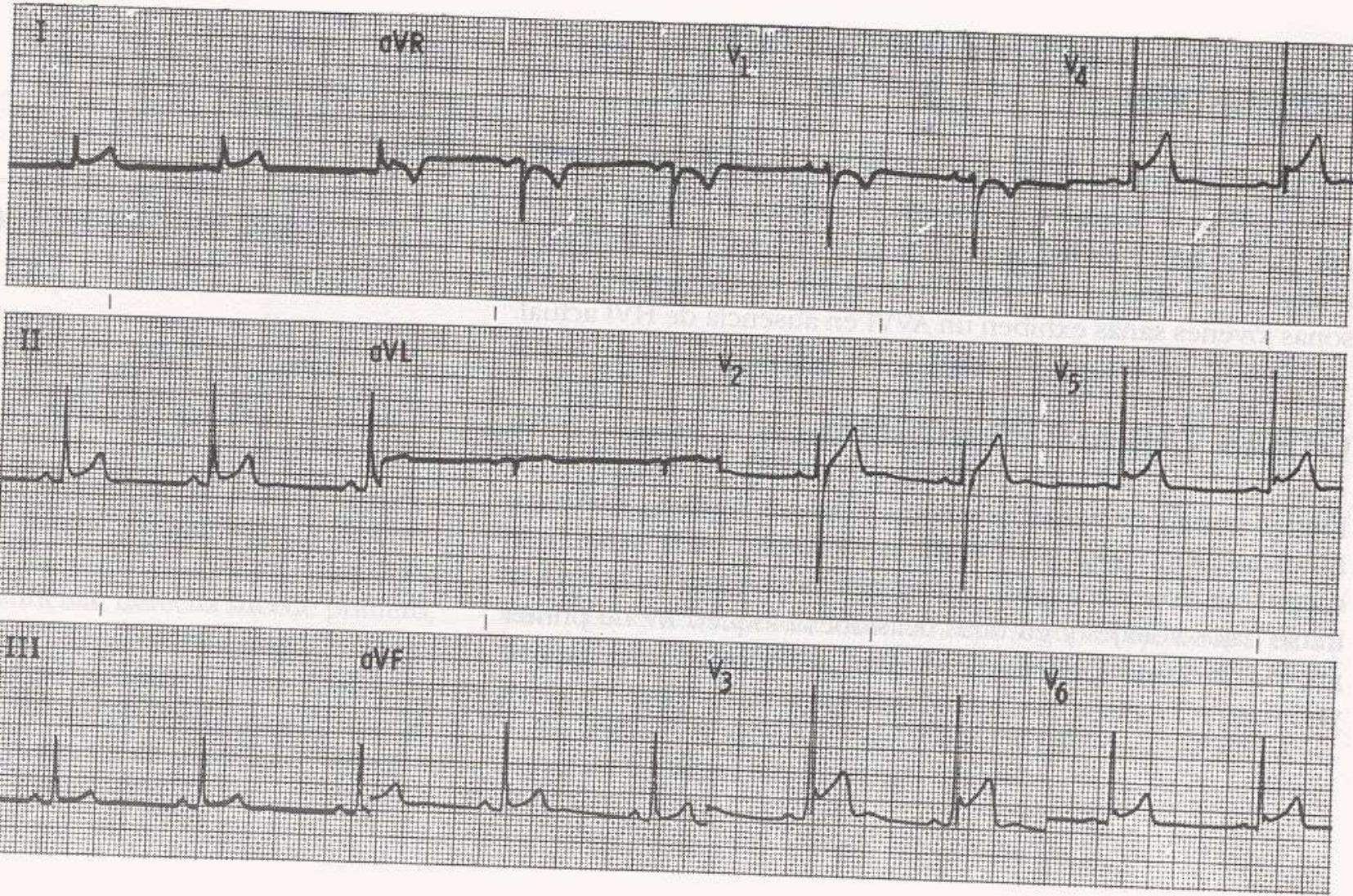


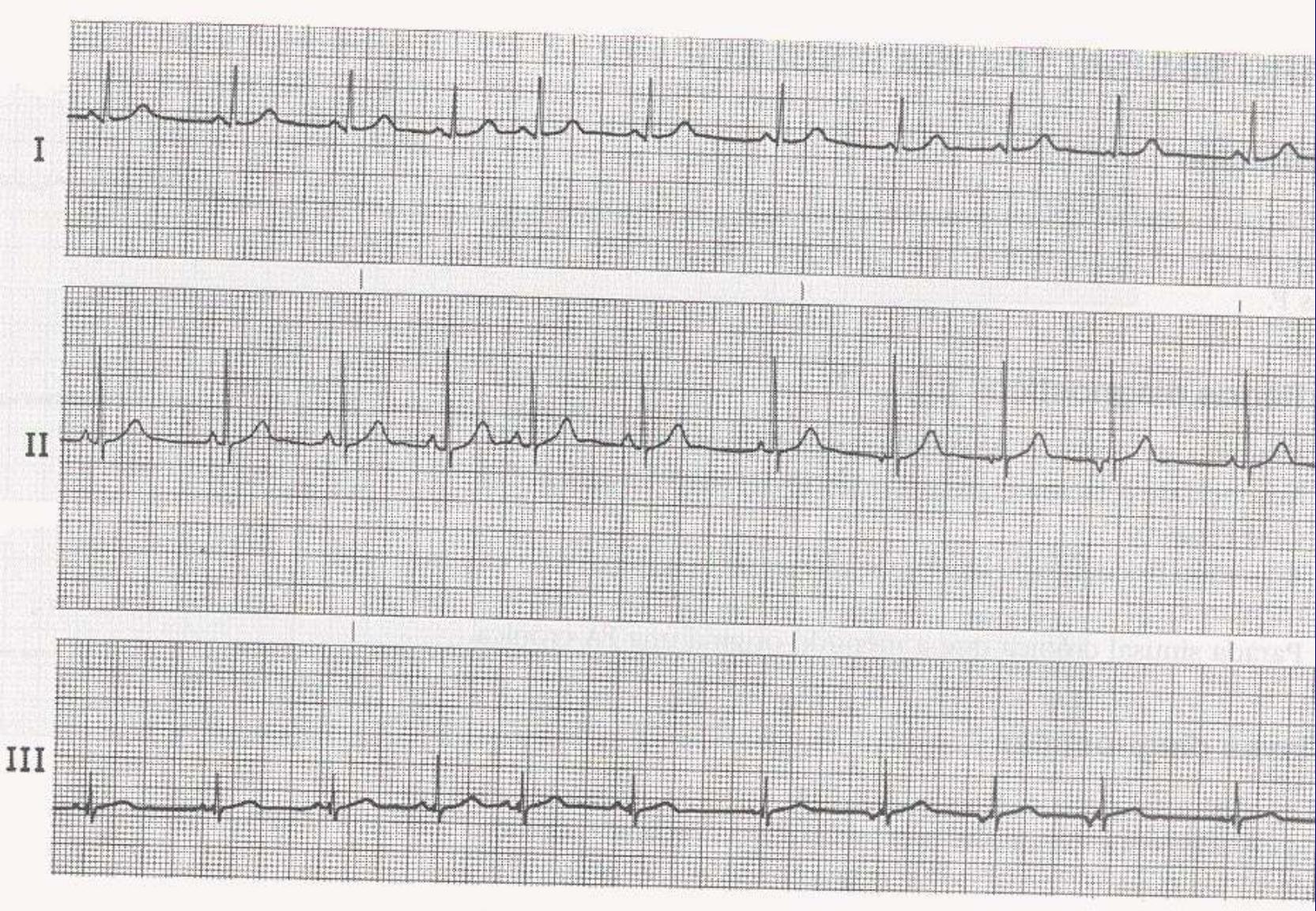


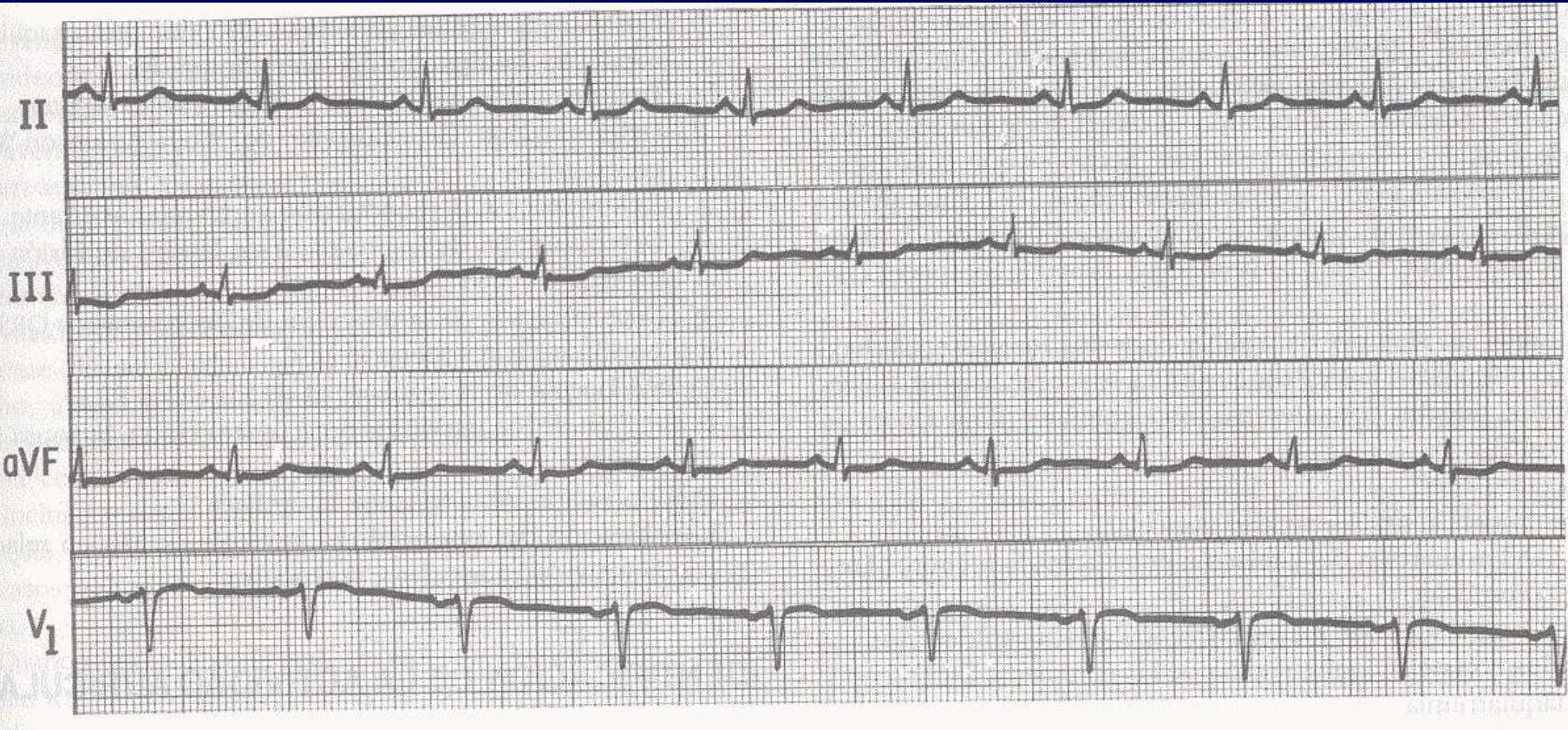


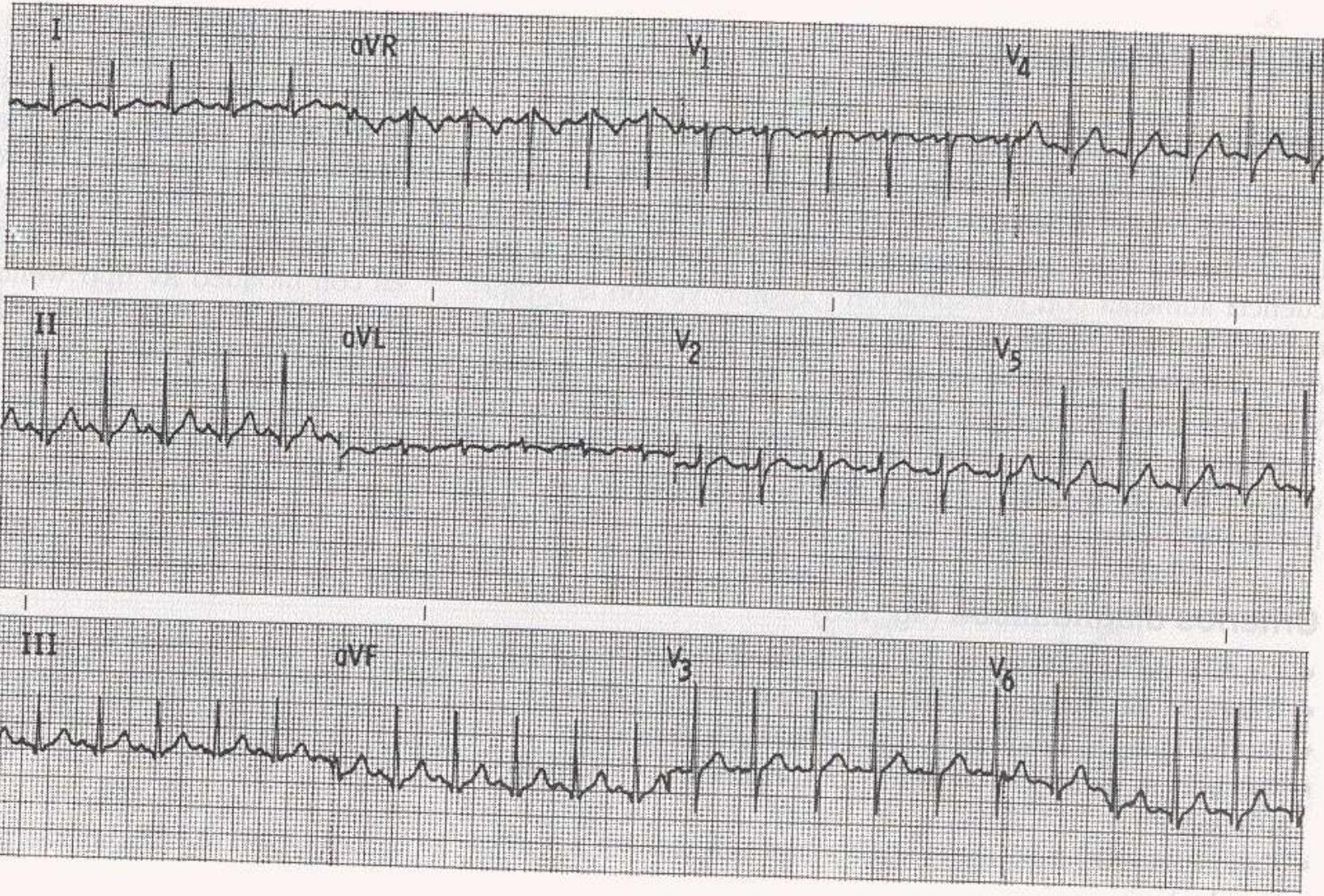


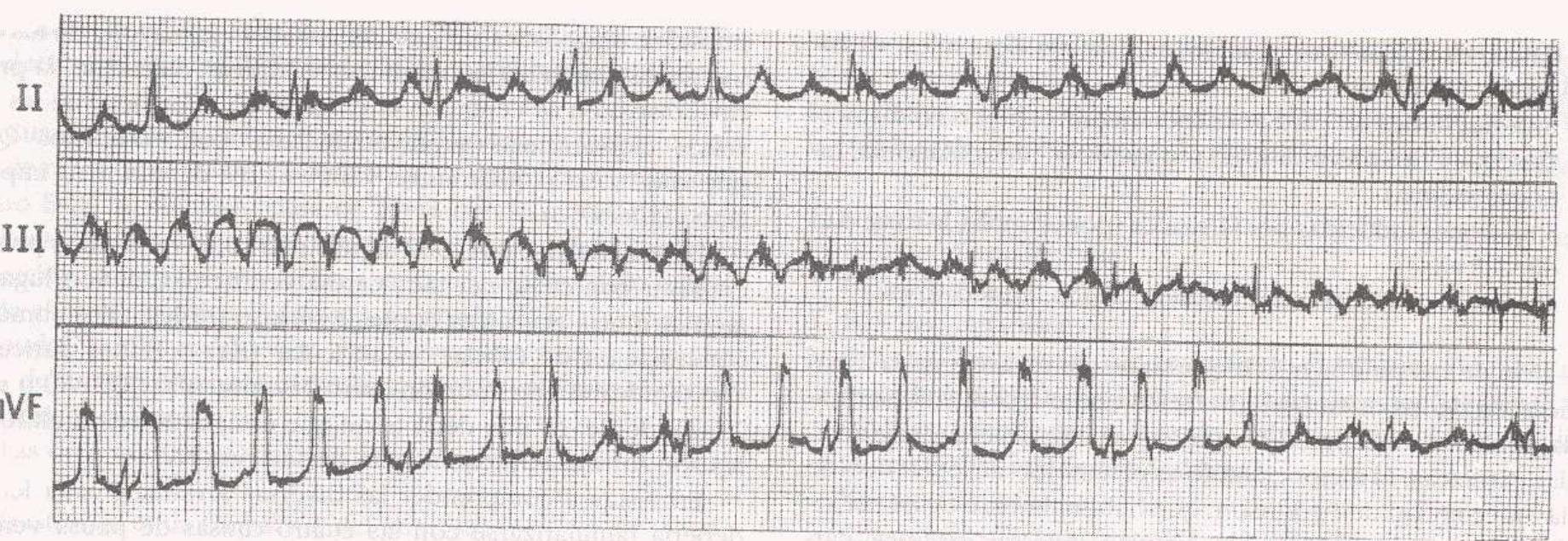


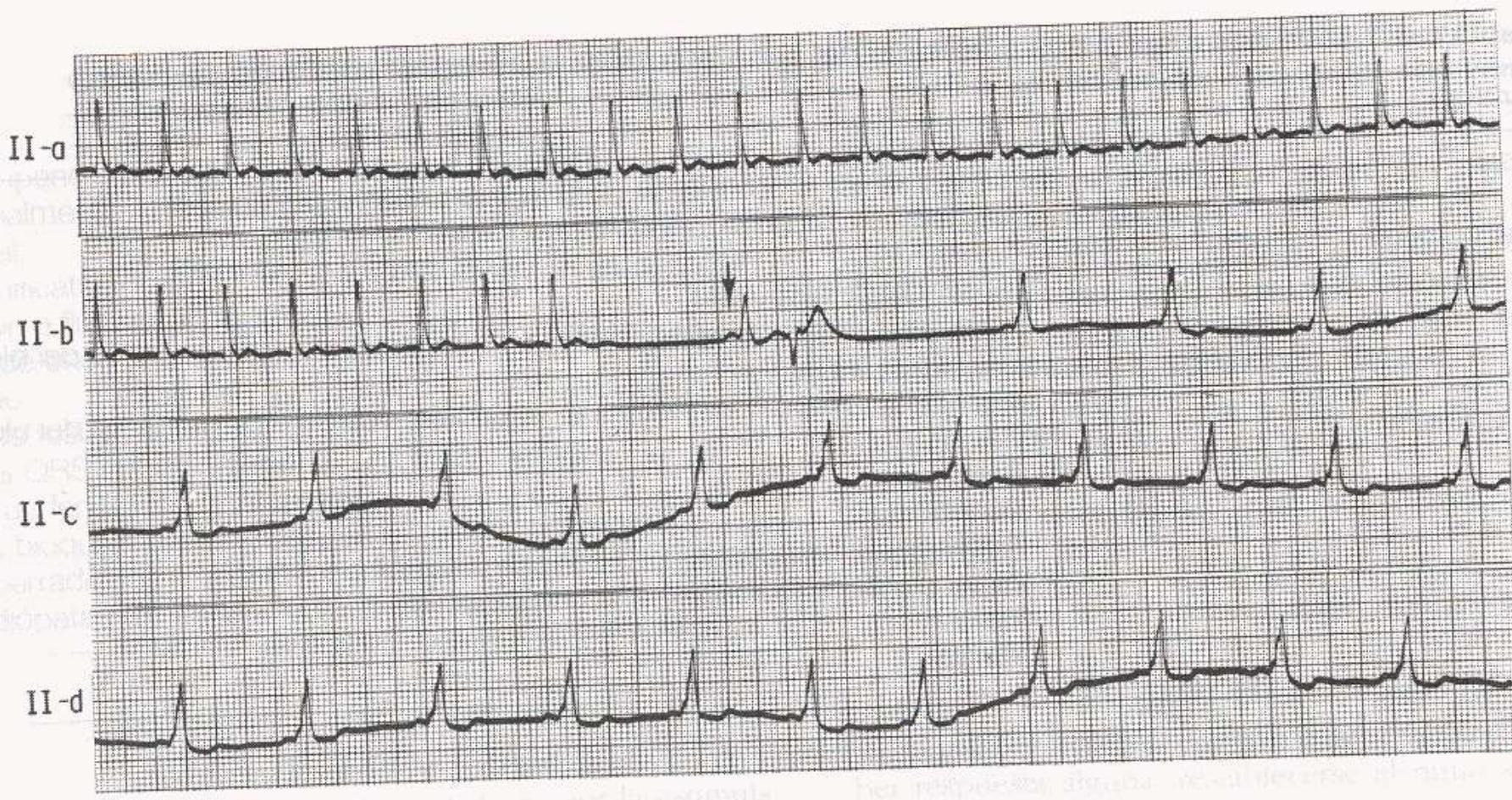


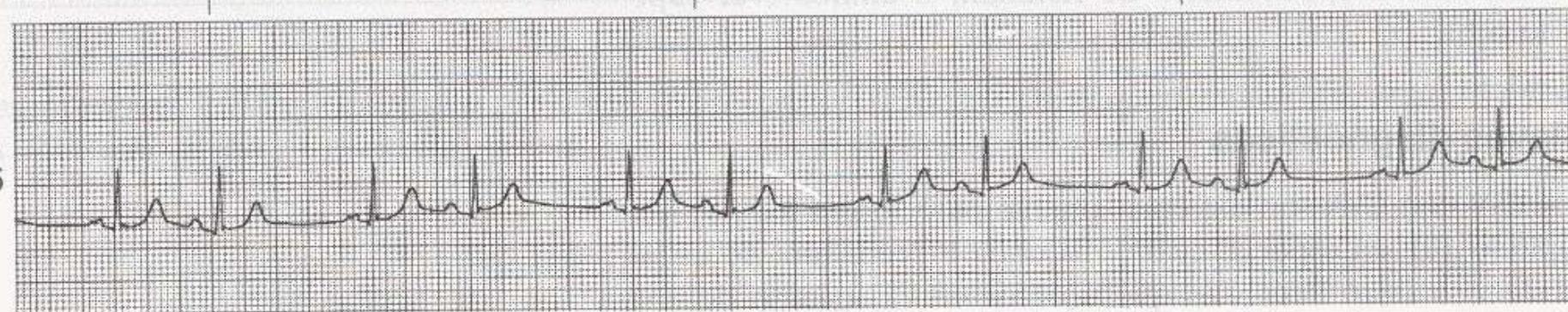
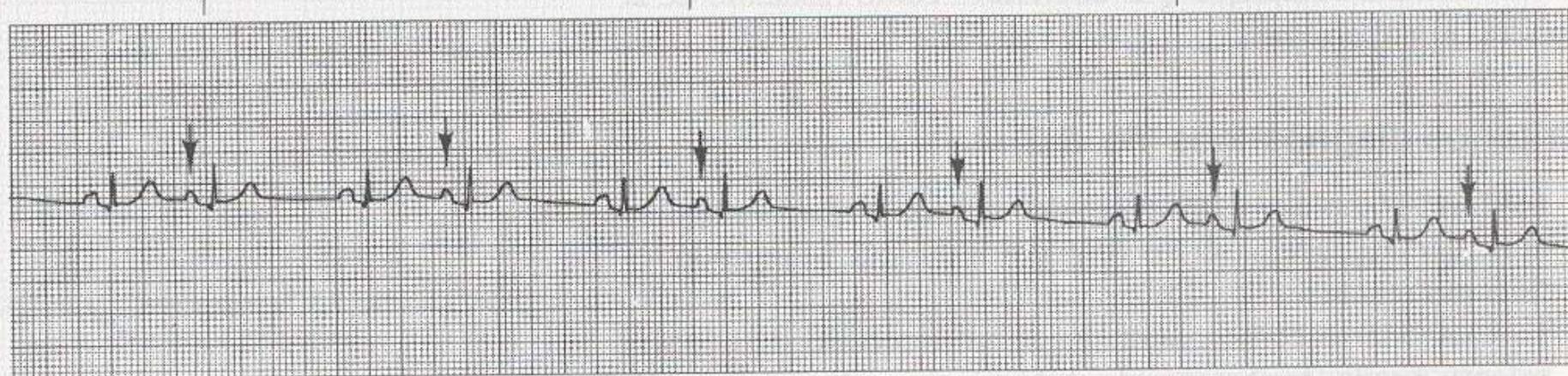
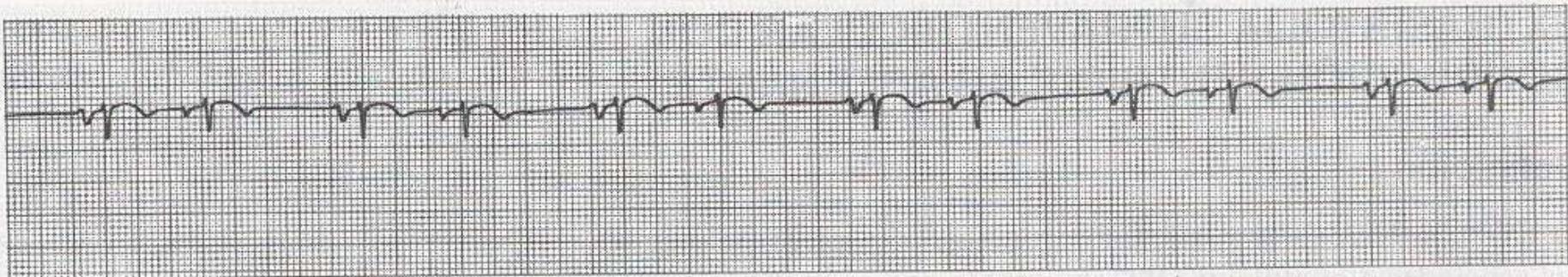


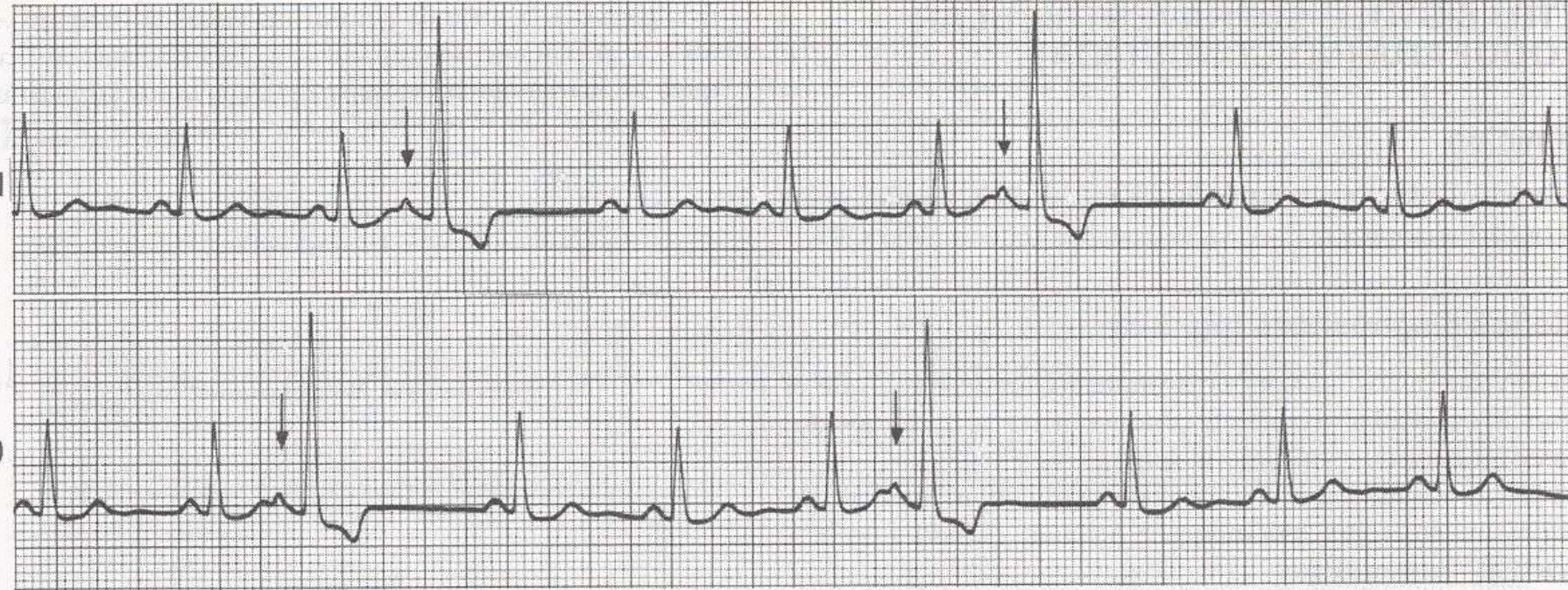


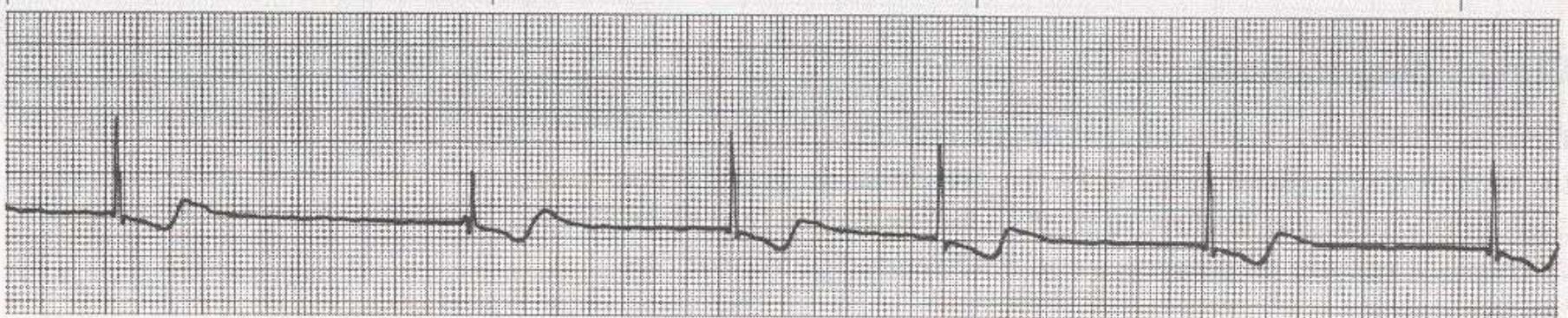
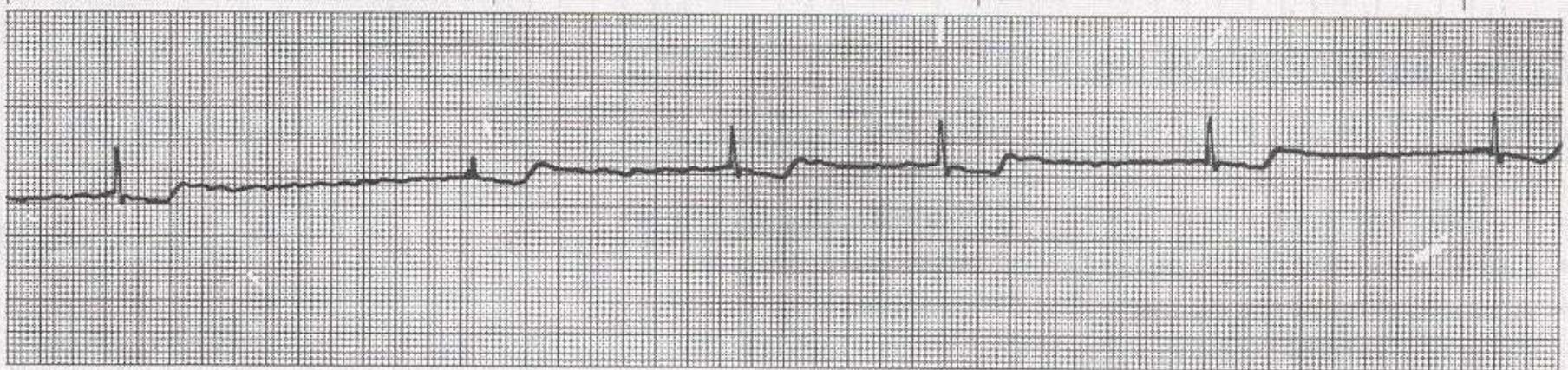
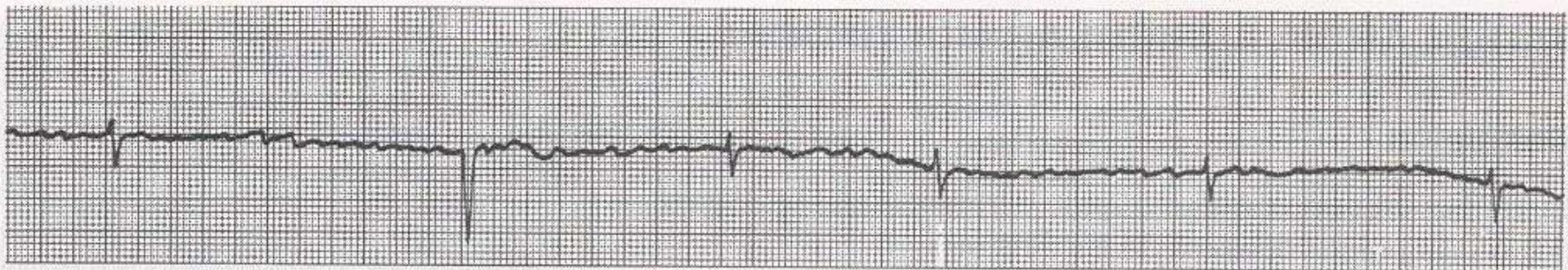


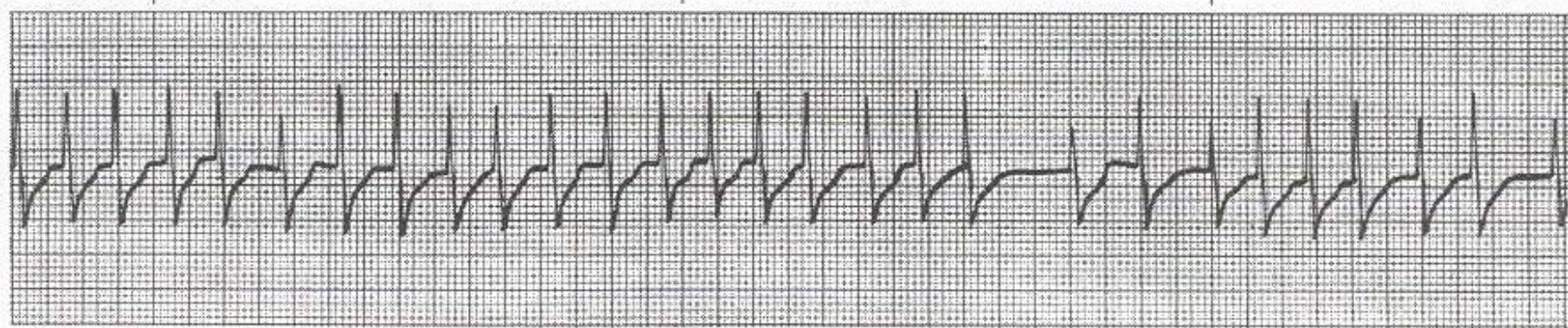
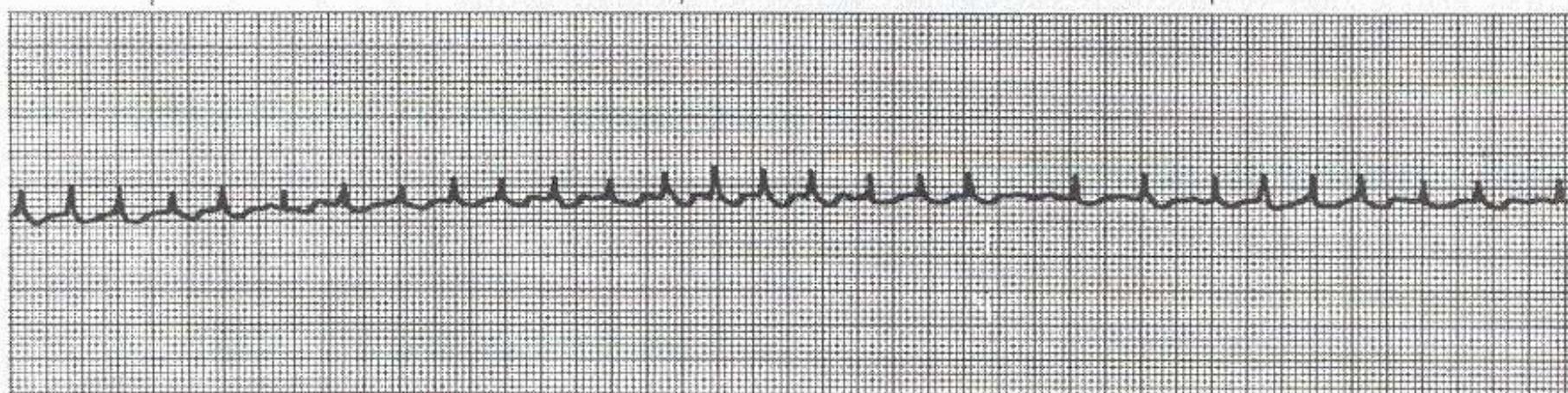
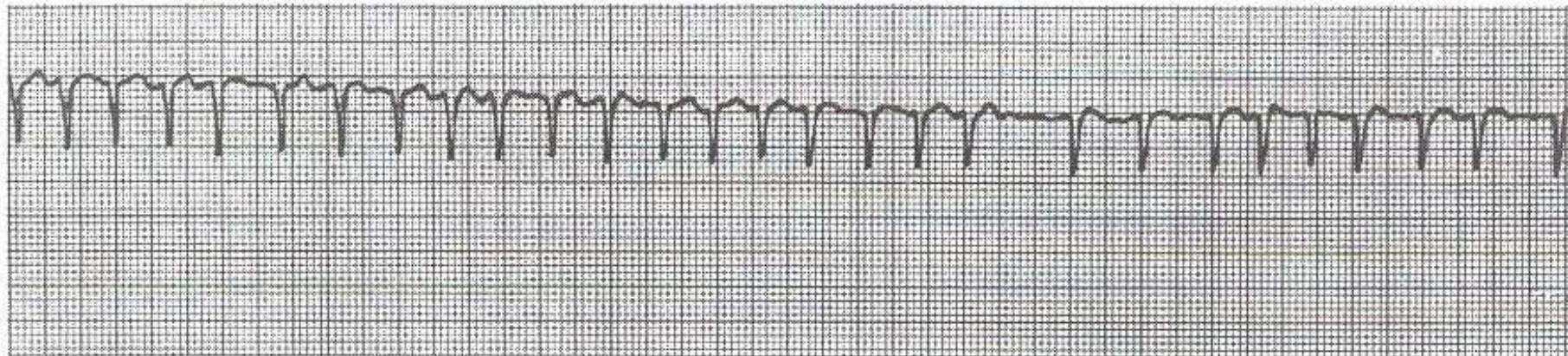


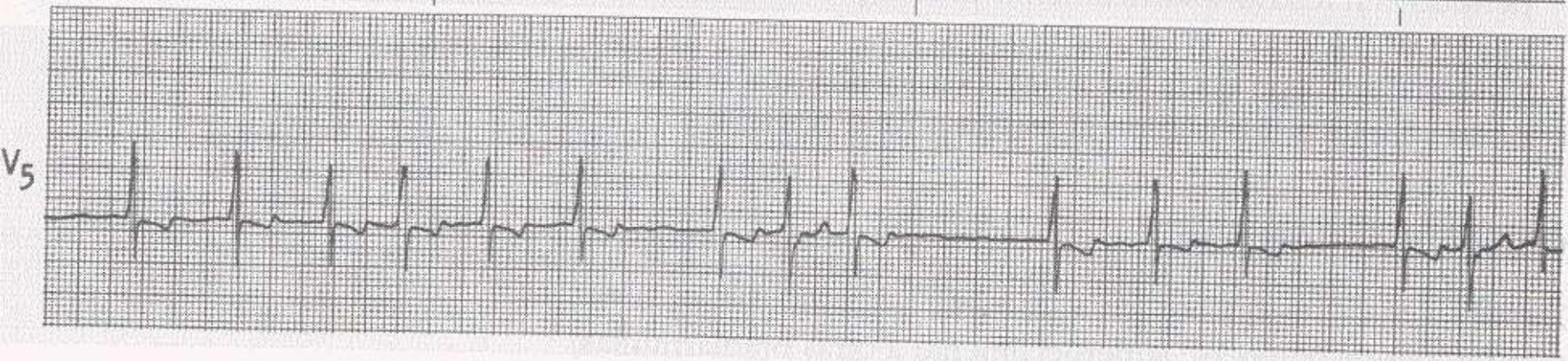
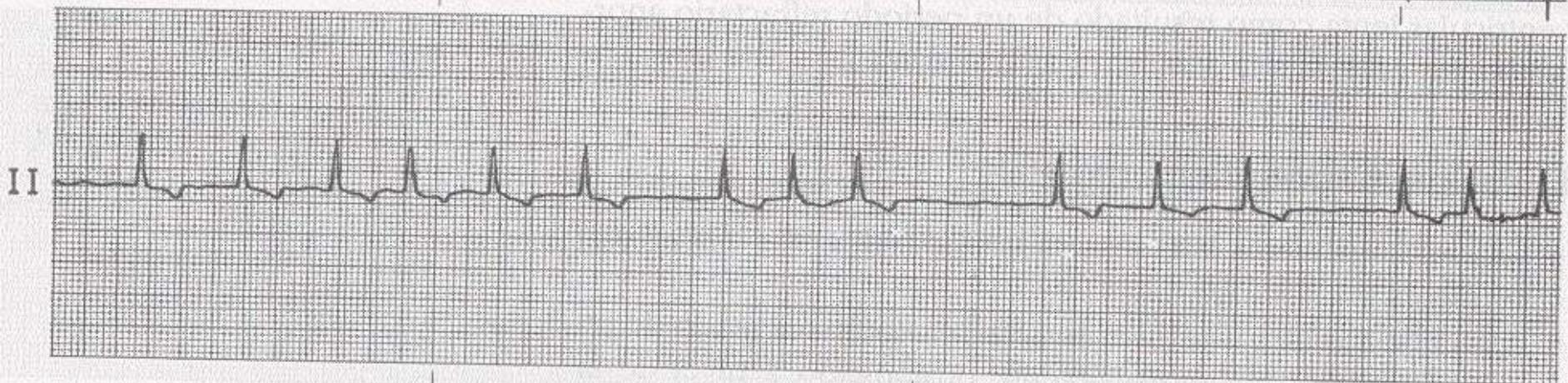
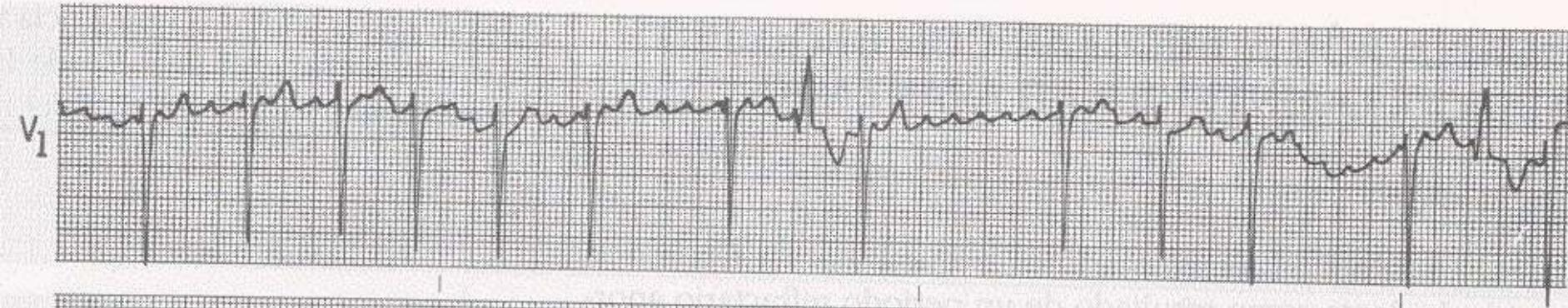


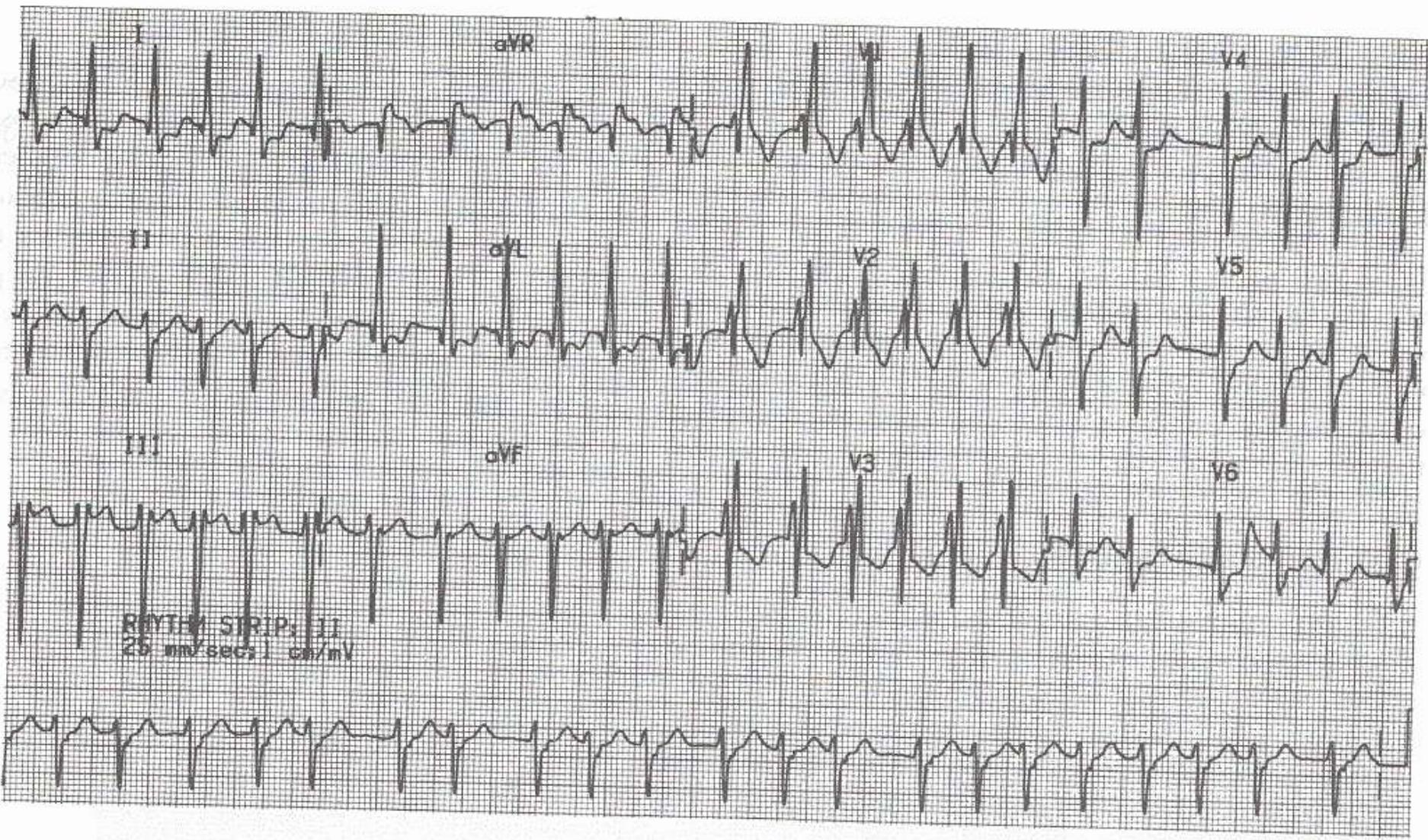


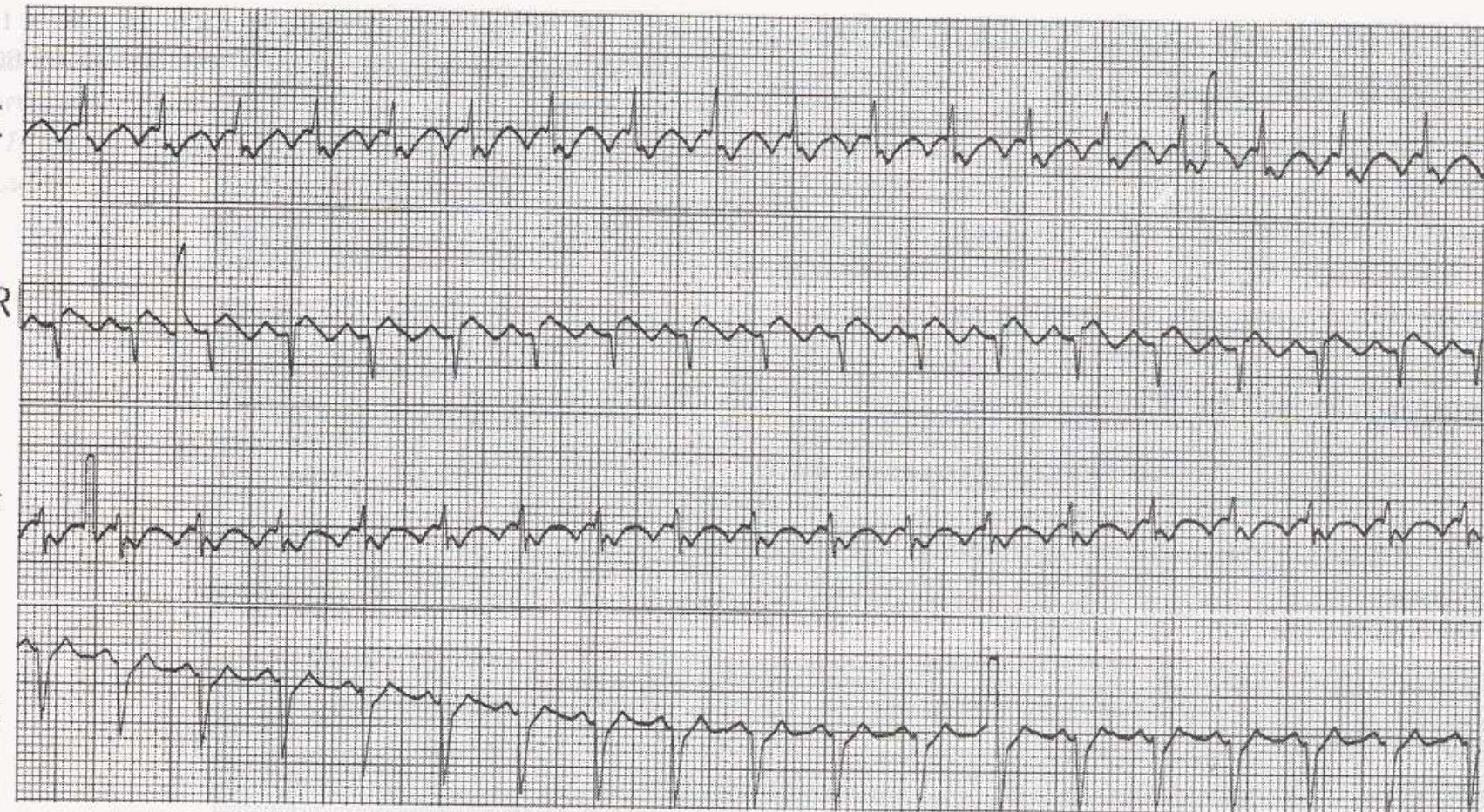


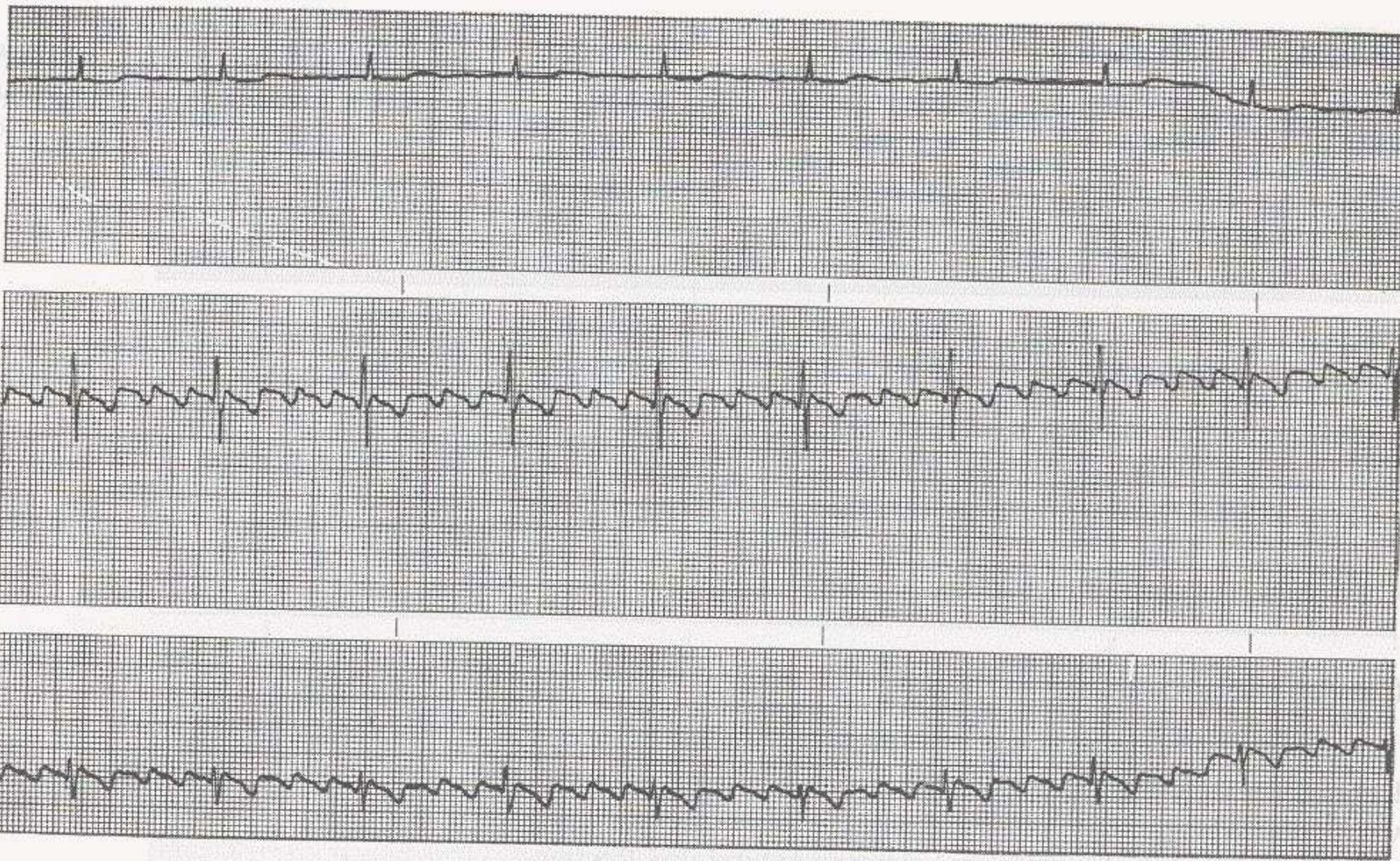


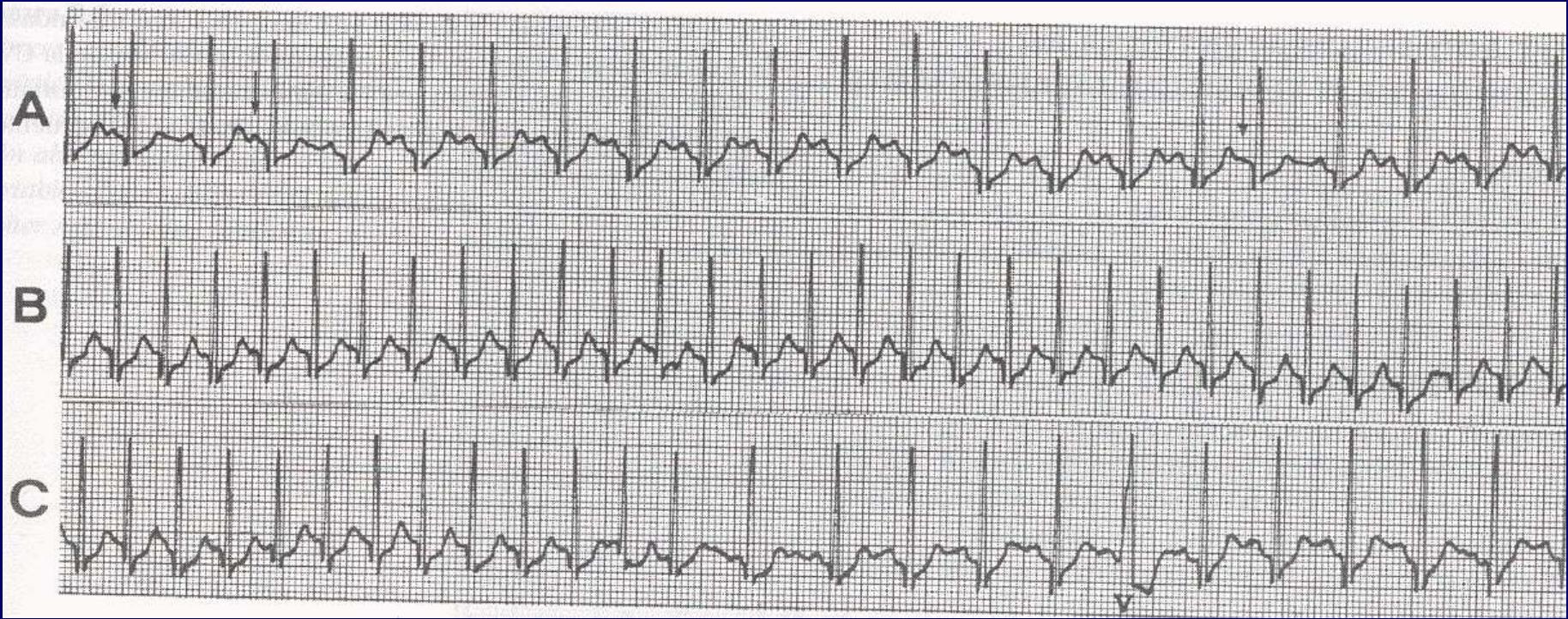


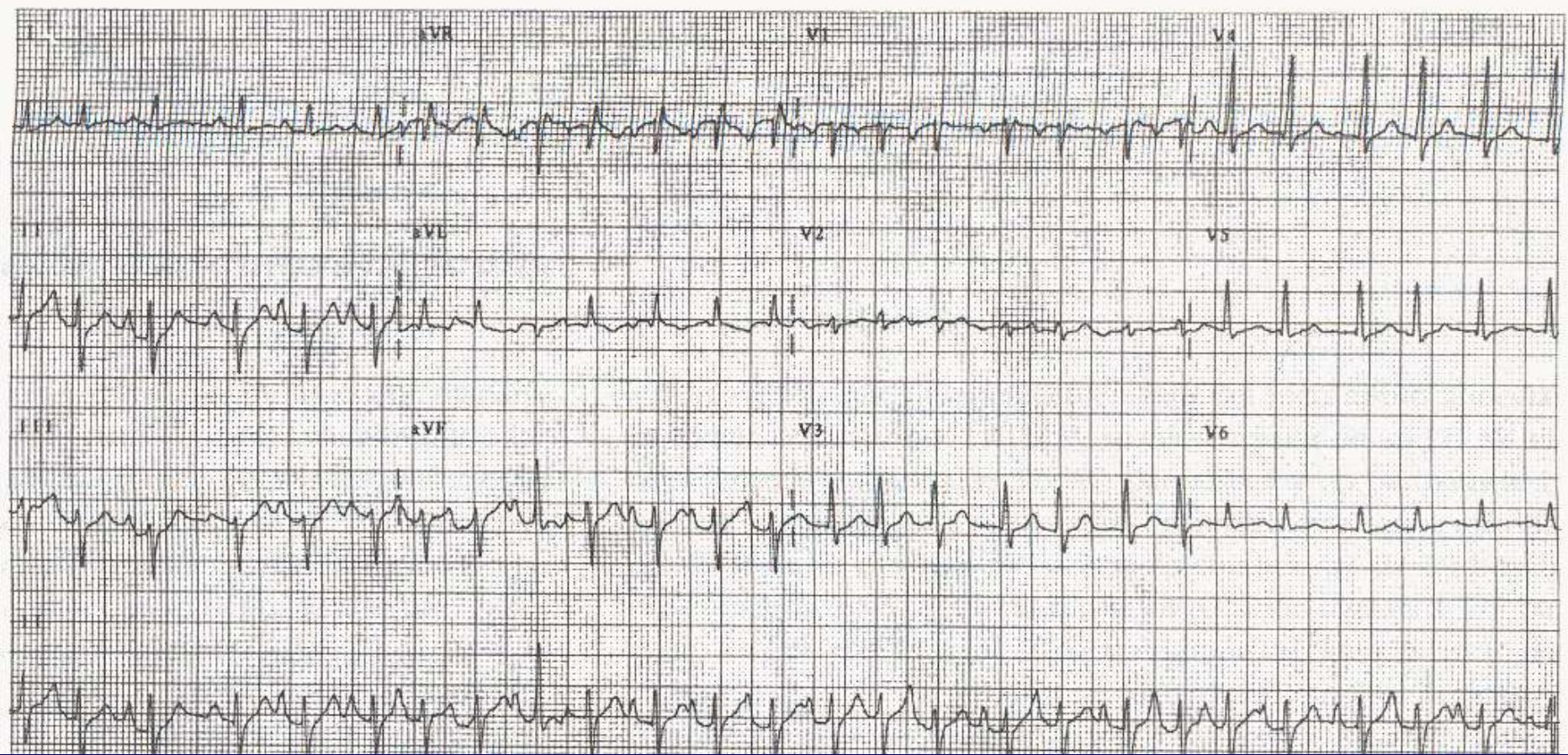


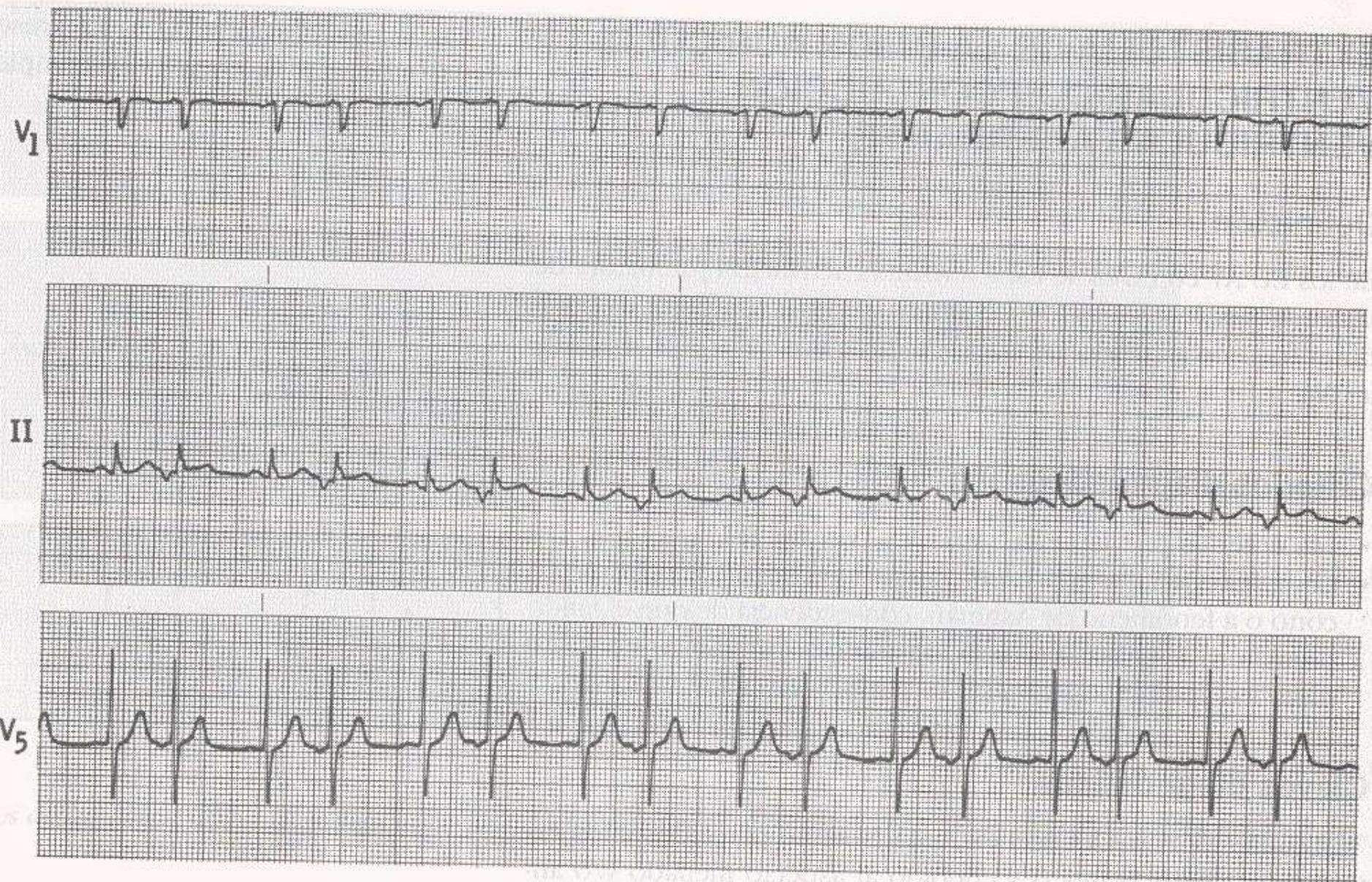


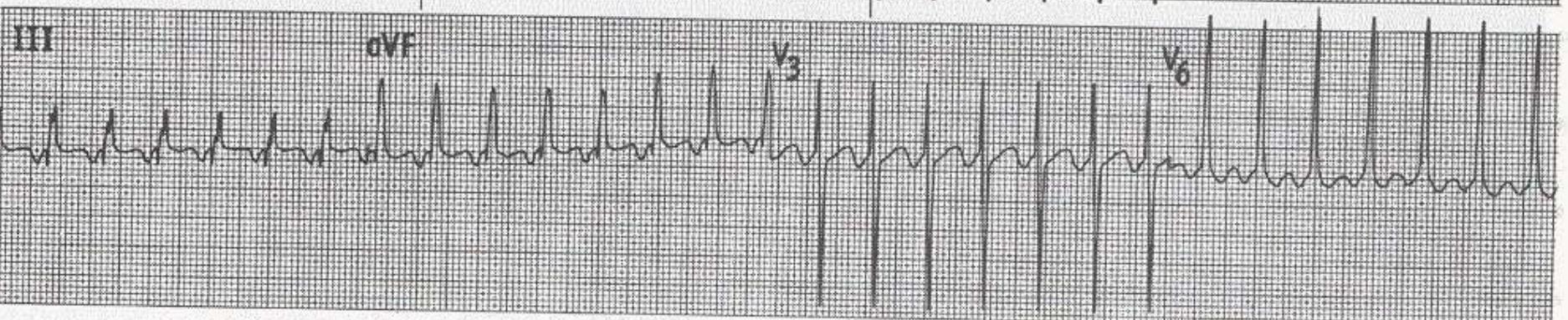
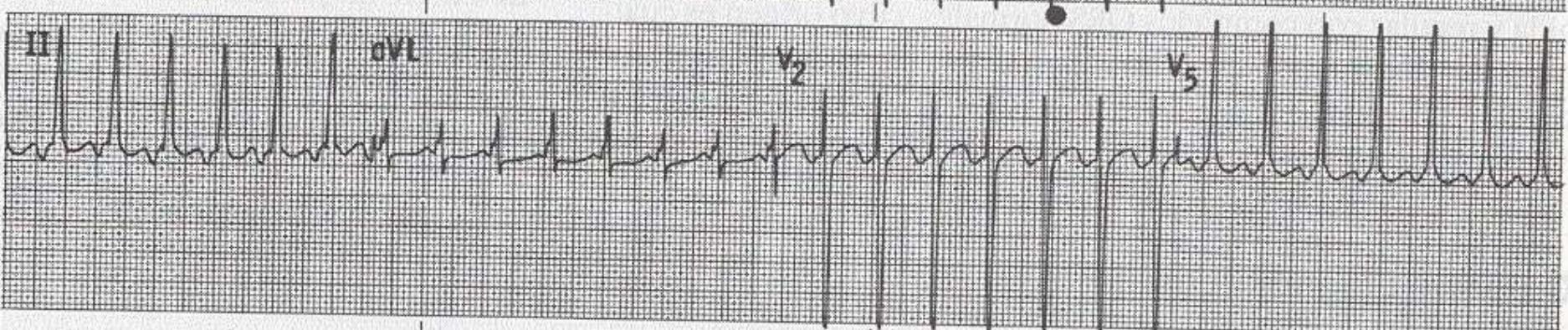
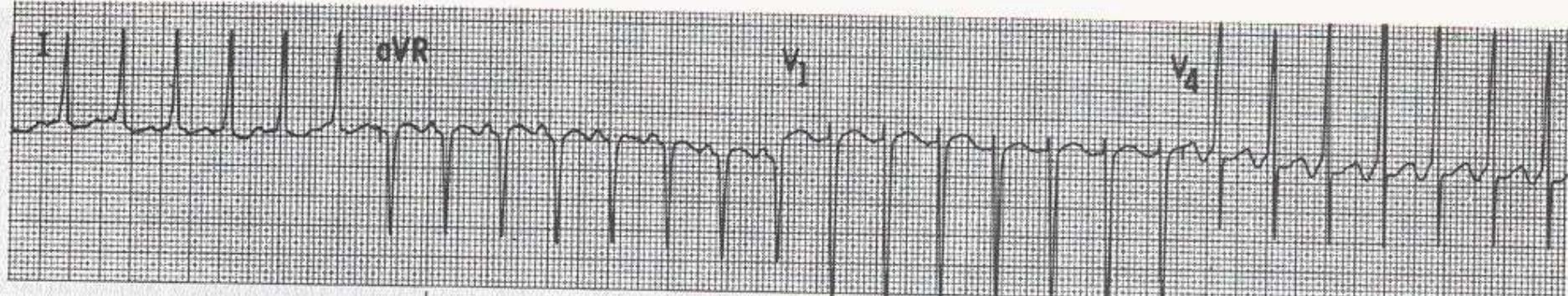


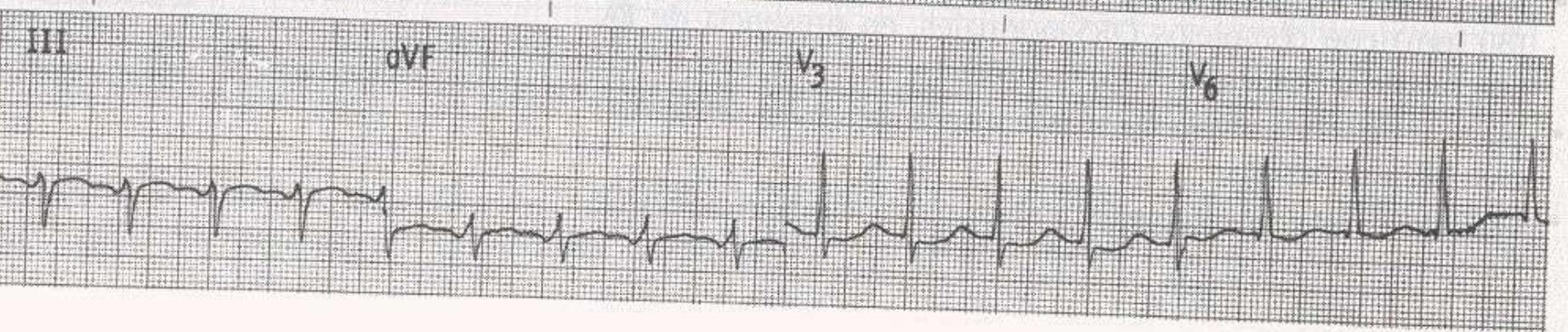
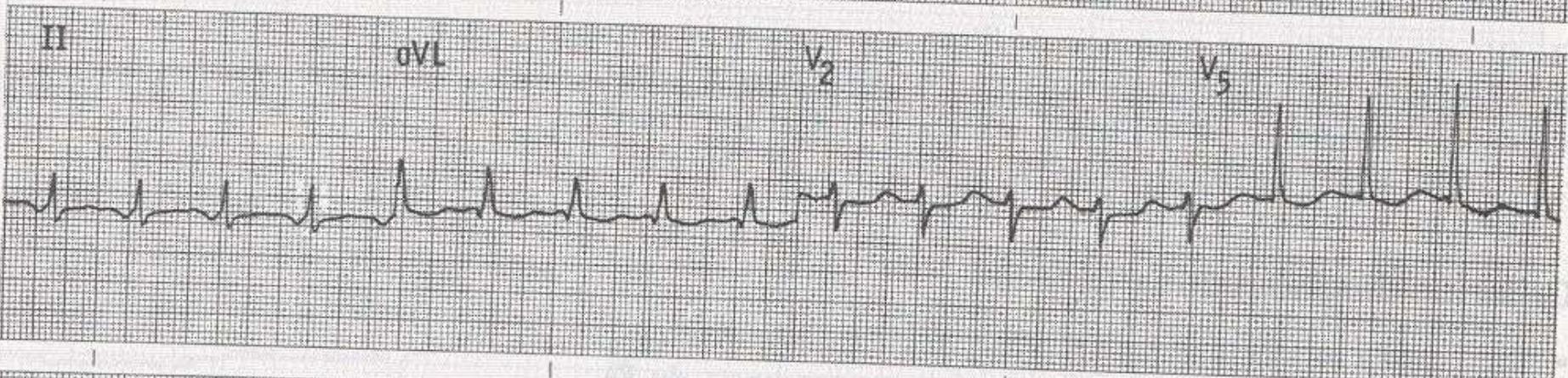
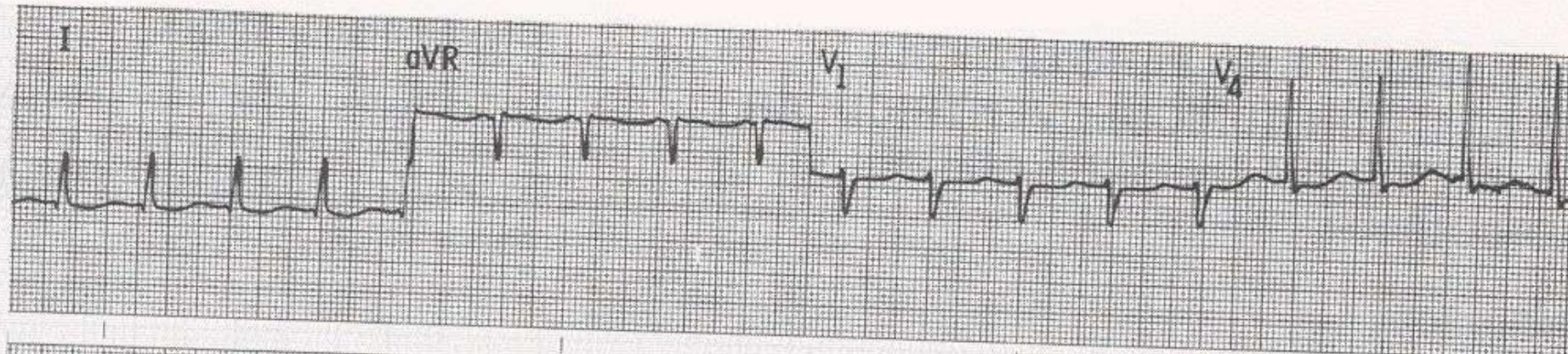


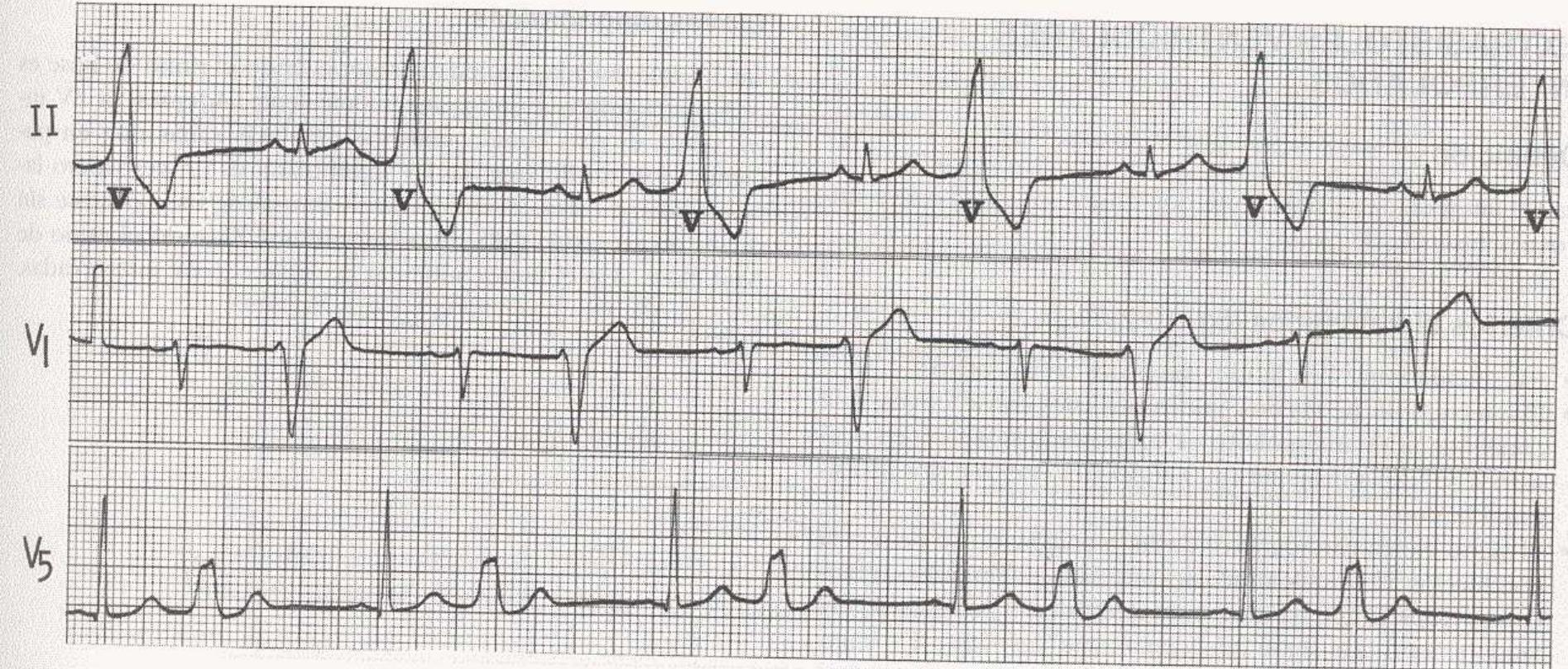


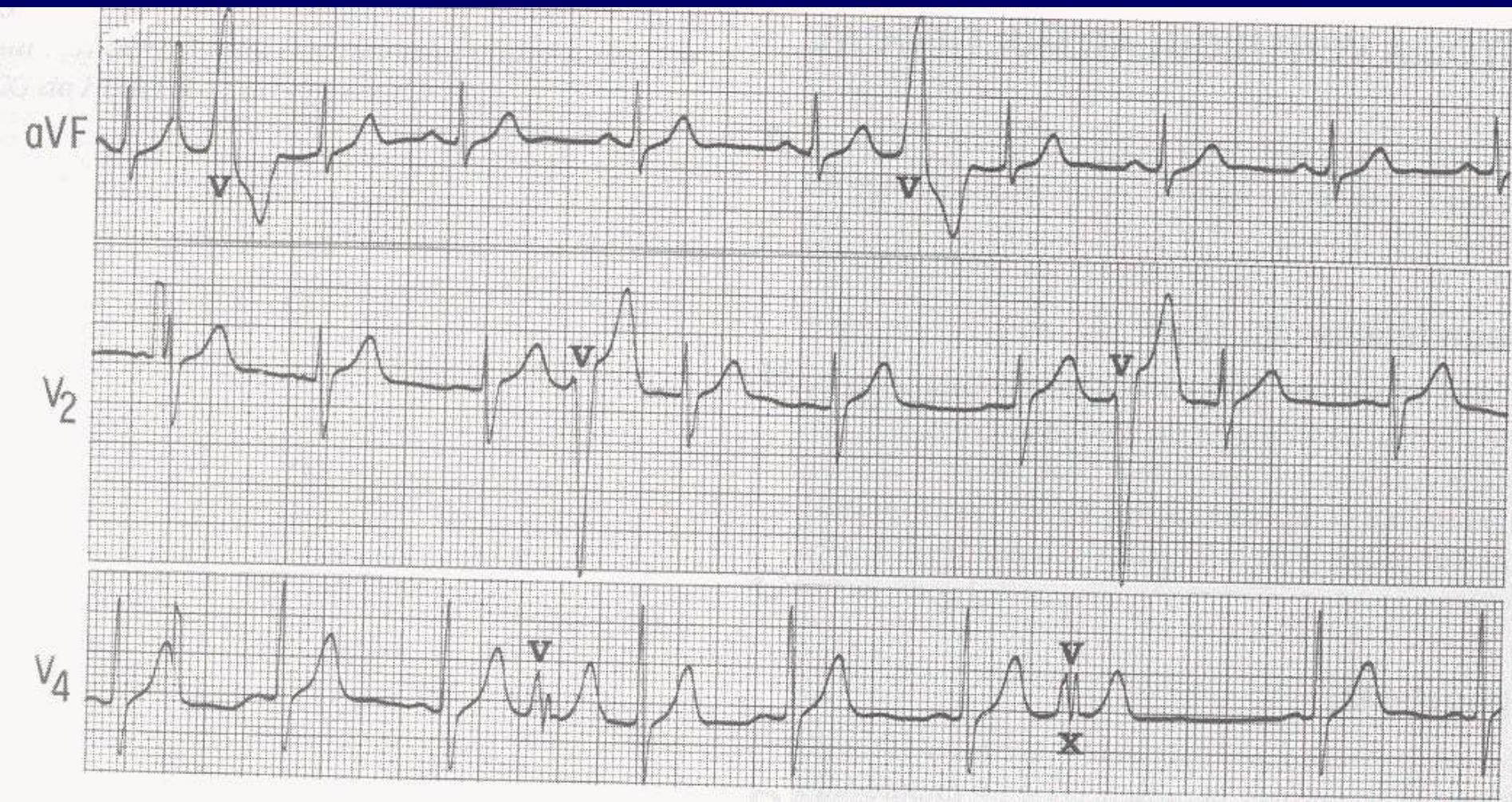


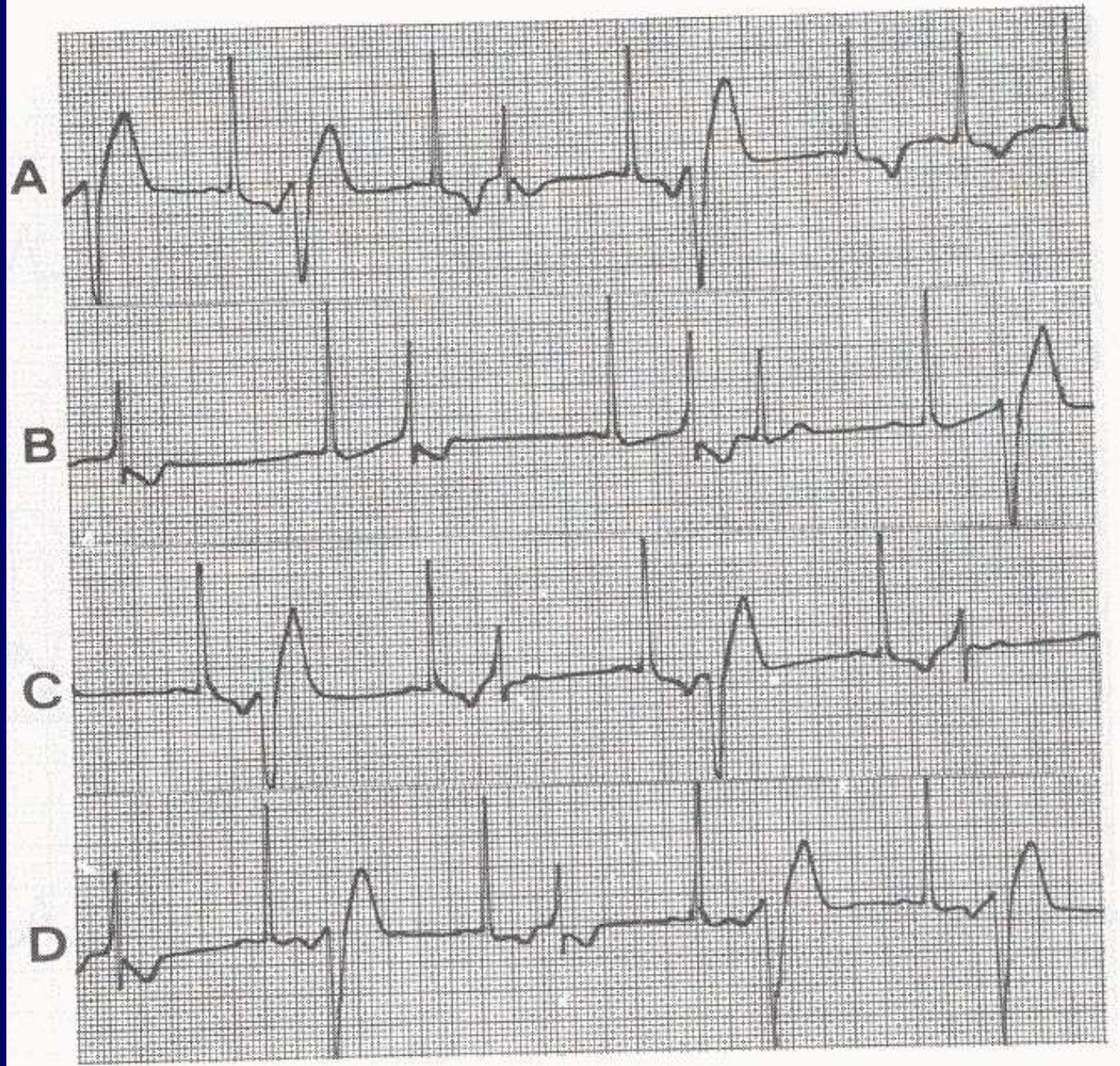


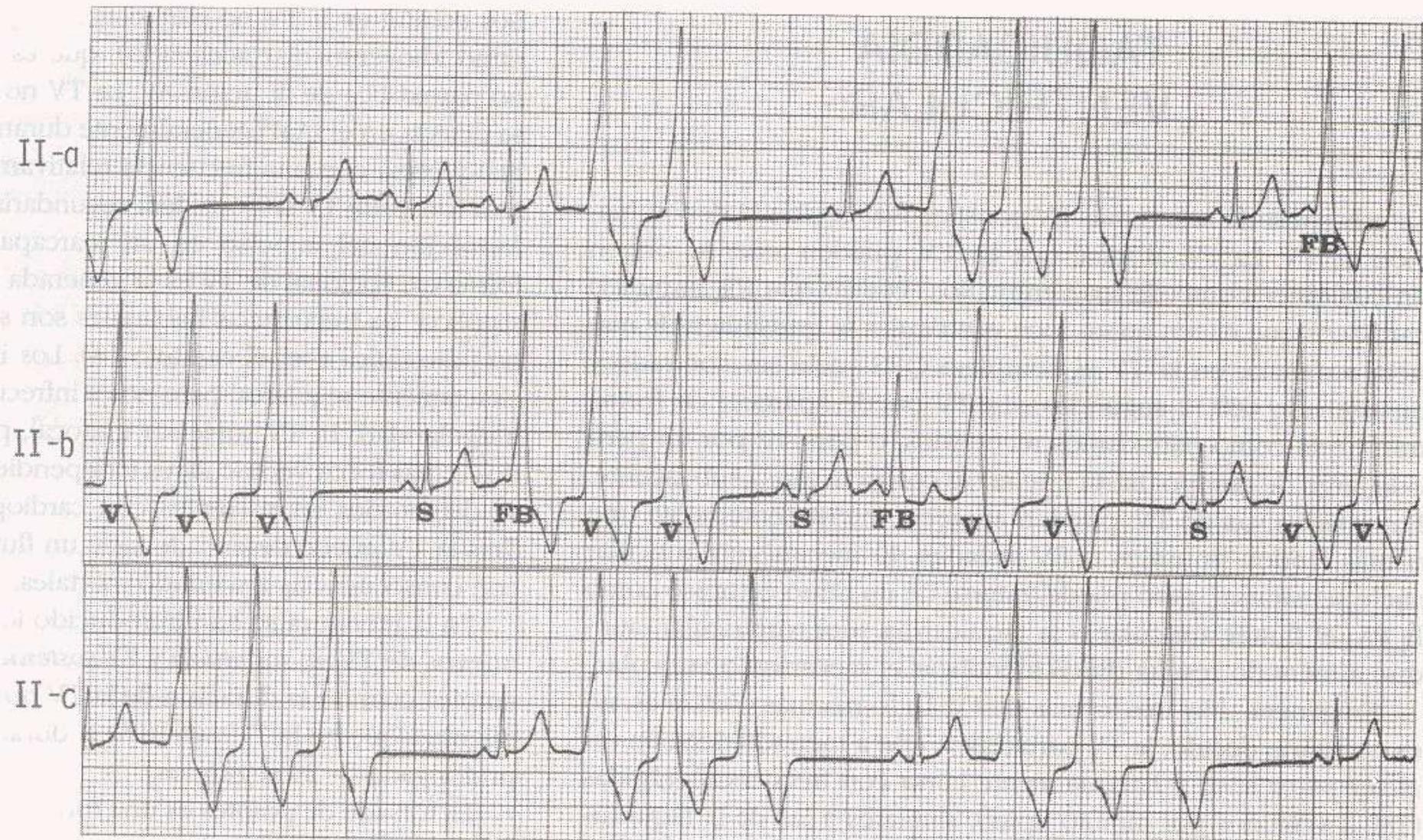


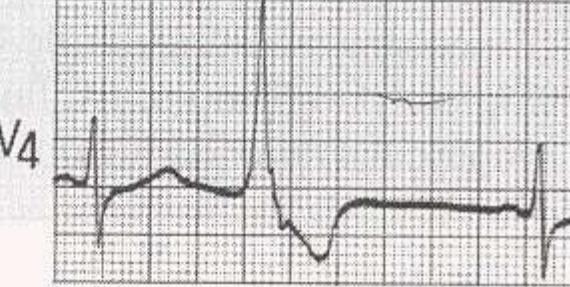
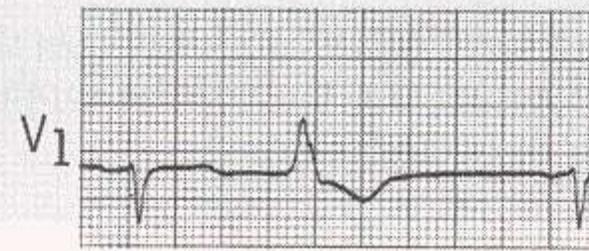
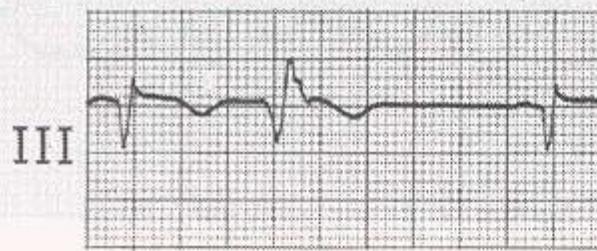
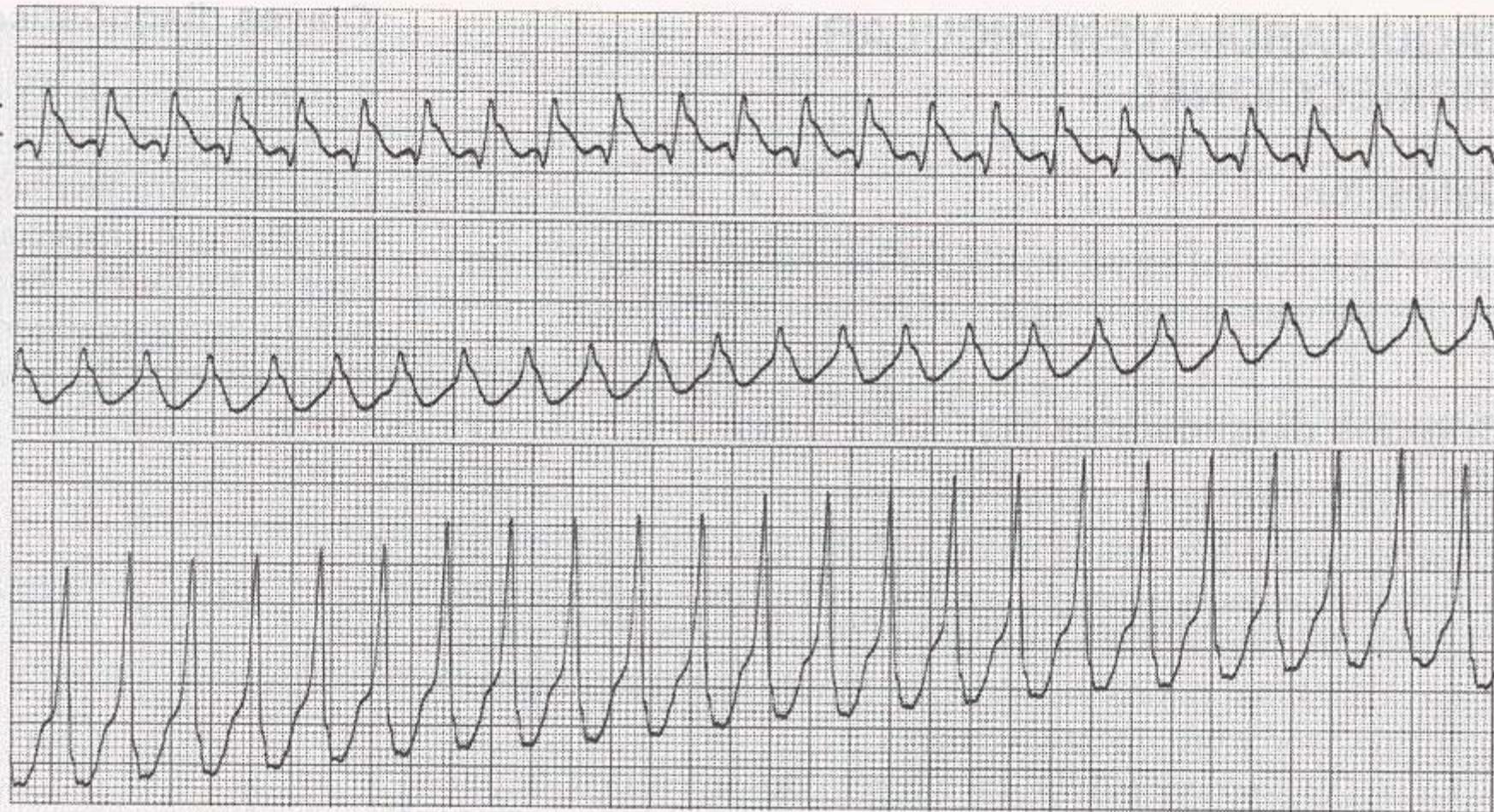


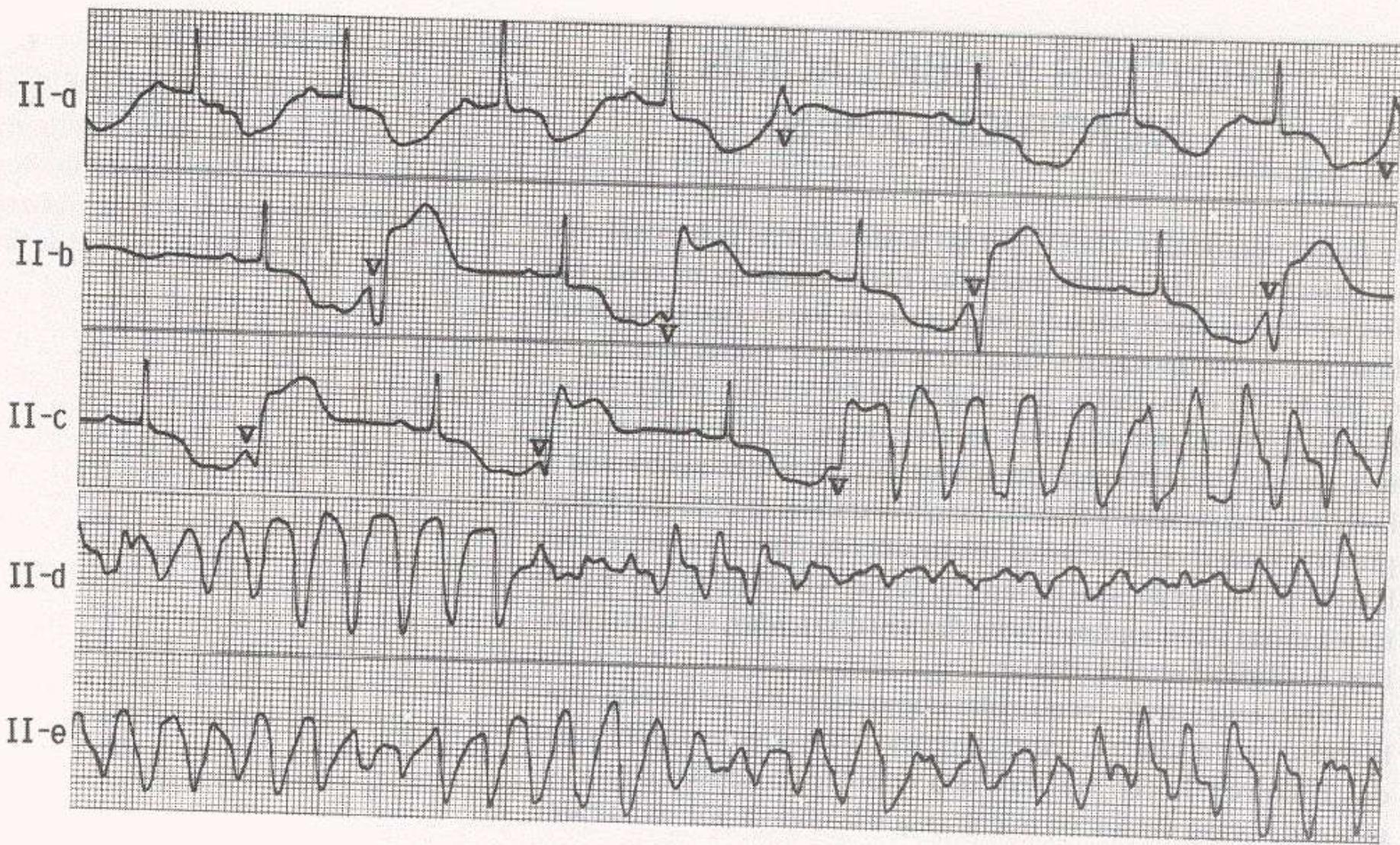


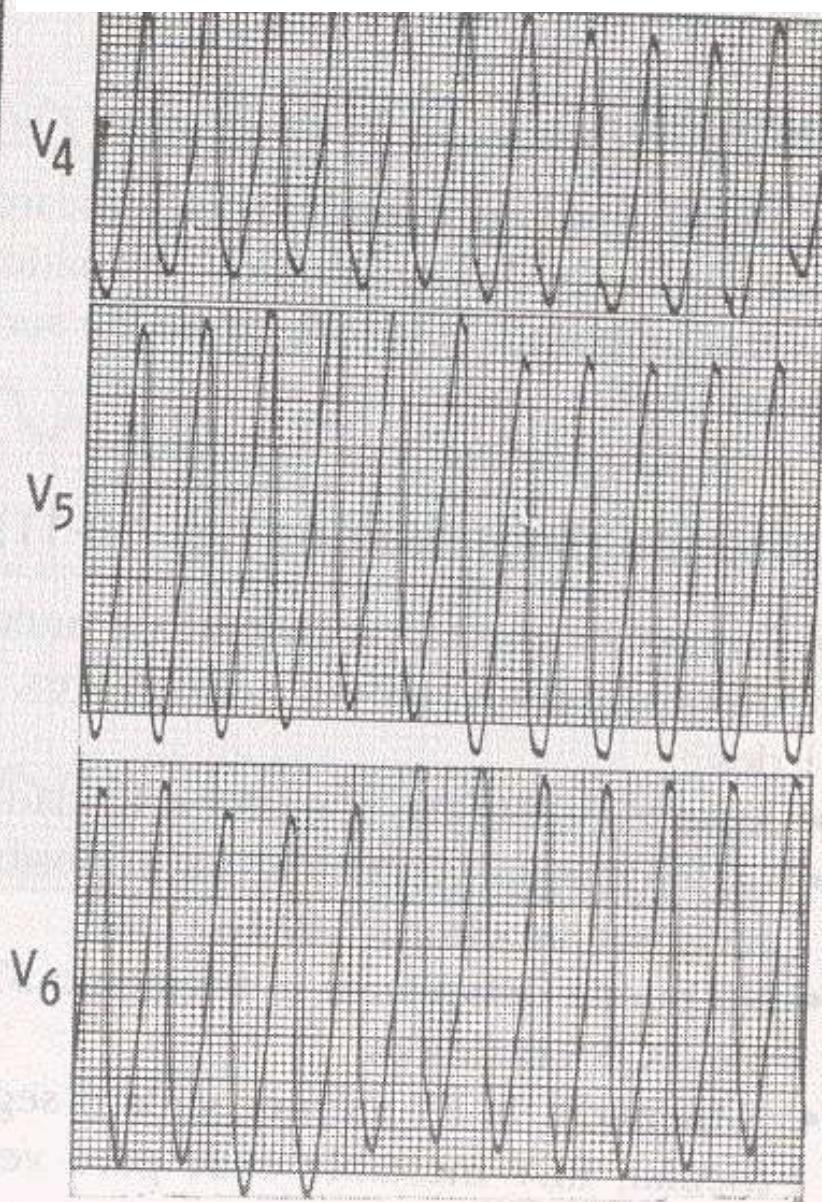
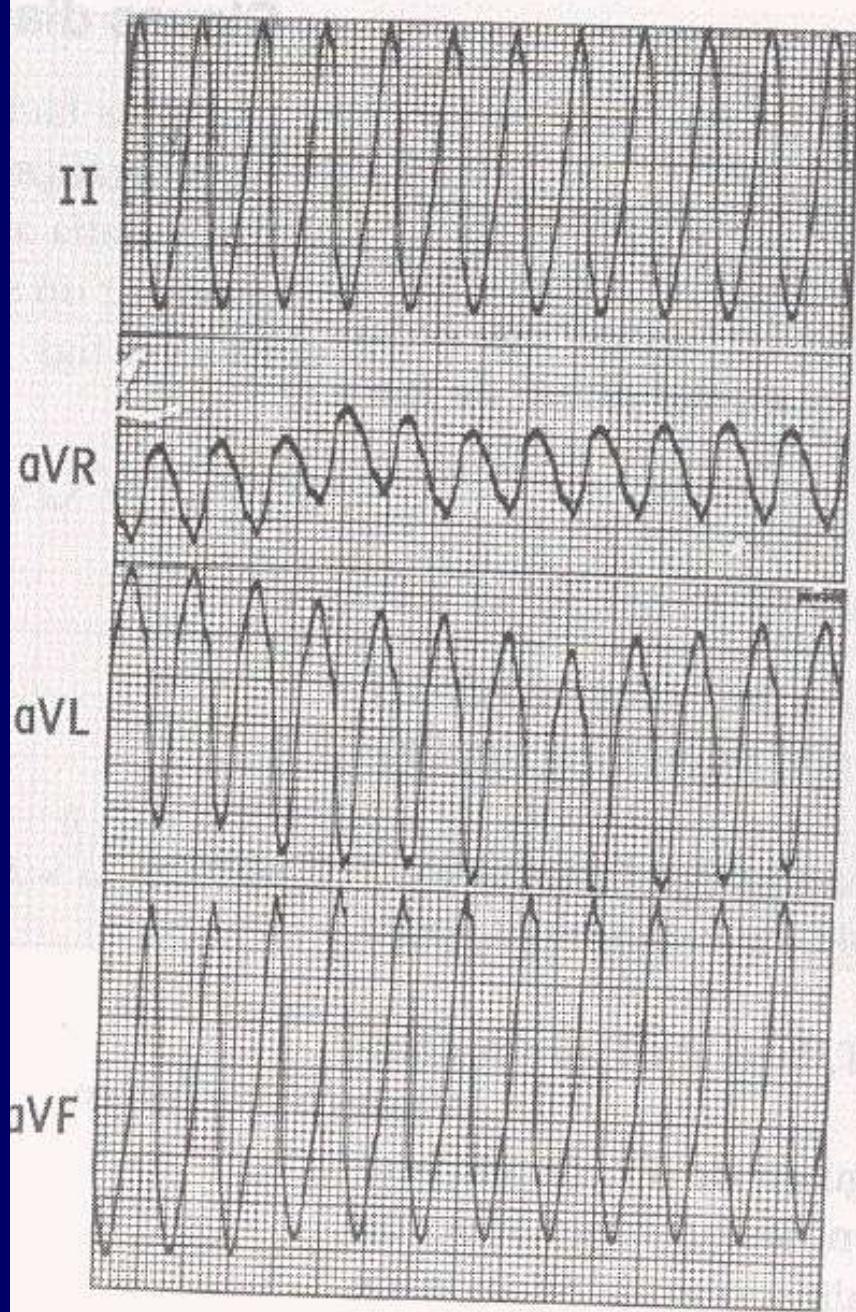


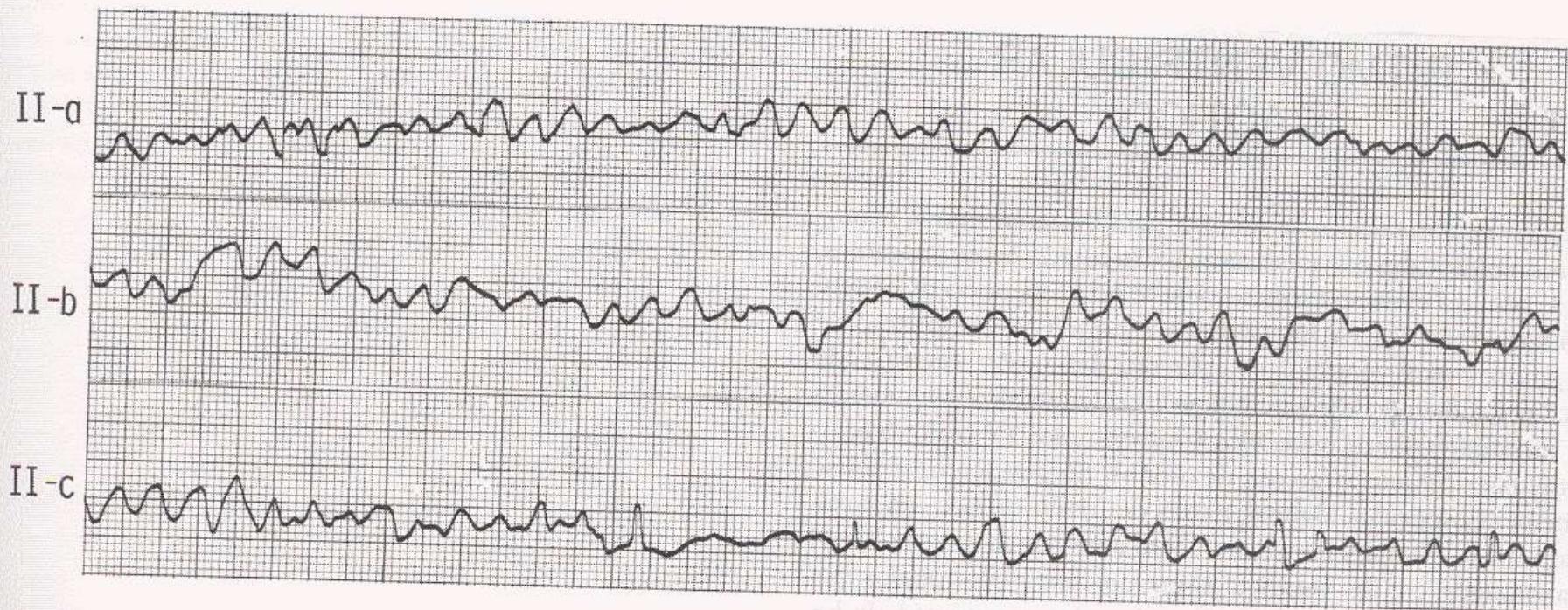


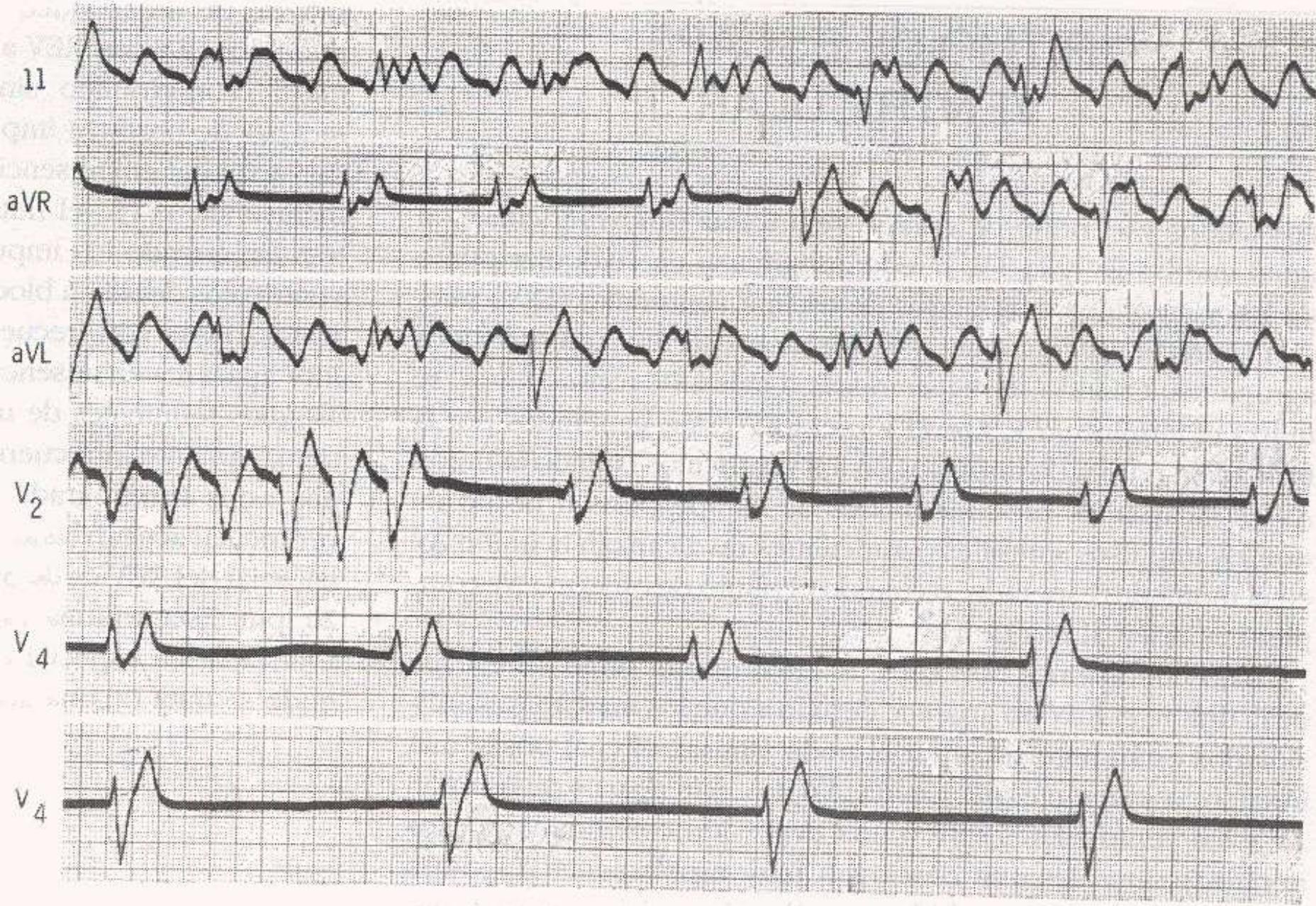


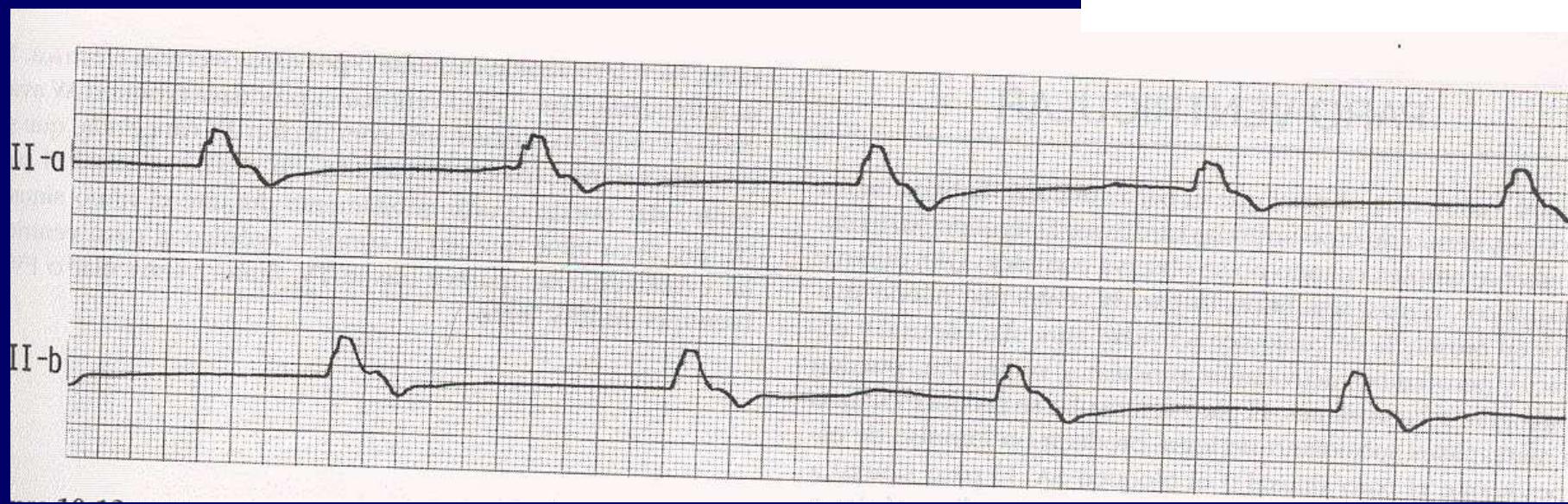


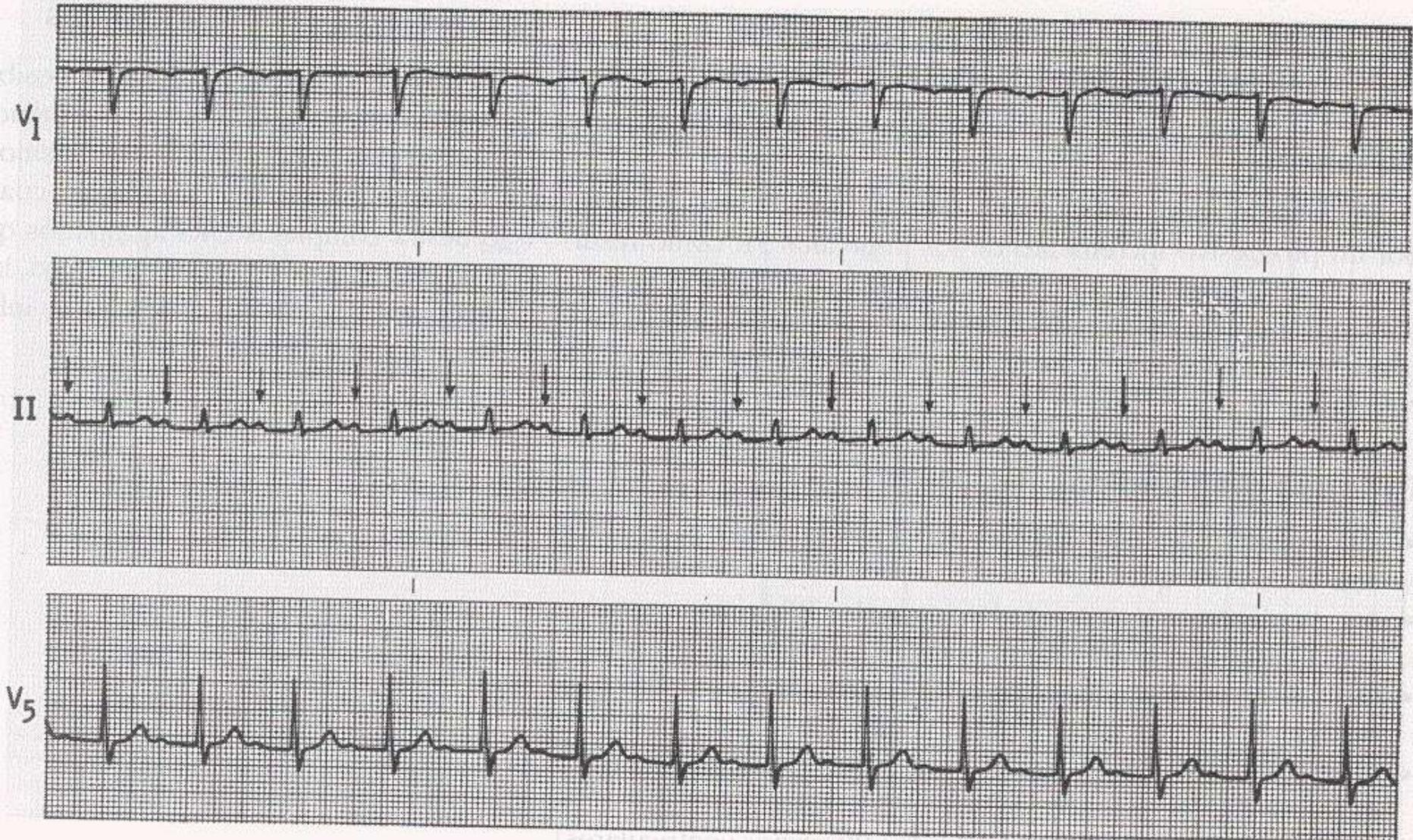


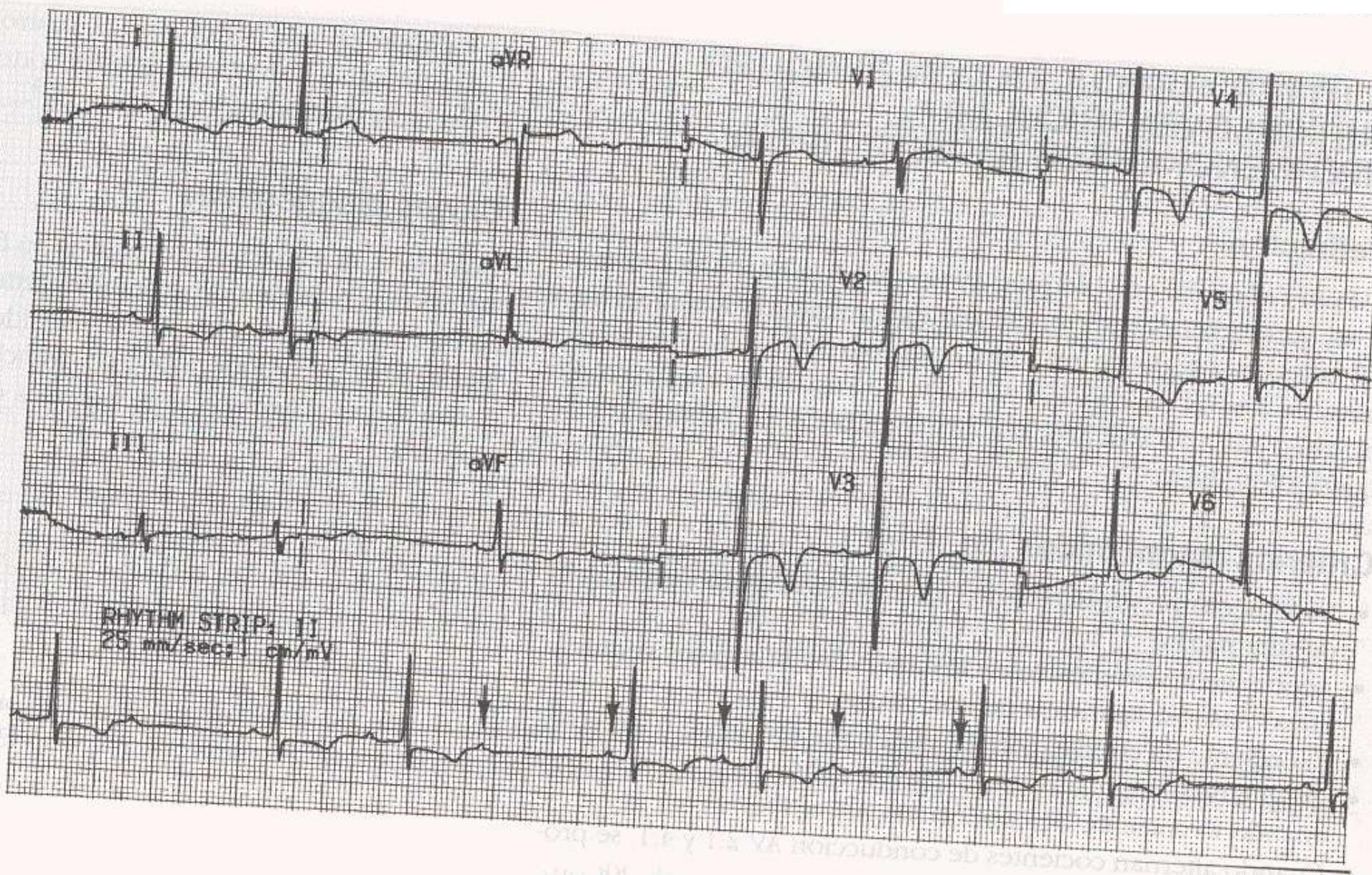


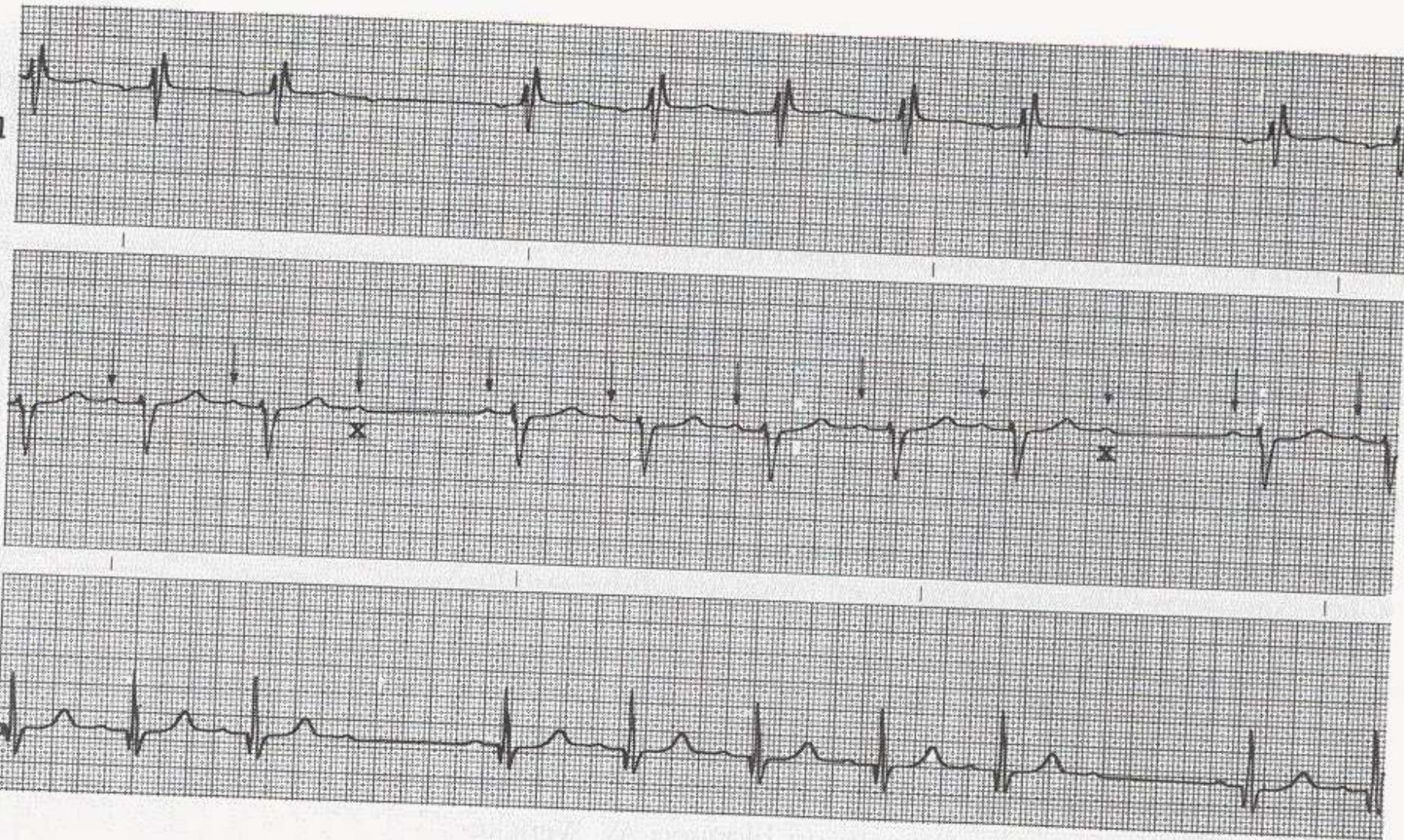


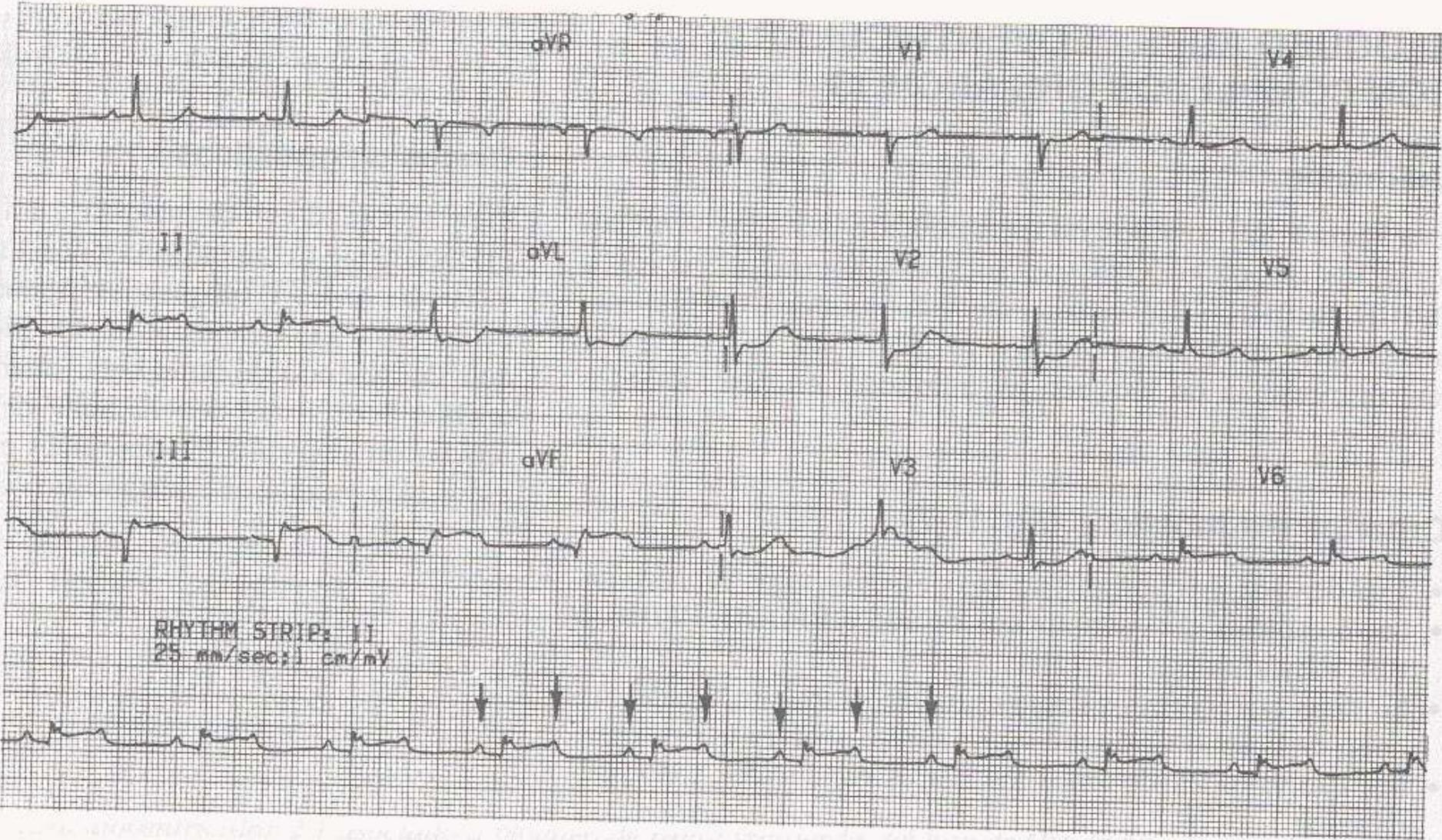


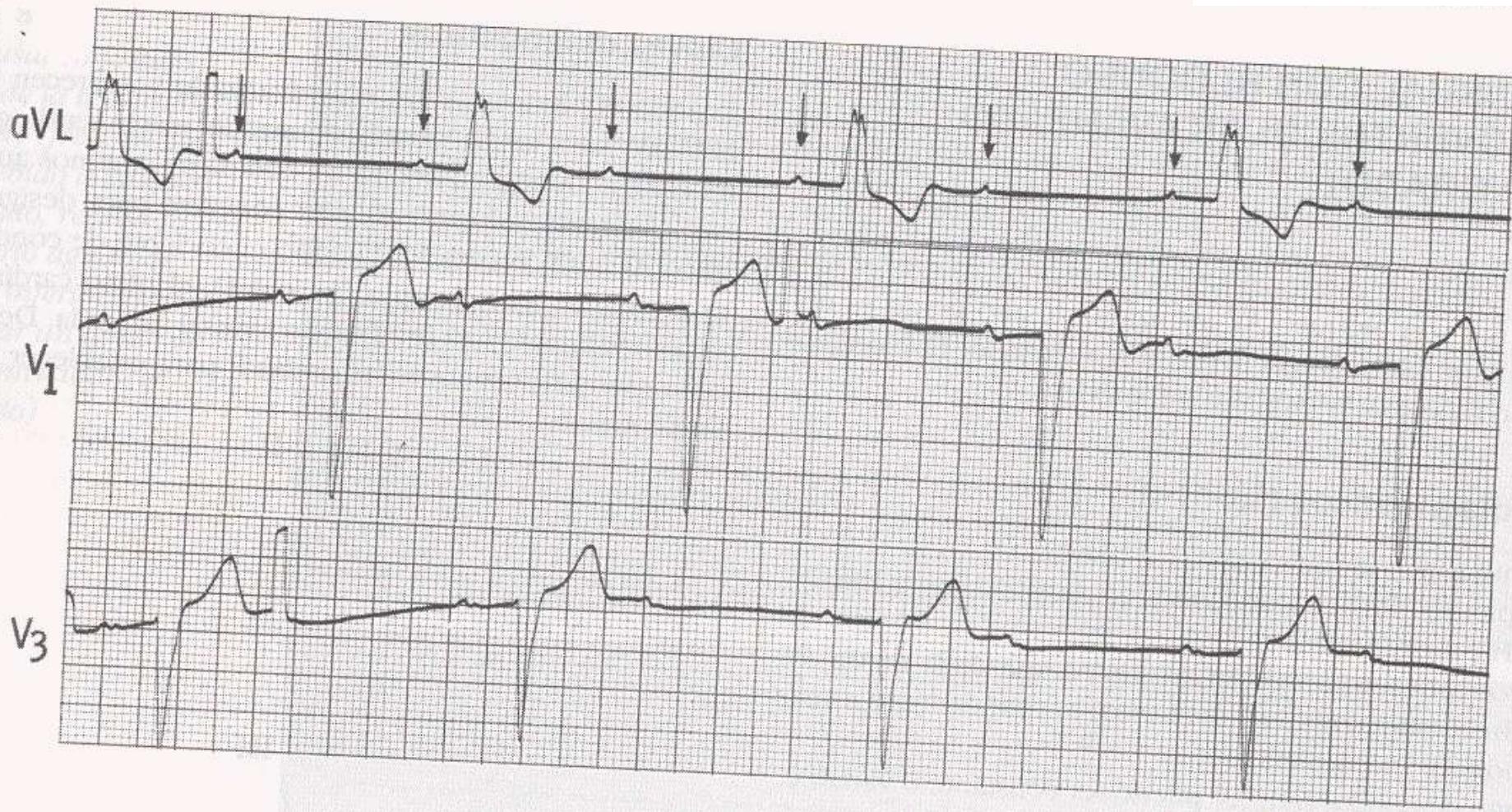


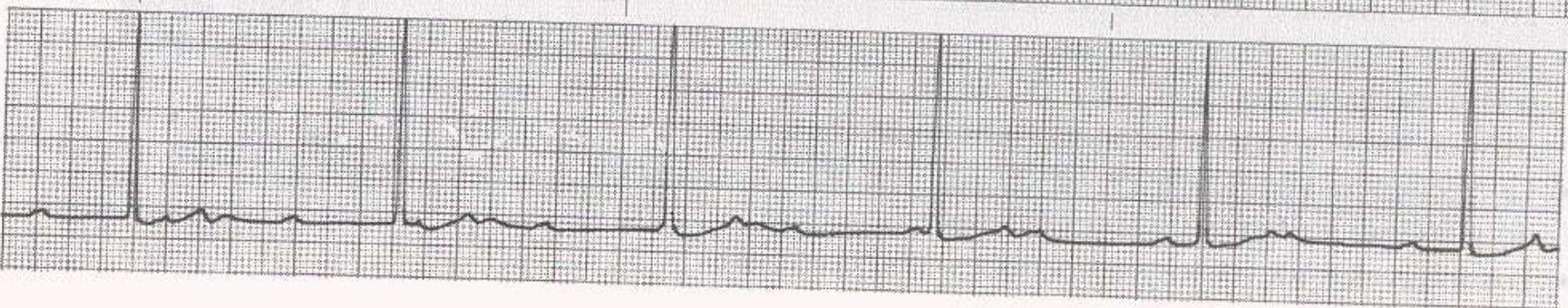
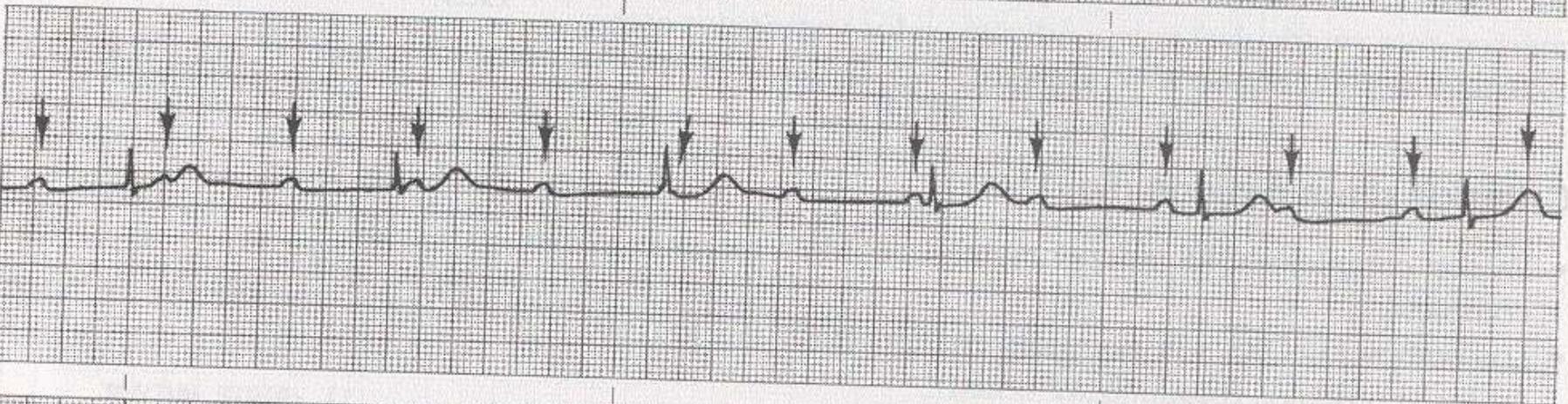
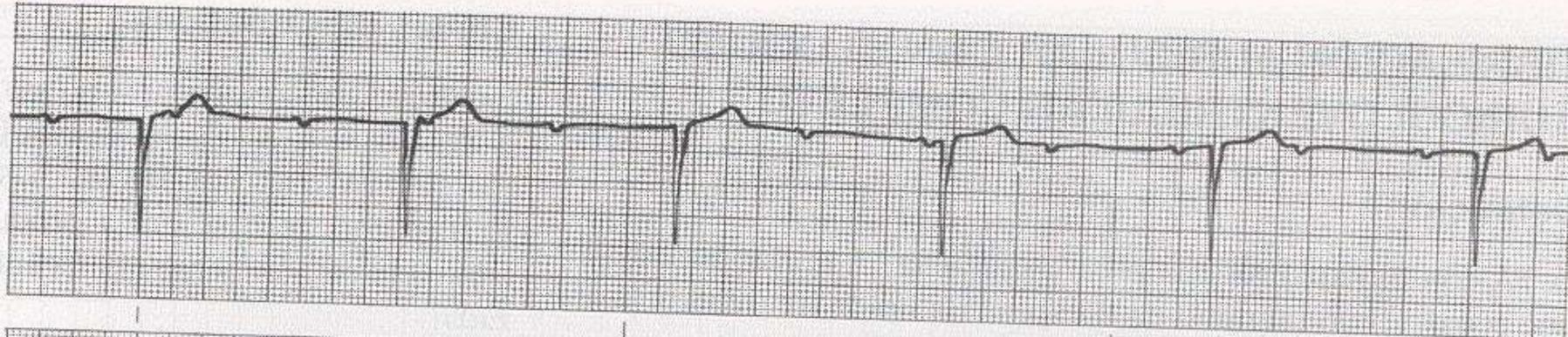


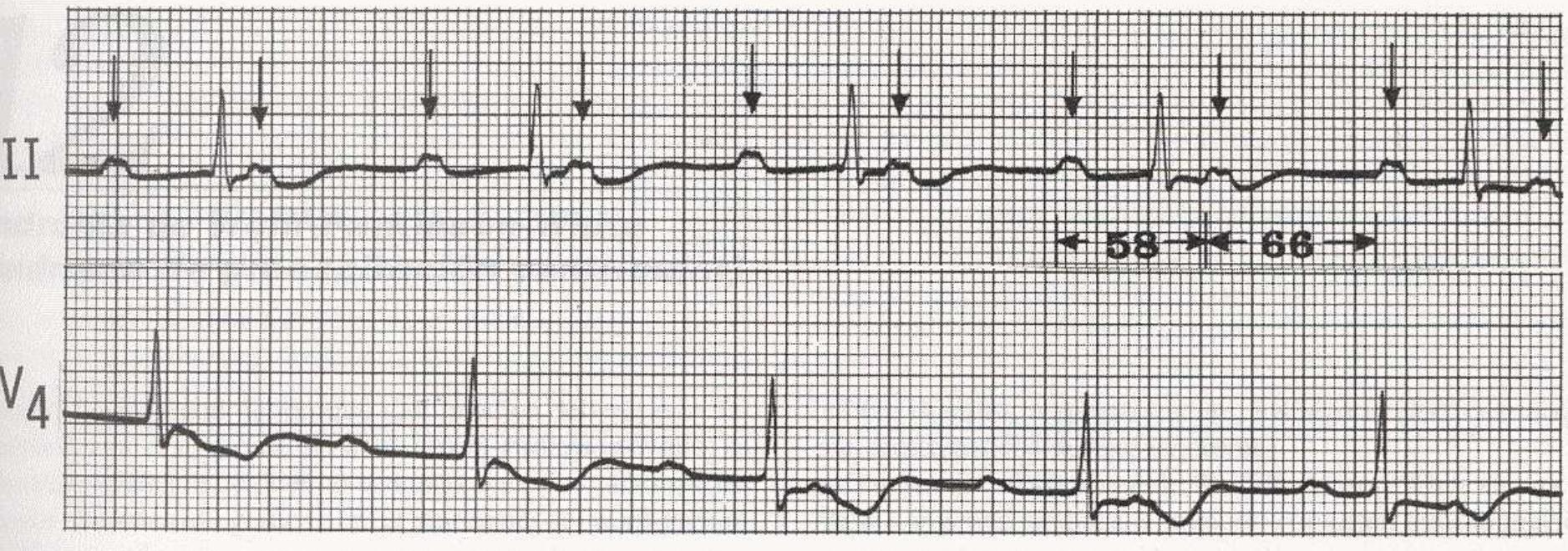


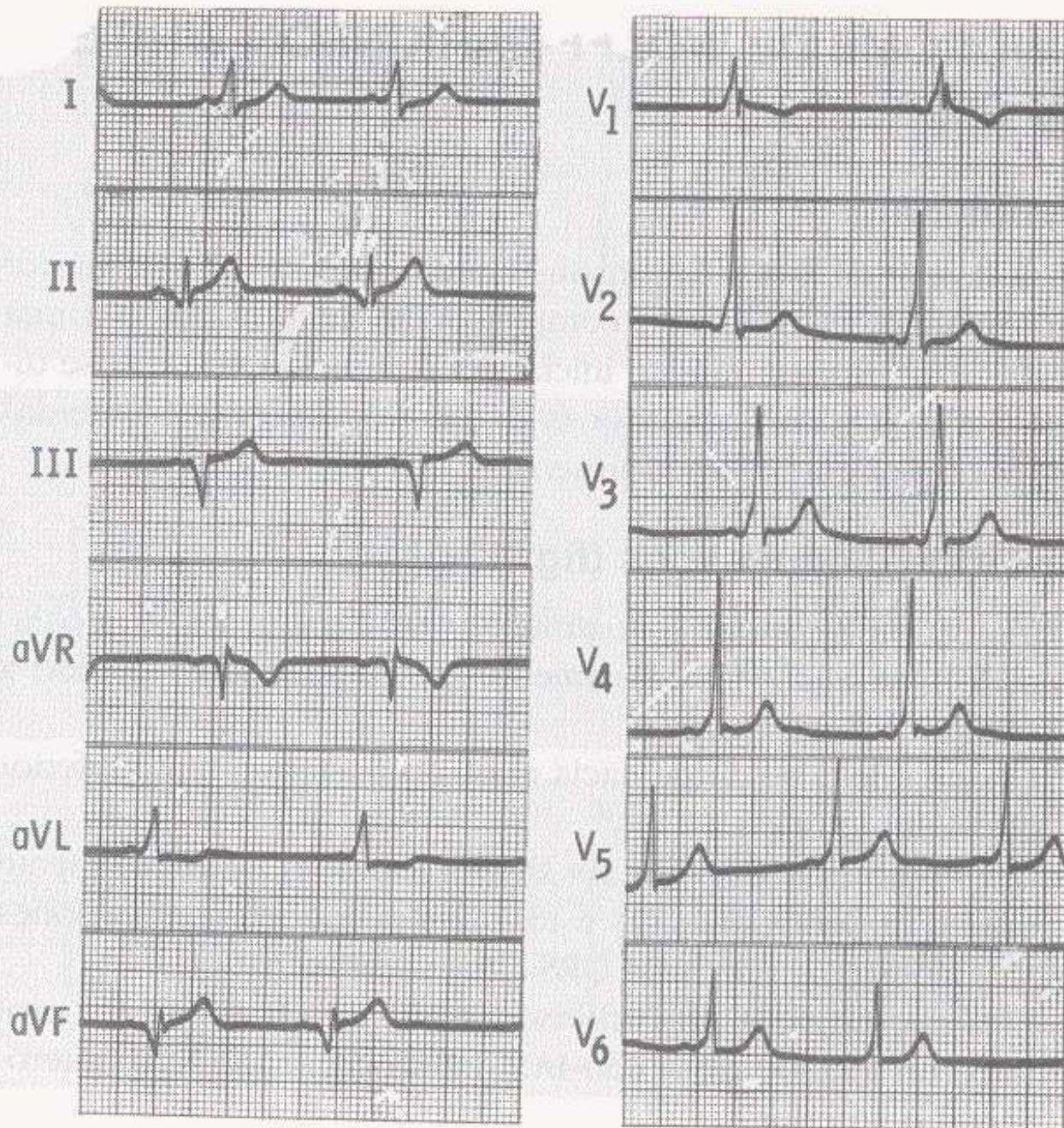


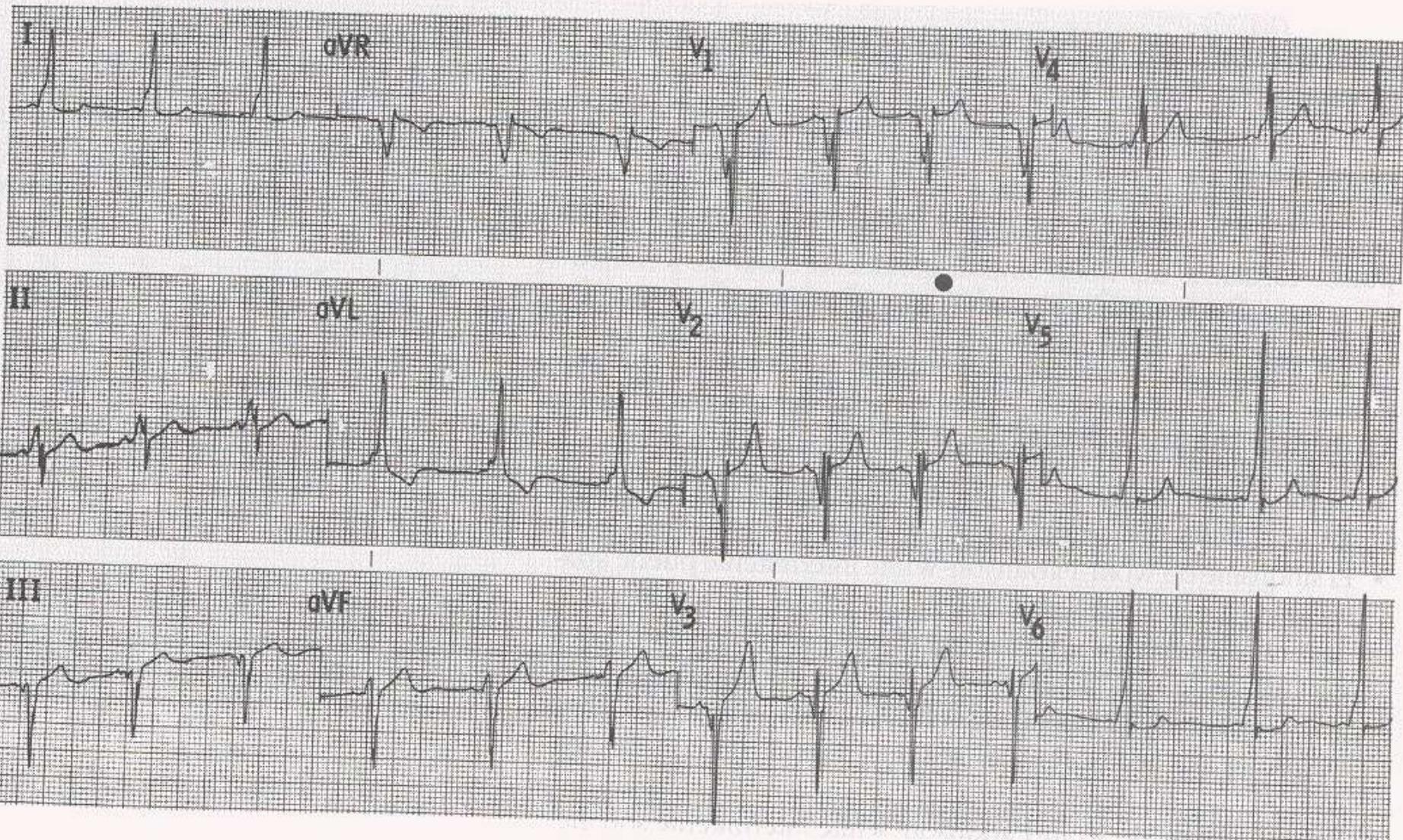


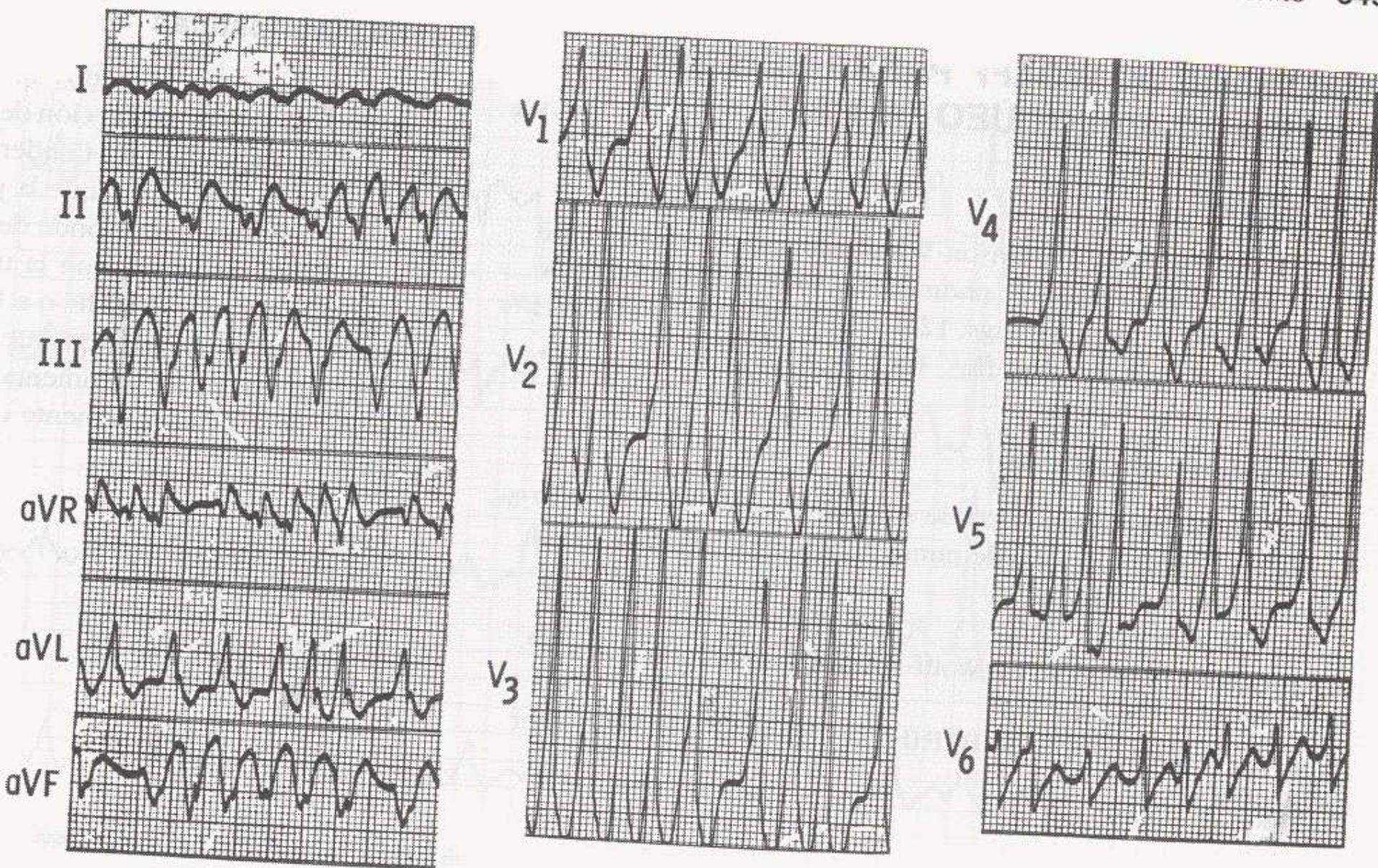


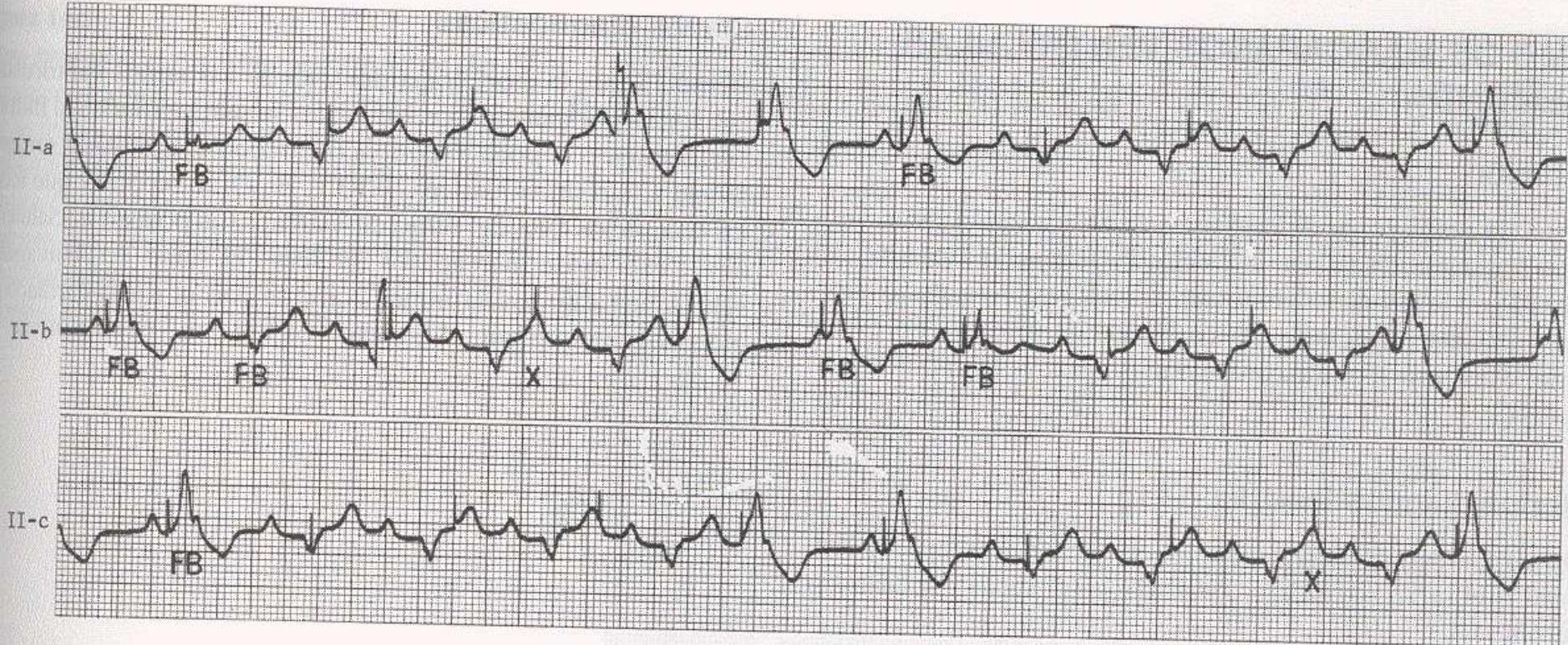


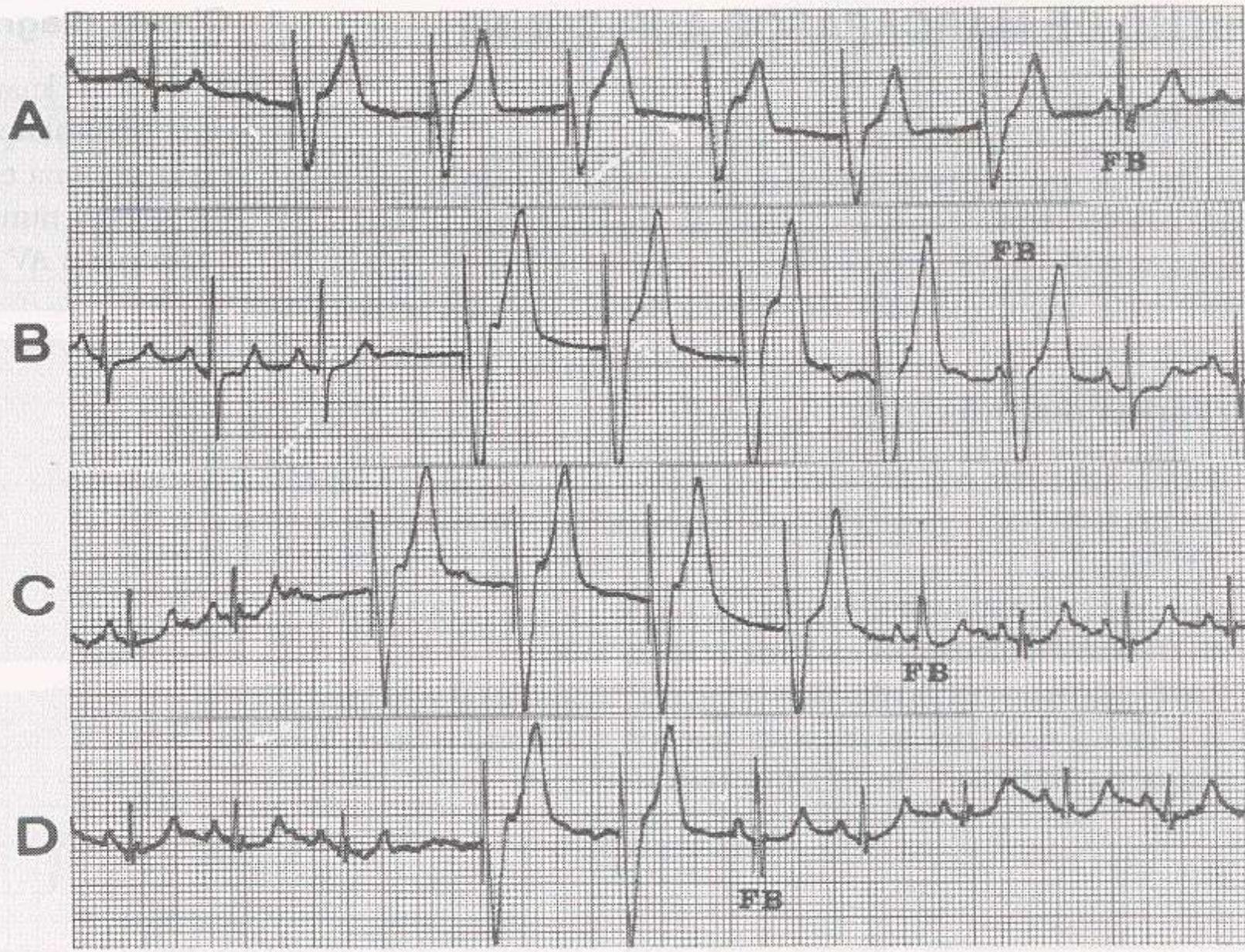


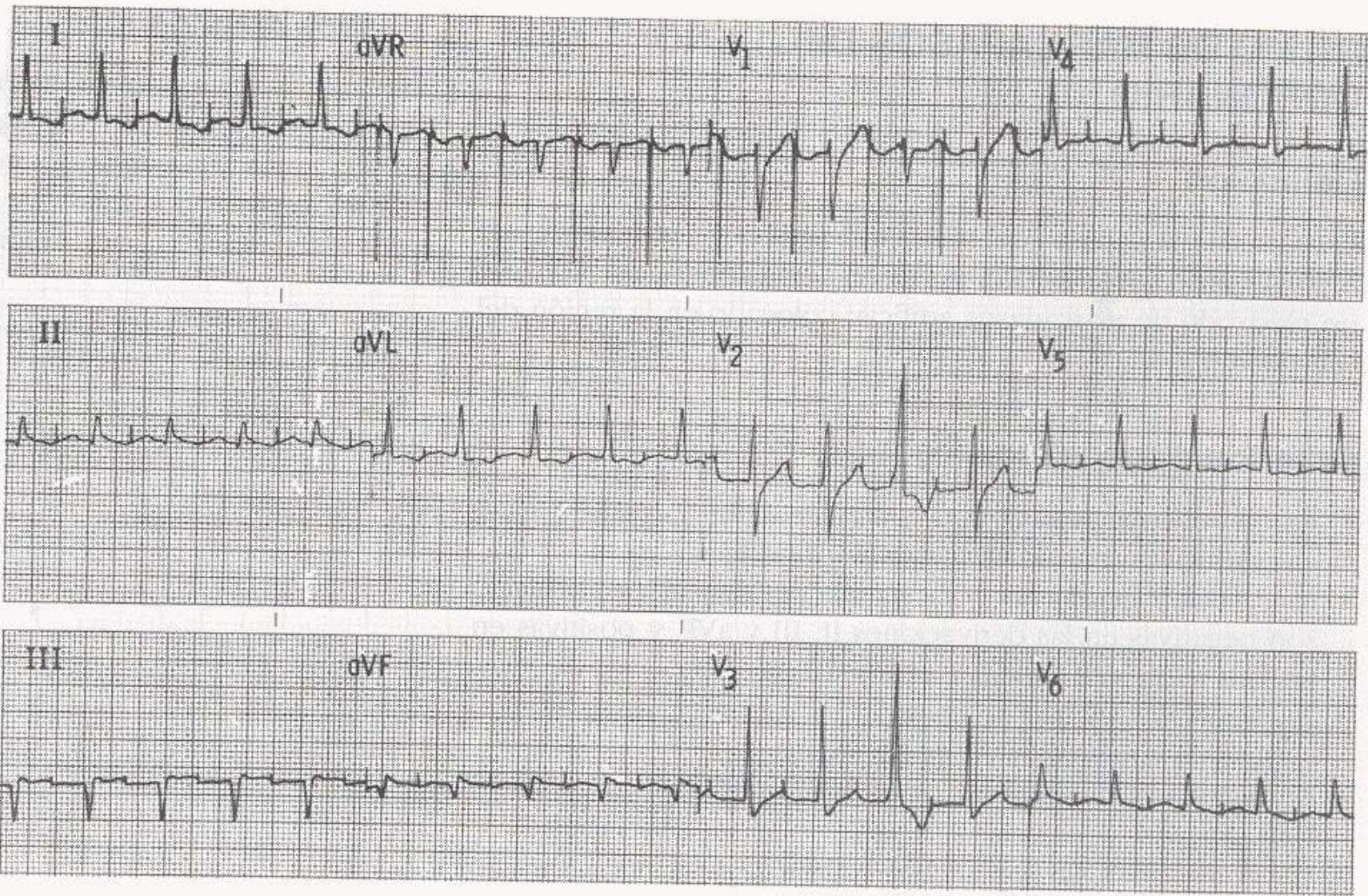


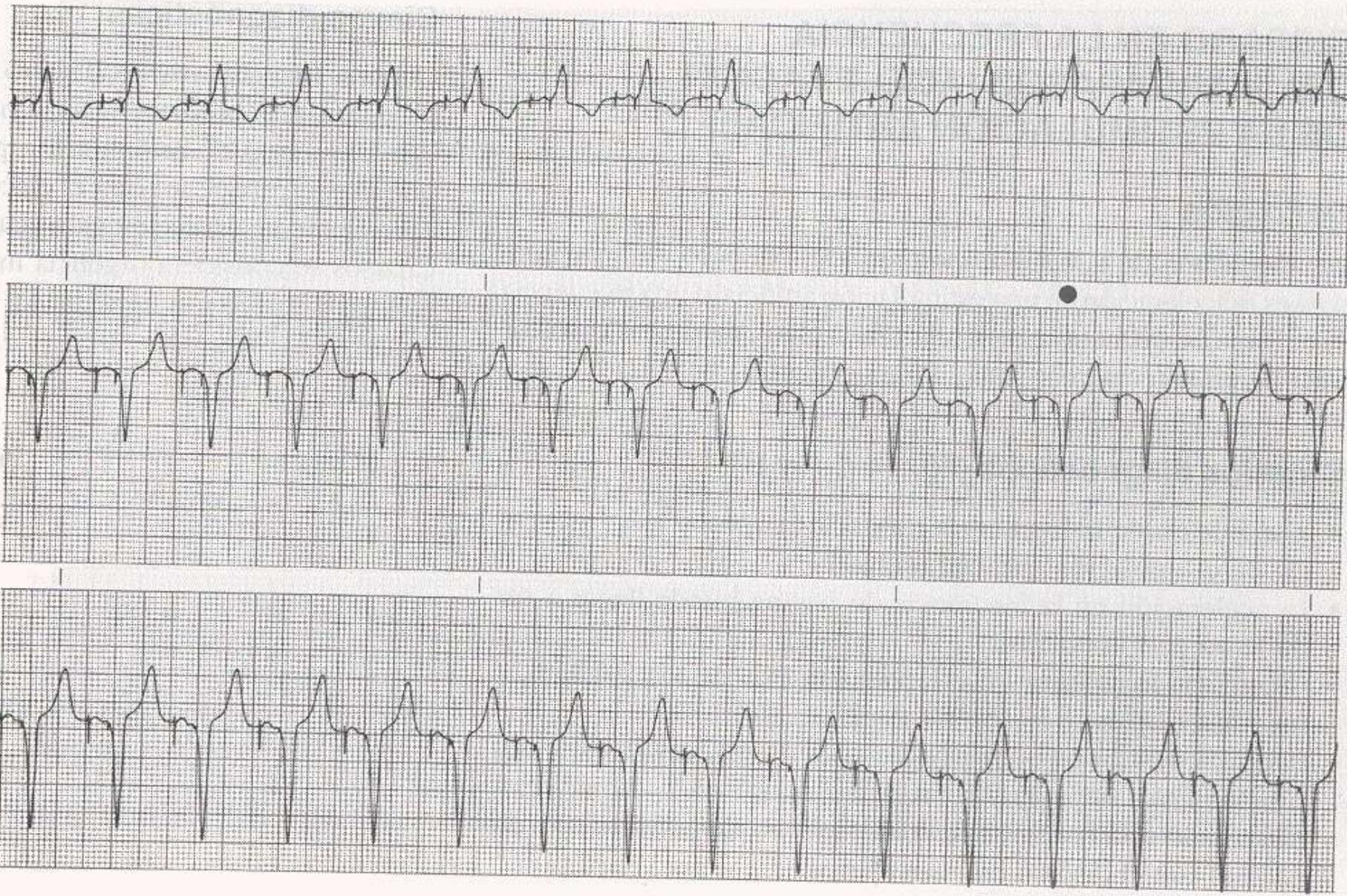




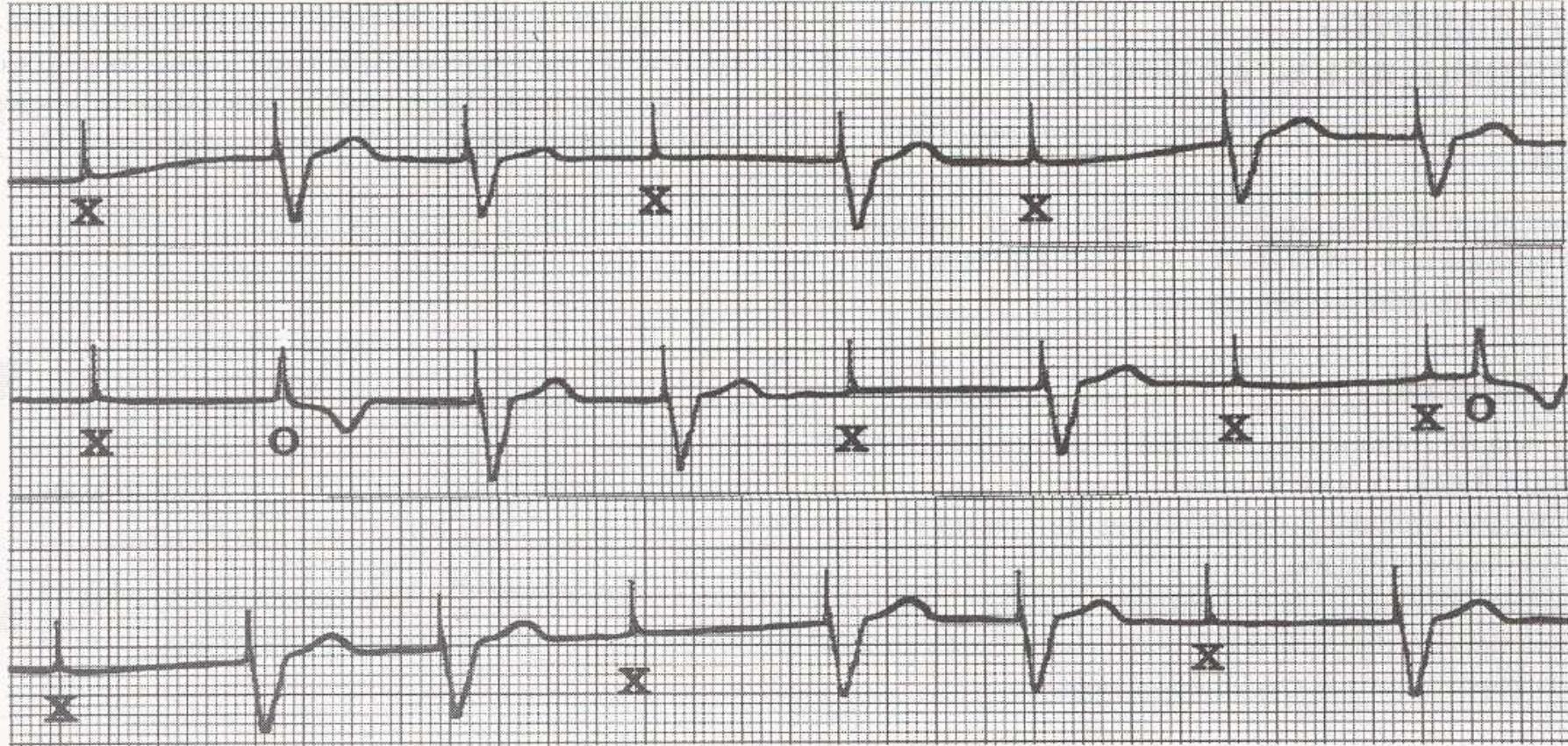








A



B

C

