



Seção Médica de Eletrofisiologia Clínica e Arritmias Cardíacas
Instituto Dante Pazzanese de Cardiologia

Isquemia Lesão e Necrose Miocárdica

Curso de Eletrocardiografia
Rogério Braga Andalaft

Seção Médica de Eletrofisiologia Clínica e Arritmias
Cardíacas

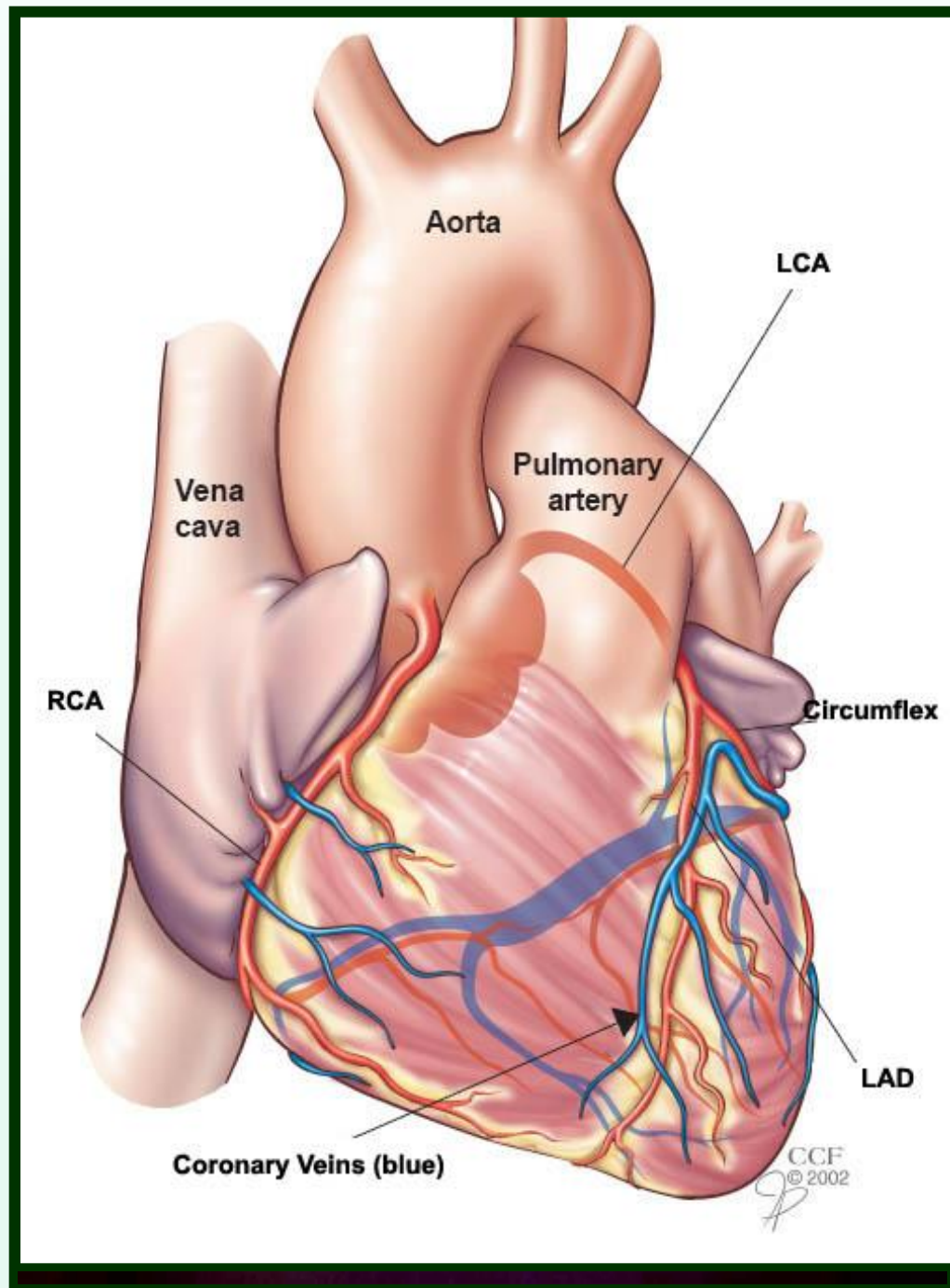


Seção Médica de Eletrofisiologia Clínica e Arritmias Cardíacas
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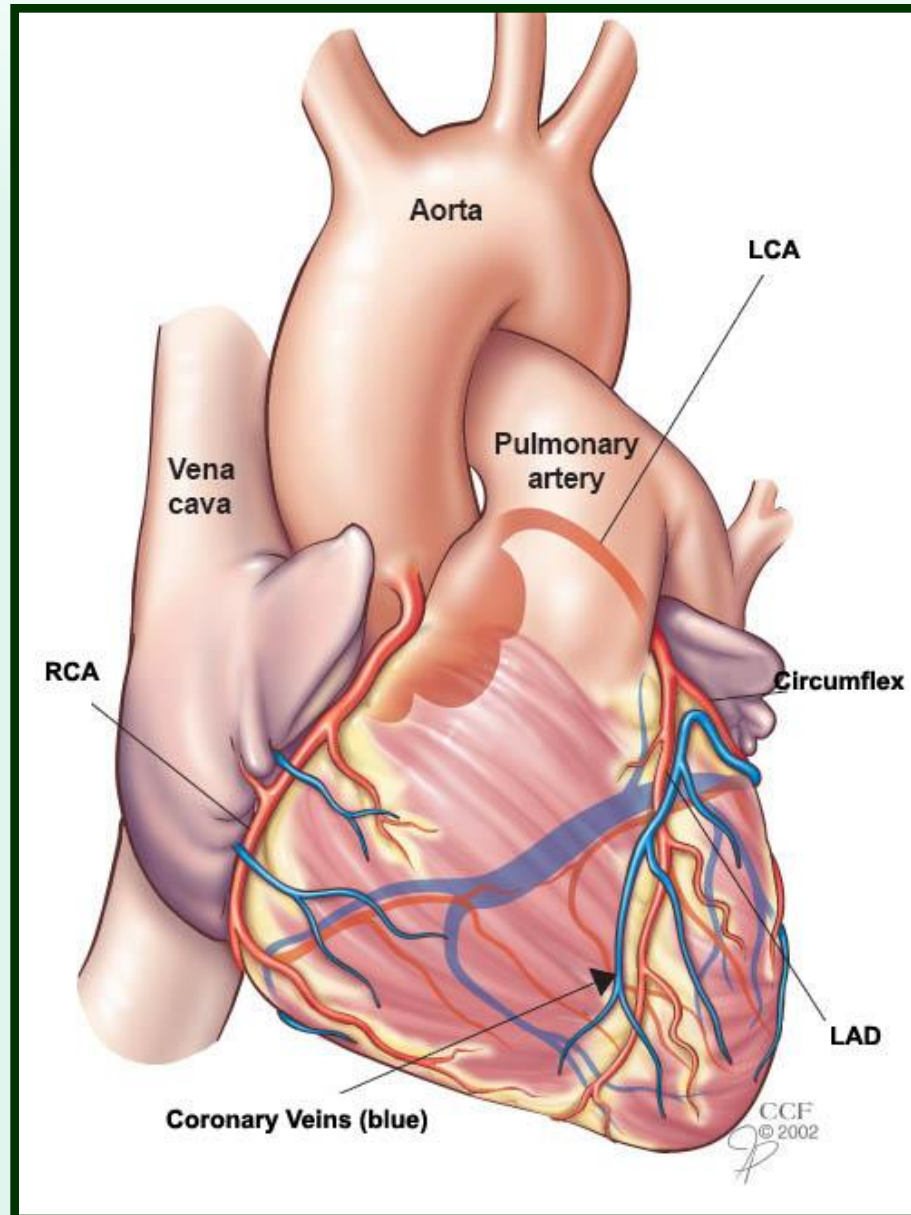
Isquemia Lesão e Necrose Miocárdica

**Aula disponível no site
www.arrytmiaonline.com.br**

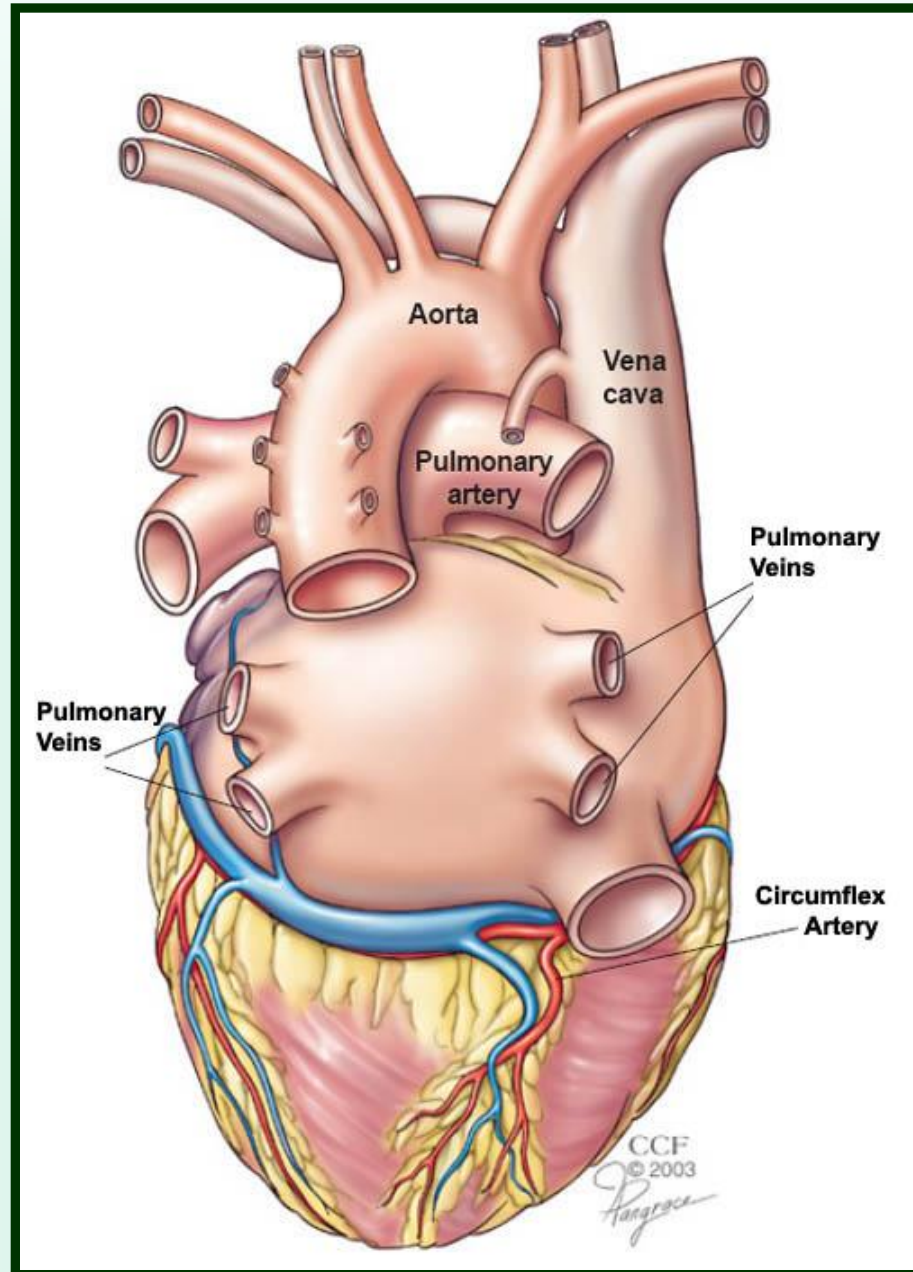
**Seção Médica de Eletrofisiologia Clínica e Arritmias
Cardíacas**



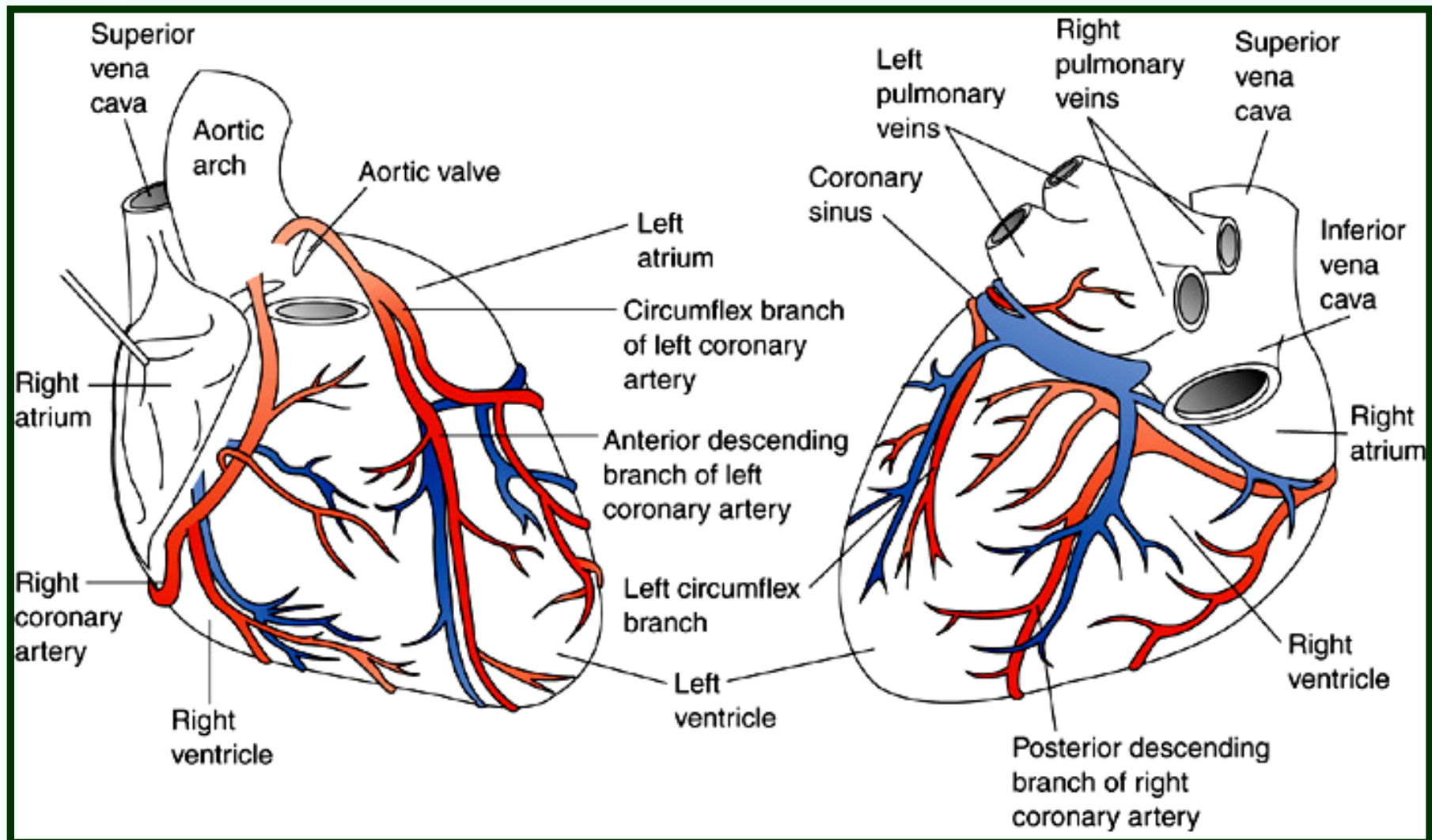
Anatomia das Artérias Coronárias



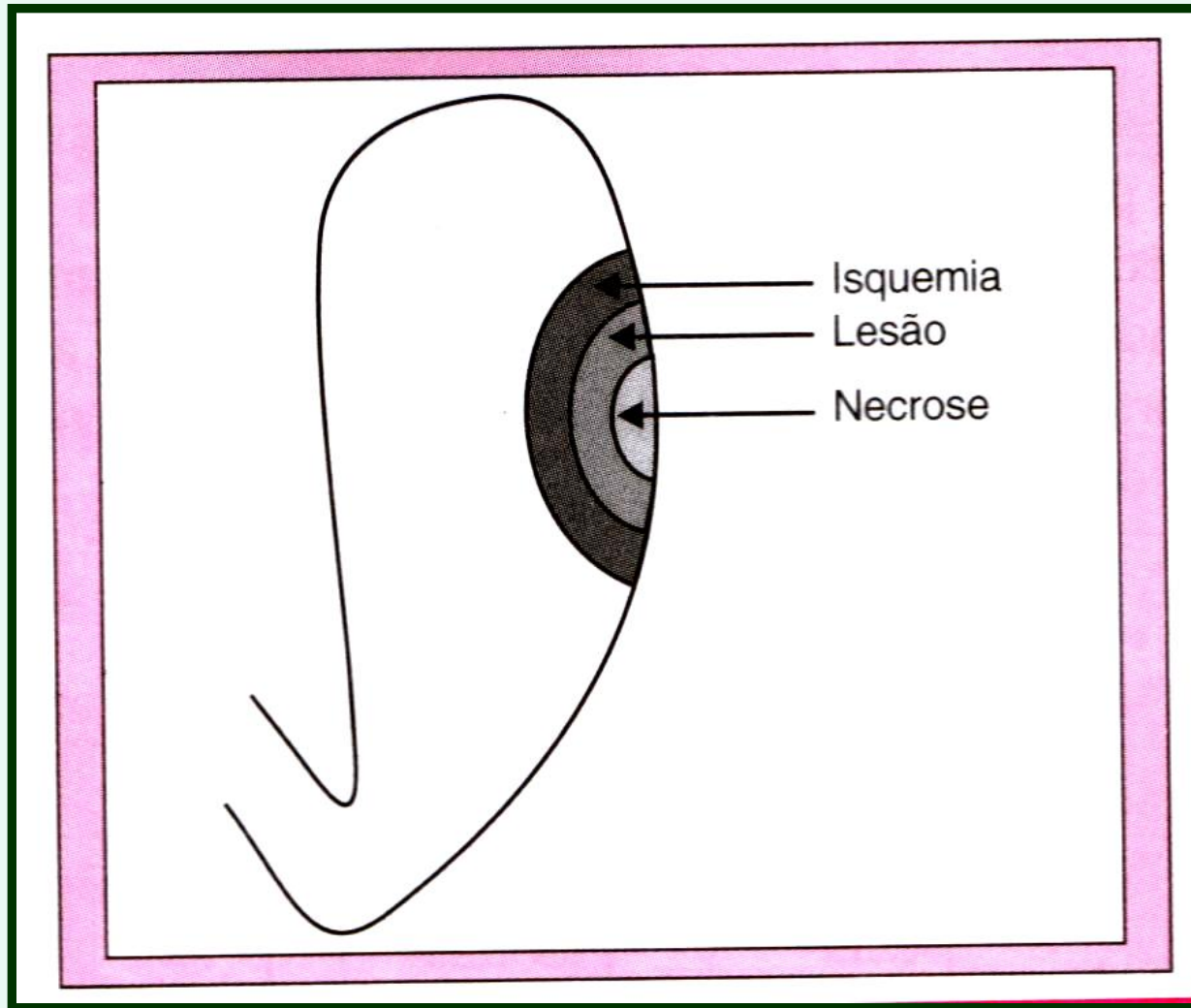
Anatomia das Artérias Coronárias

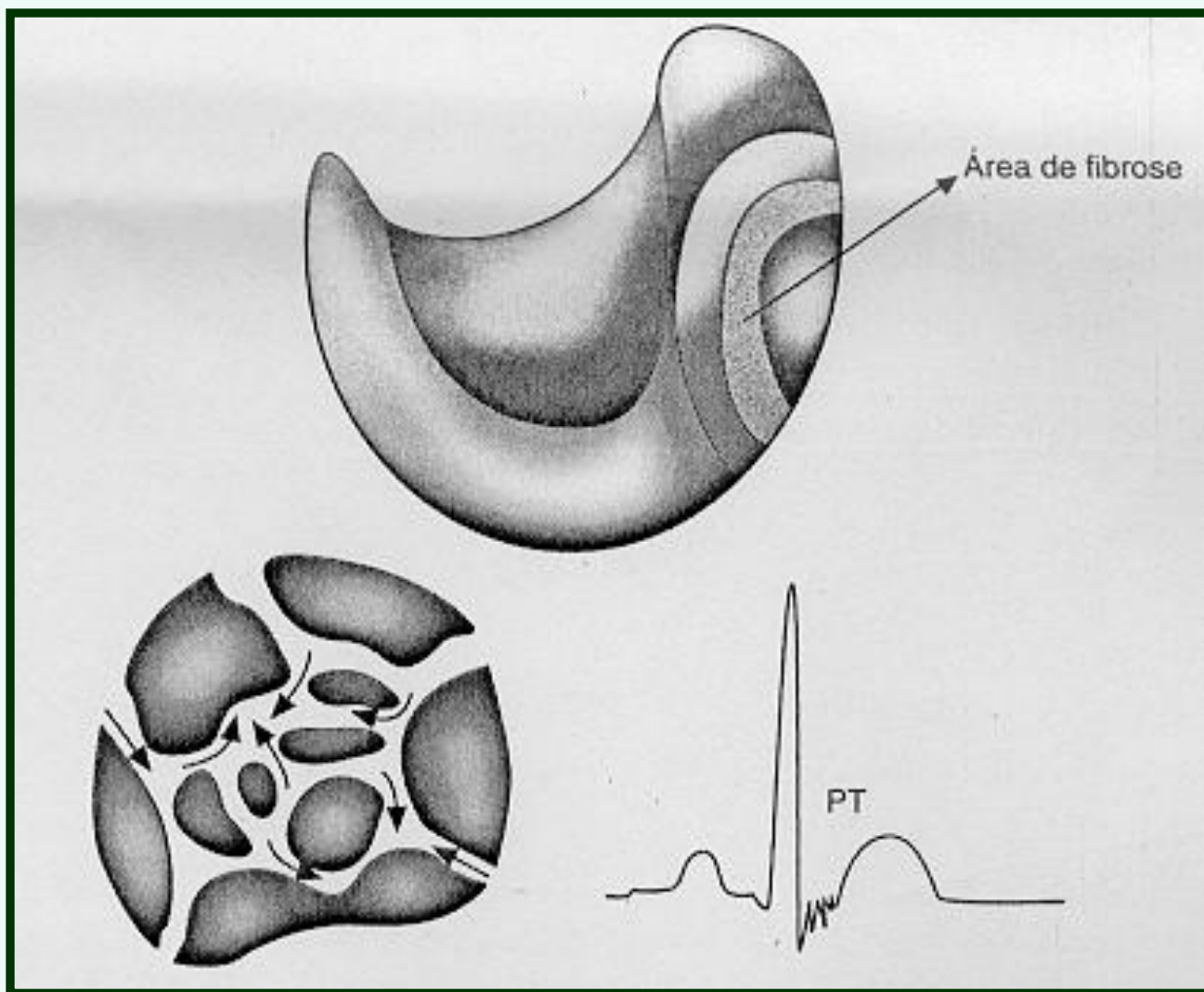


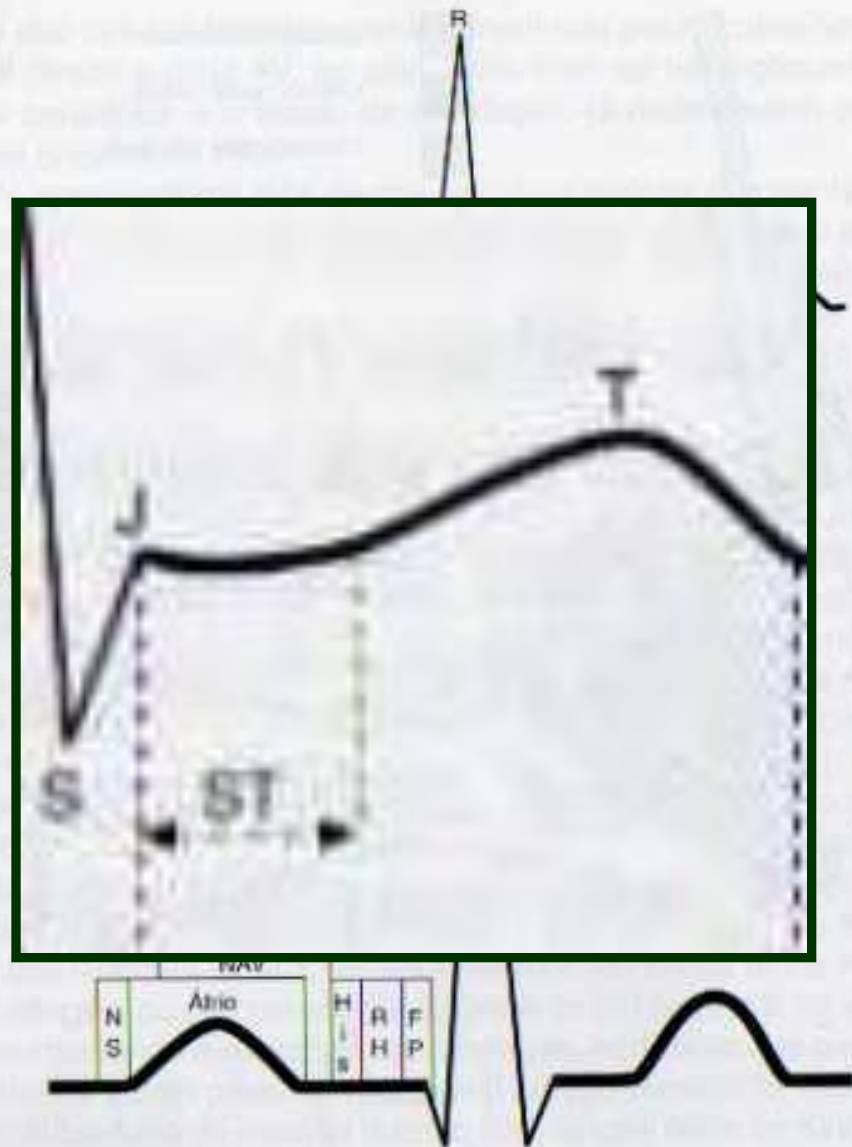
Anatomia das Artérias Coronárias



Comprometimento Miocárdico na Insuficiência Coronariana

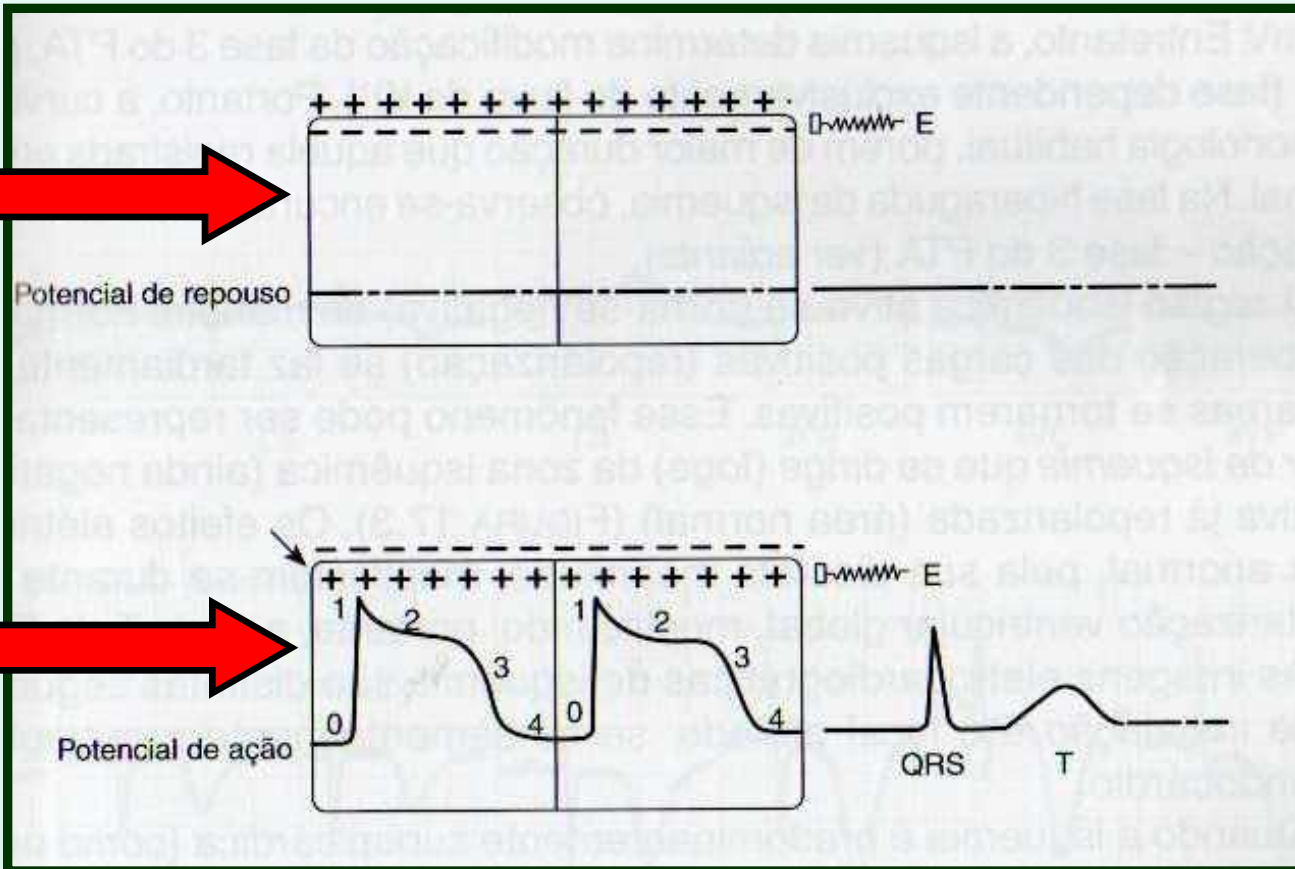






B

O meio interno é negativo em relação ao meio externo



Inversão de cargas durante a despolarização

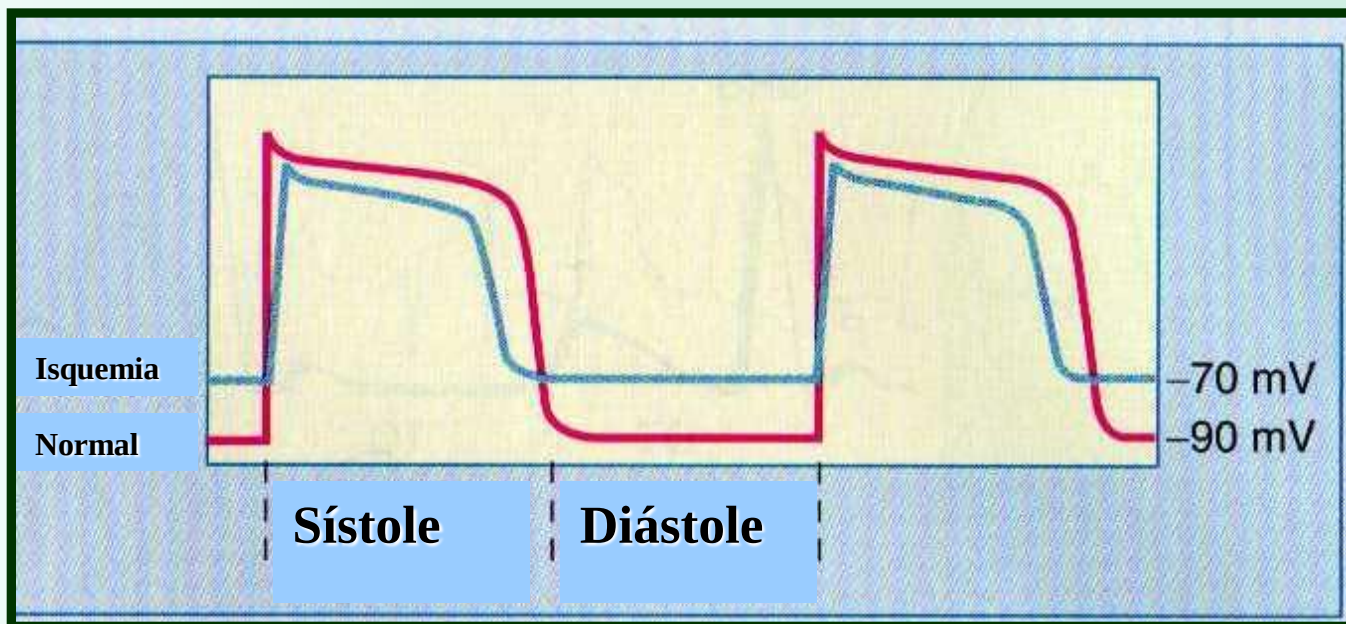


Isquemia

- ✓ Instala-se após 20 minutos da oclusão
- ✓ **Atraso no processo de repolarização**
- ✓ Alteração da bomba de sódio e potássio
- ✓ Diminuição dp K intracelular
- ✓ Prolongamento da Fase 3 dependente do fluxo K_i



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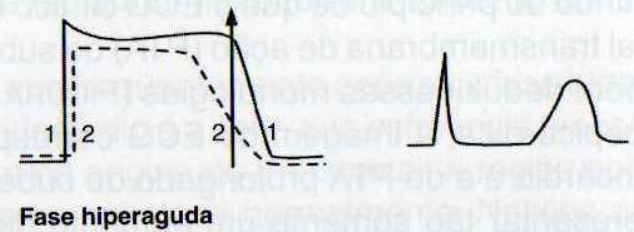
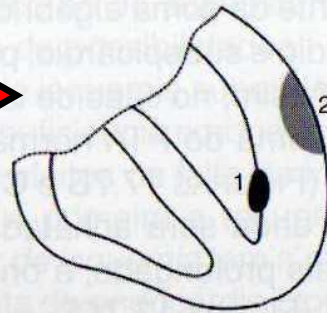


Fase hiperaguda

Prolongamento do QT mantendo T positiva



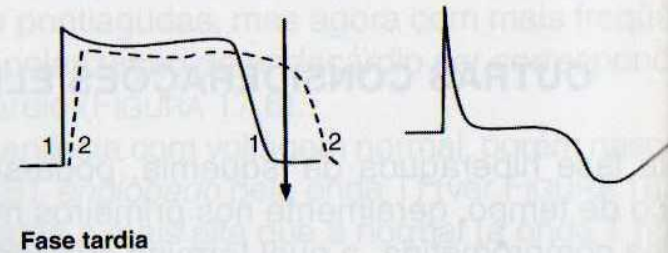
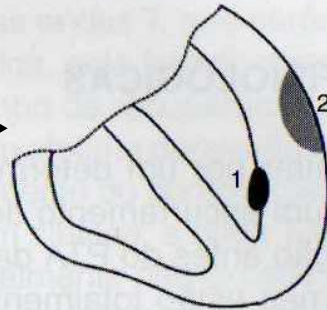
A



Na evolução
inversão da onda
T - isquemia
subepicárdica



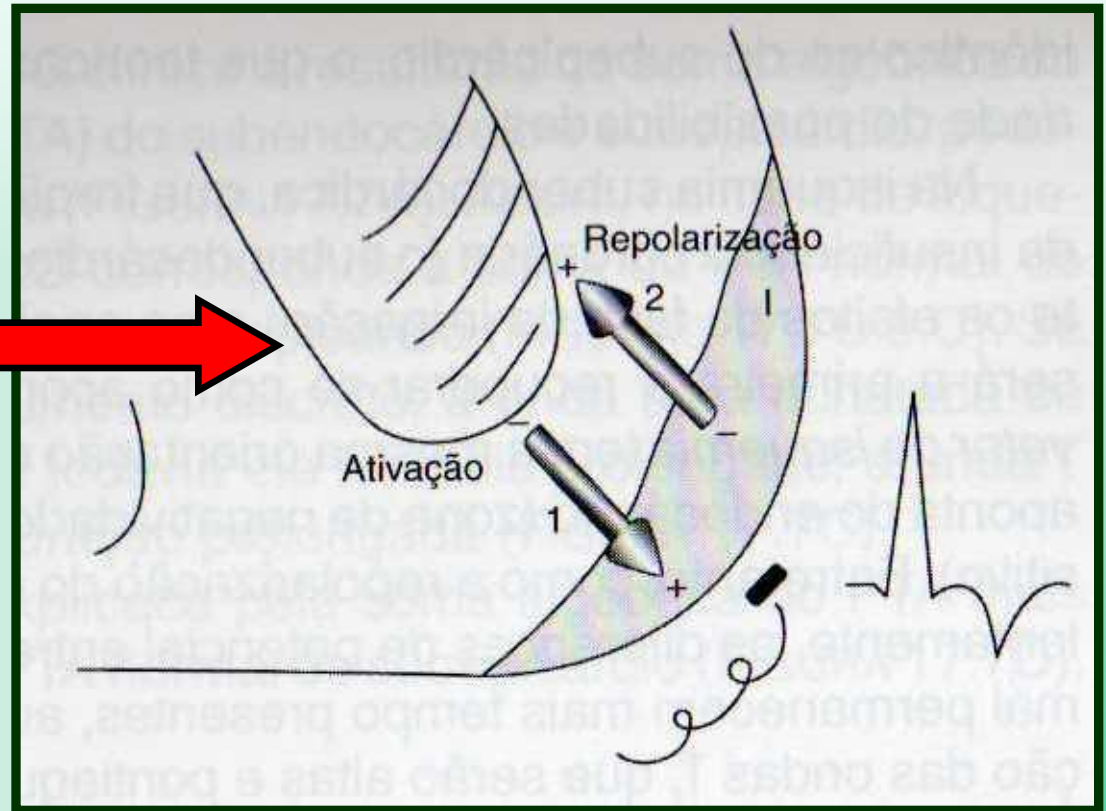
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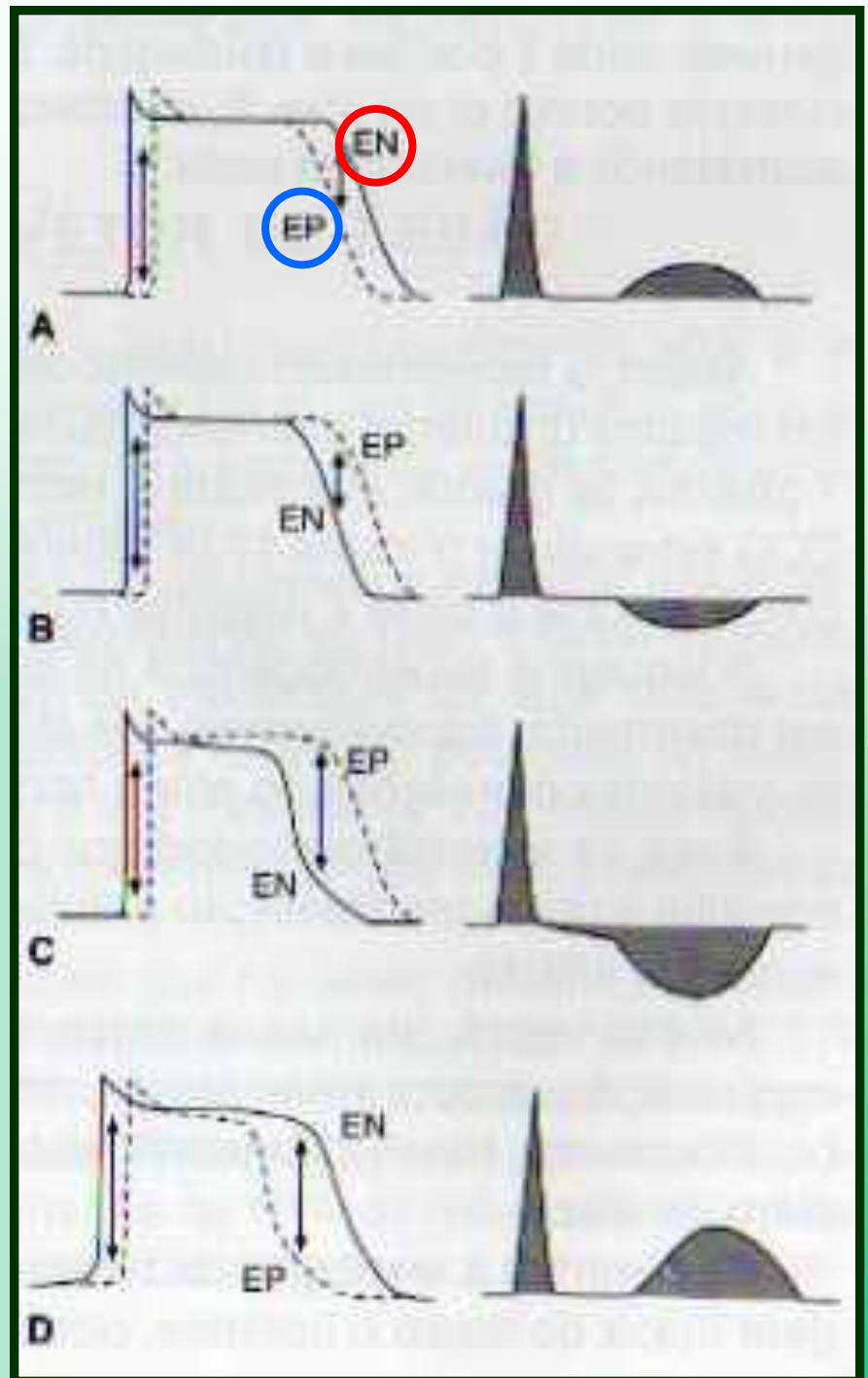
Área 1 - normal

Área 2 - isquemia

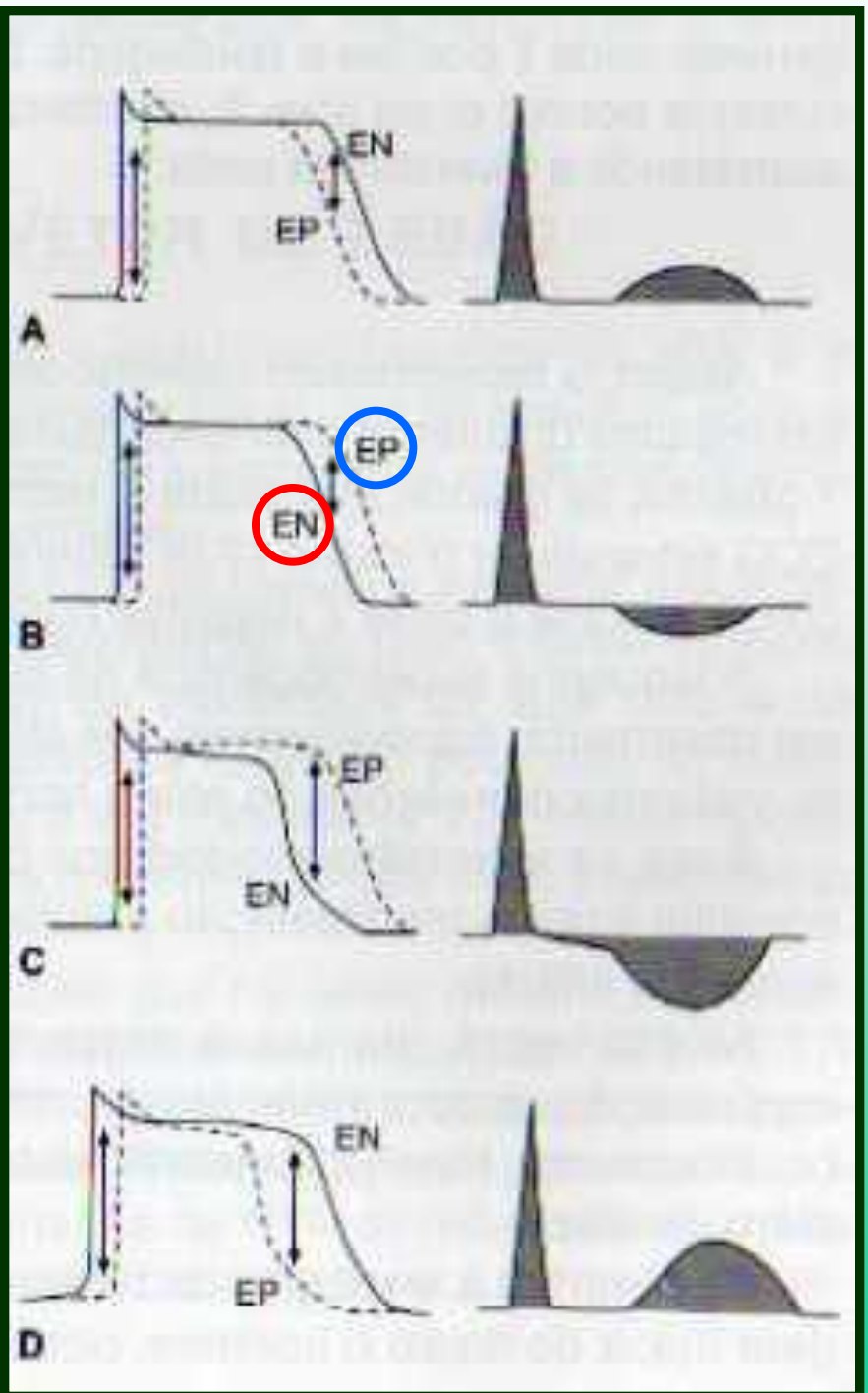
**Ativação normal e
retardo na repolarização
isquemia subepicárdica**



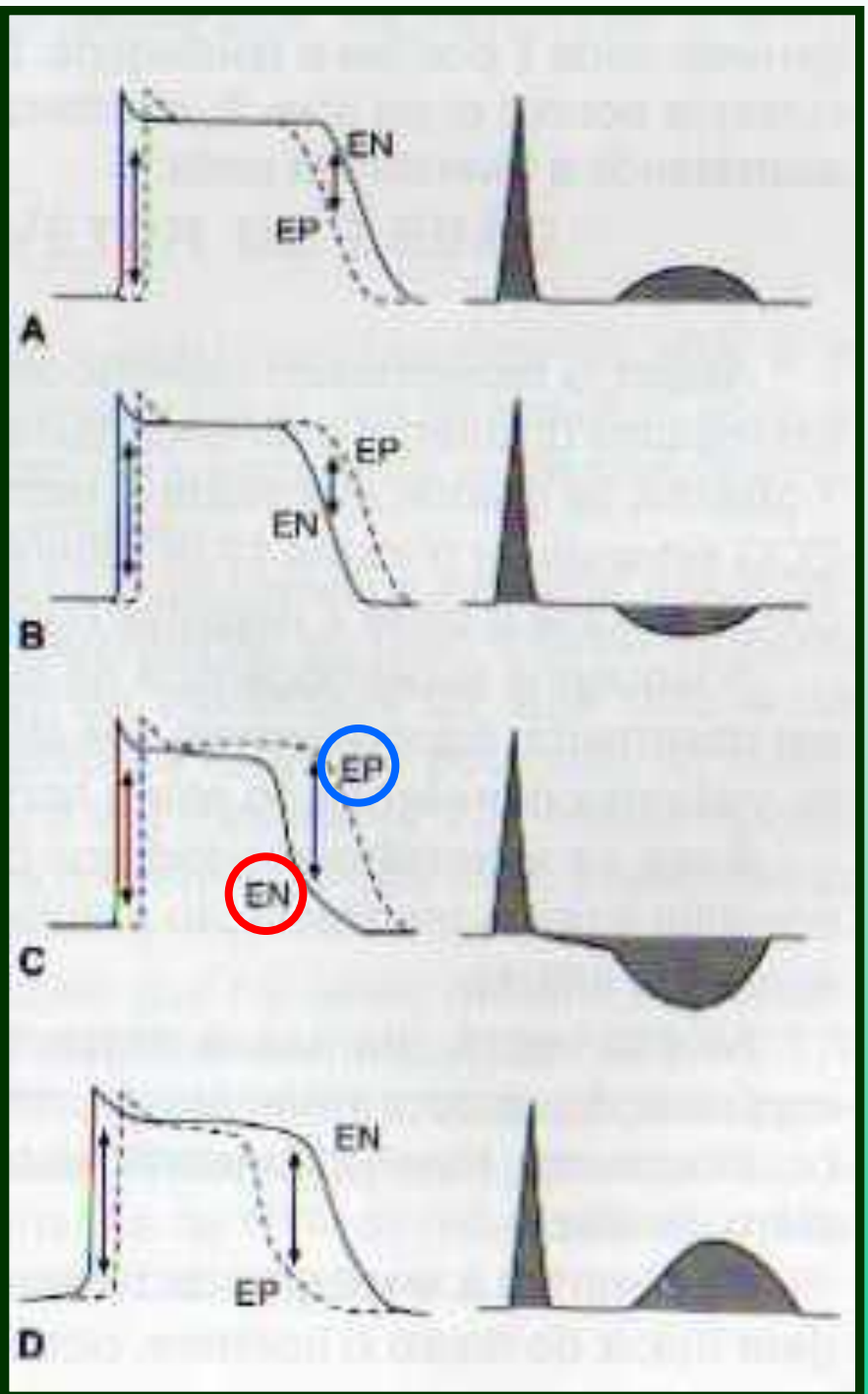
Normal



Isquemia
subepicárdica



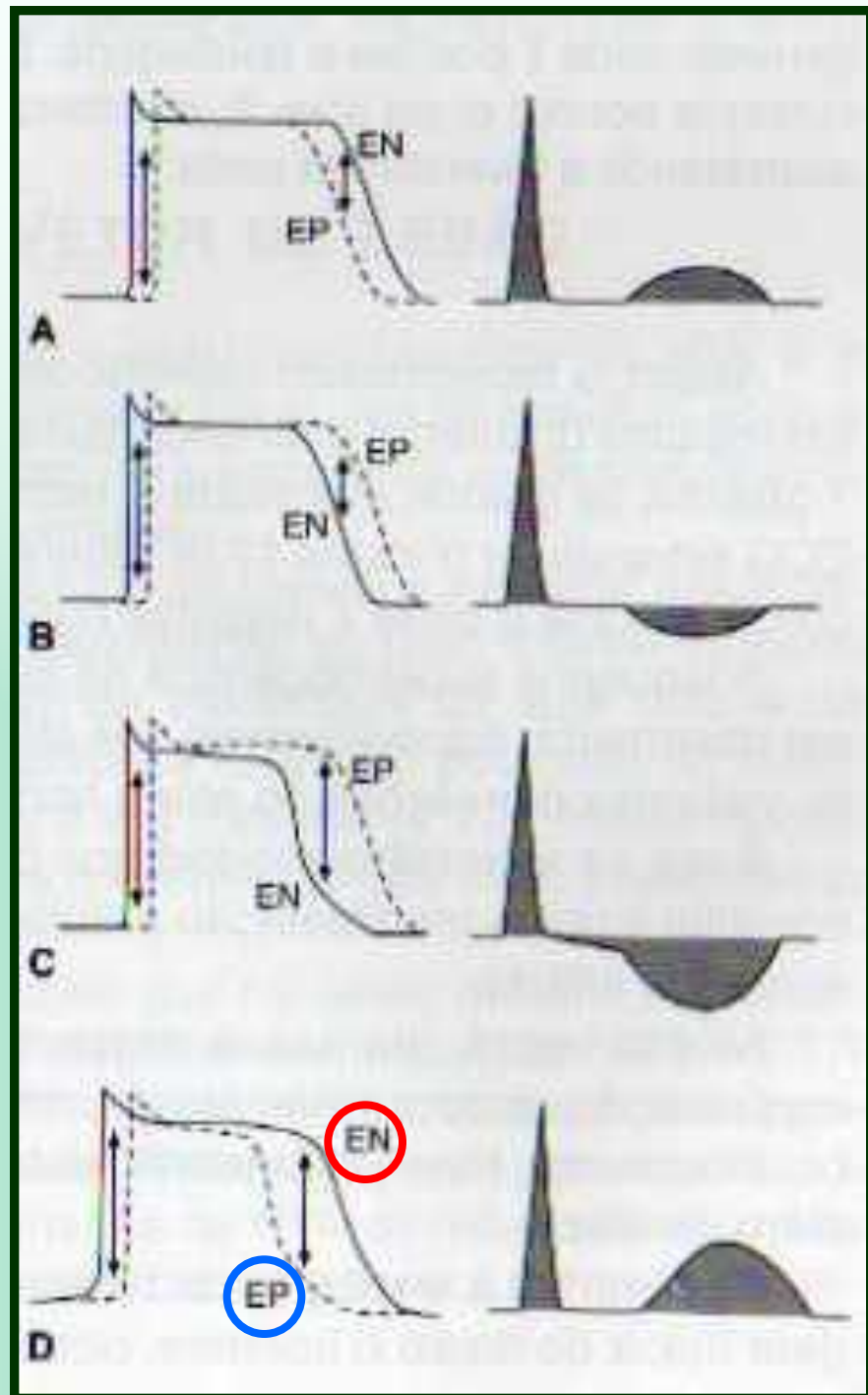
Isquemia
subepicárdica



Isquemia



subendocárdica



Normal



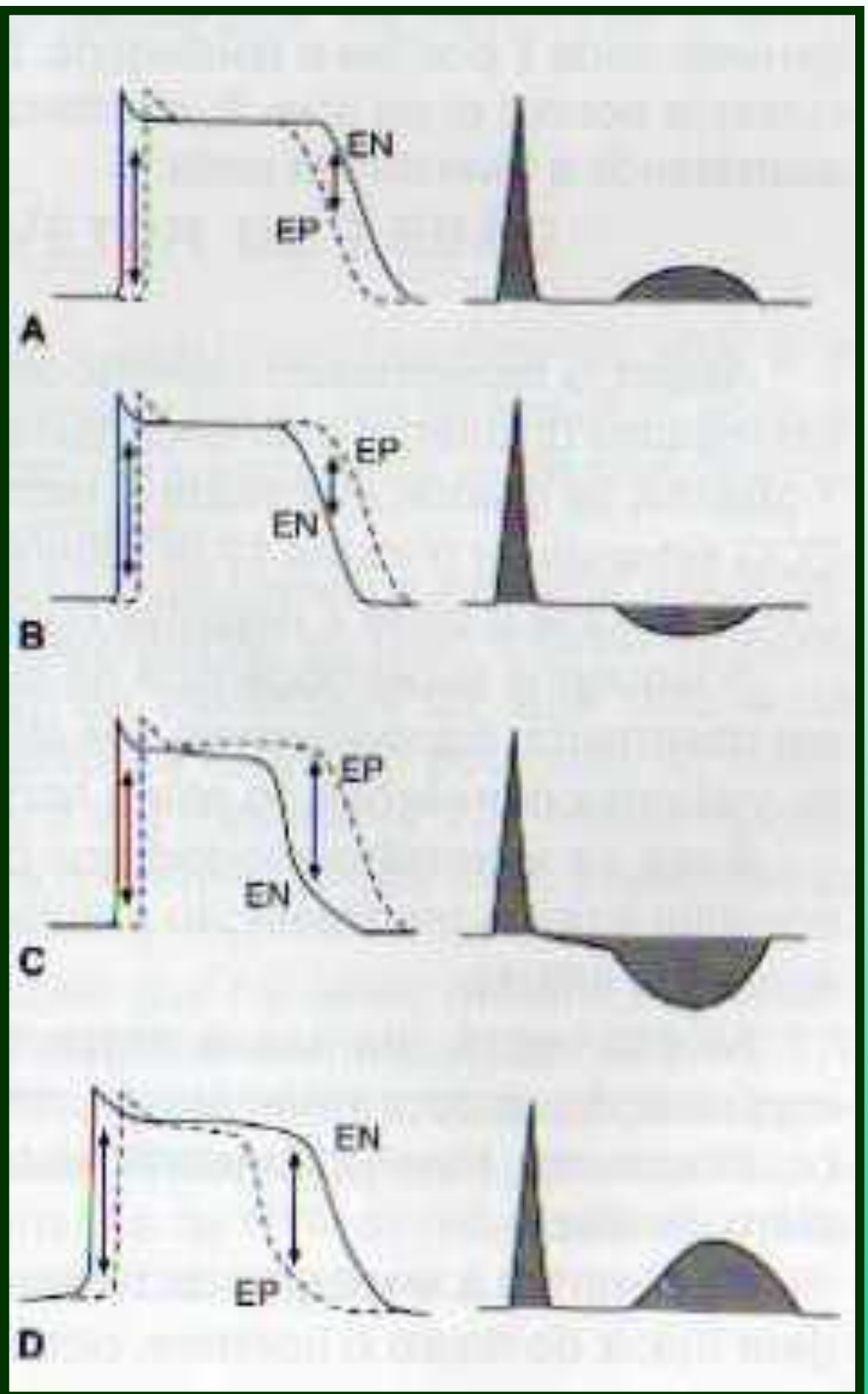
Isquemia
subepicárdica



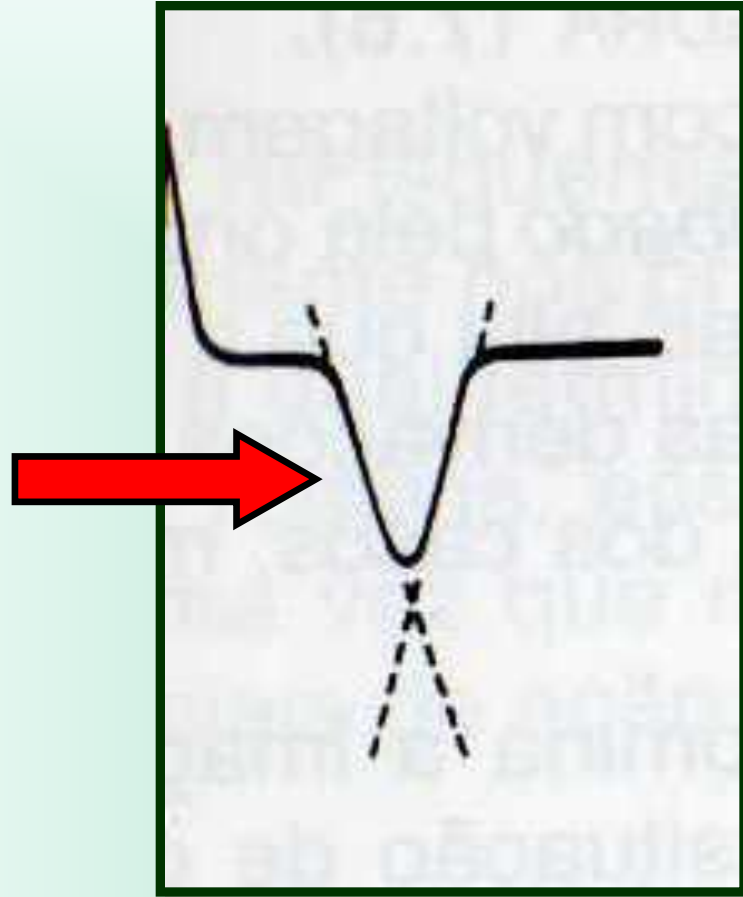
Isquemia
subepicárdica



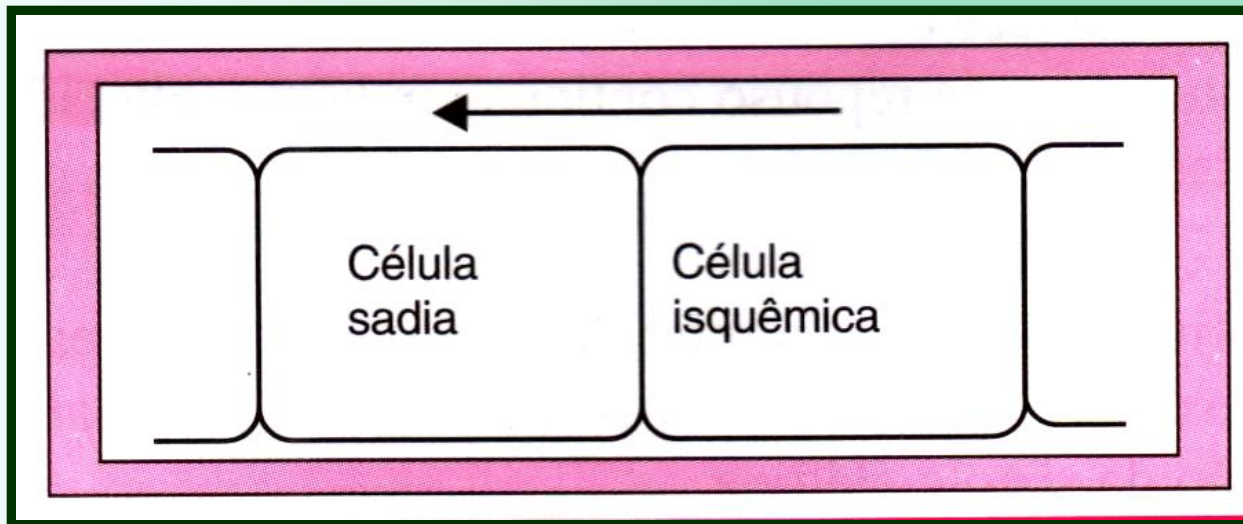
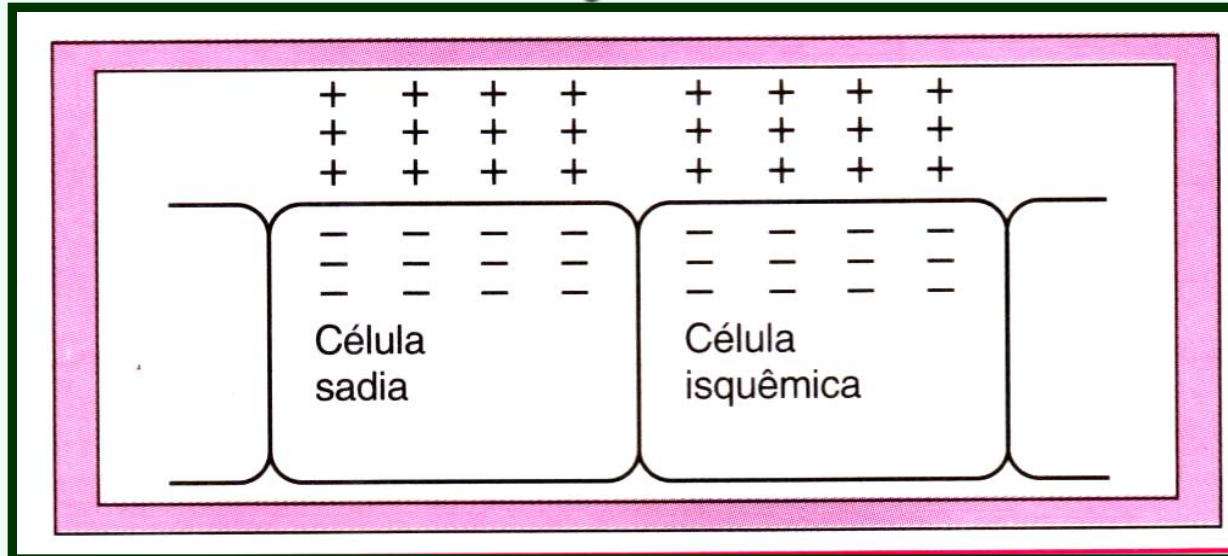
Isquemia
subendocárdica

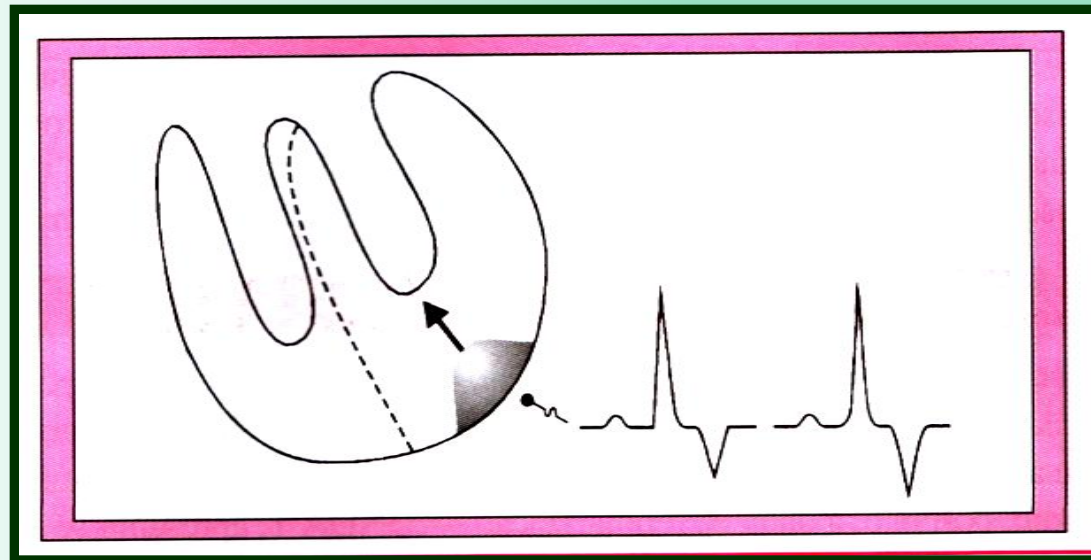
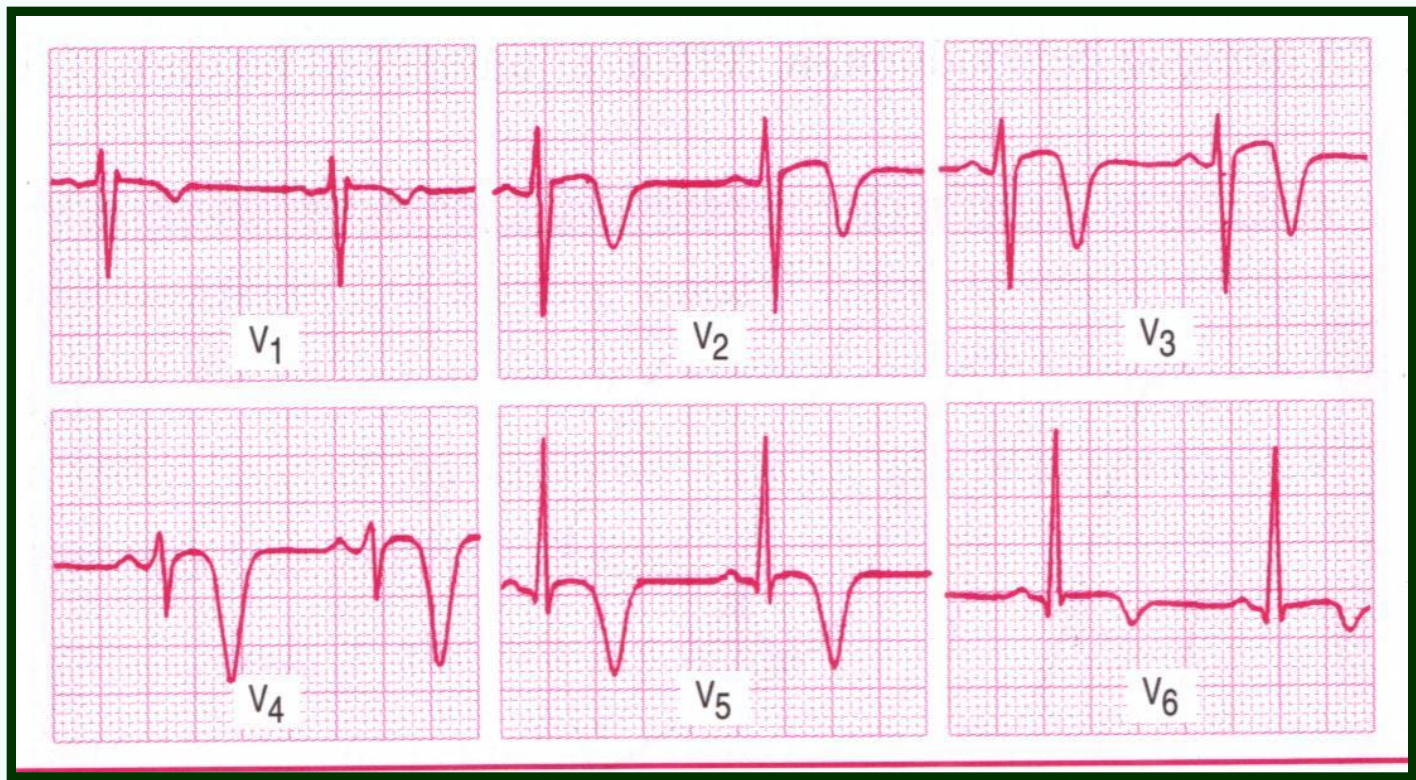


**Simetria
da onda T**

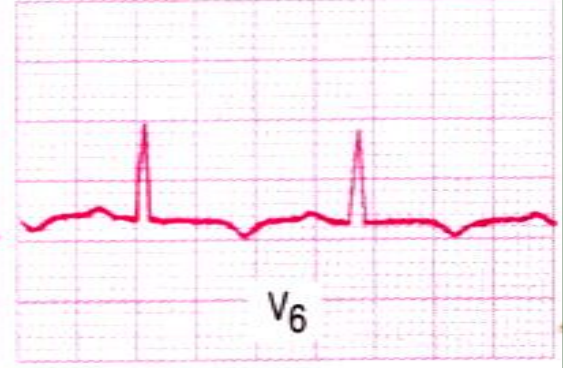
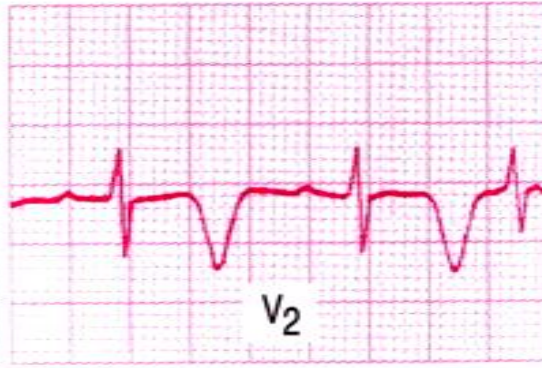
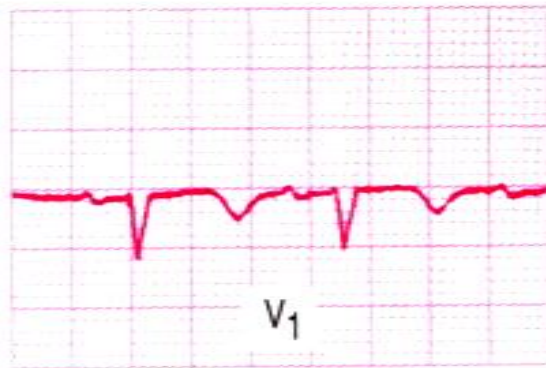


Isquemia

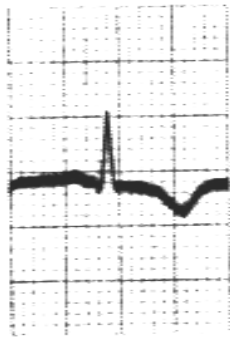




Isquemia Subepicárdica



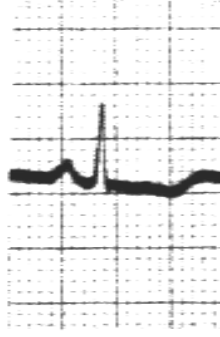
Isquemia Subepicárdica



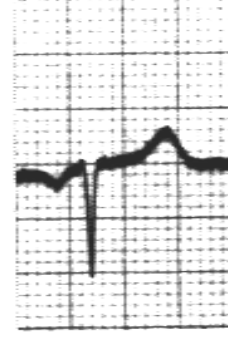
D1



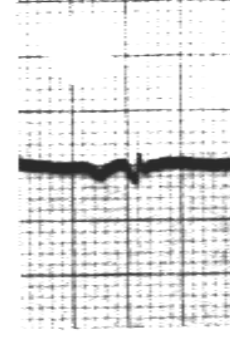
D2



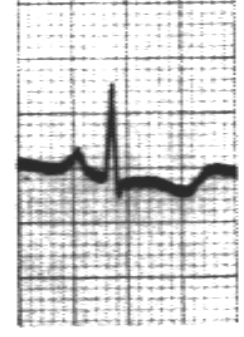
D3



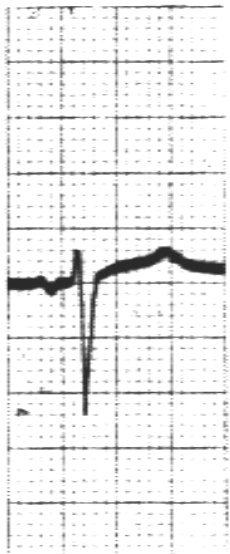
aVR



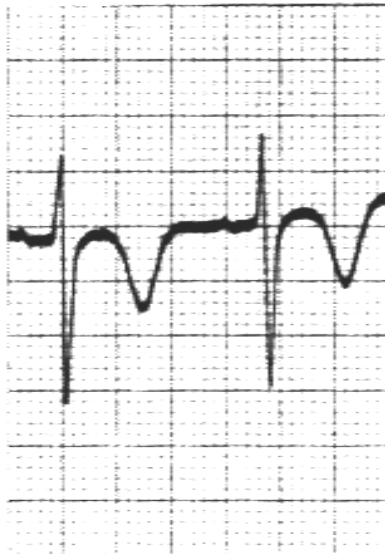
aVL



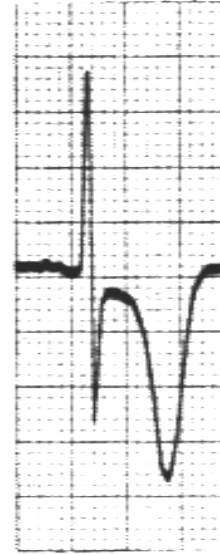
aVF



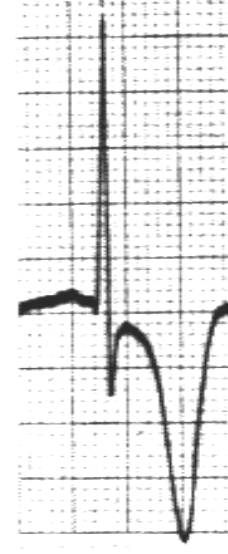
V1



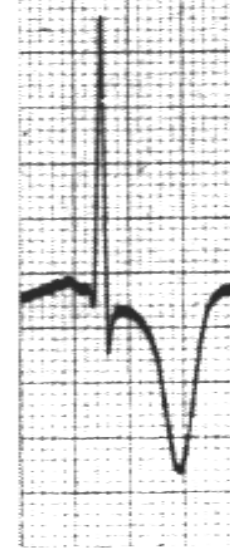
V2



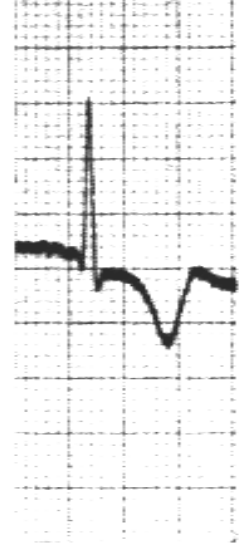
V3



V4

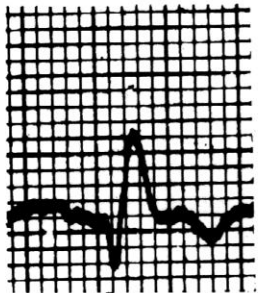


V5

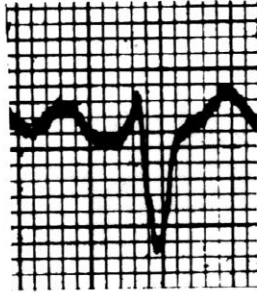


V6

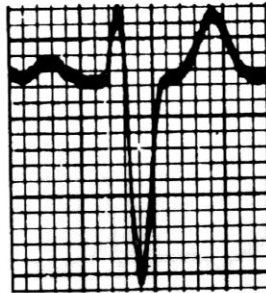
Isquemia Subepicárdica



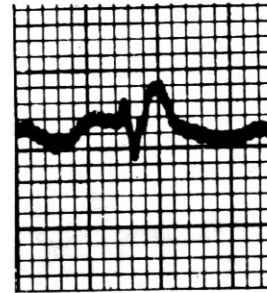
I



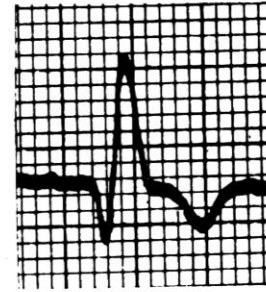
II



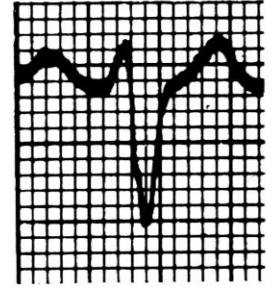
III



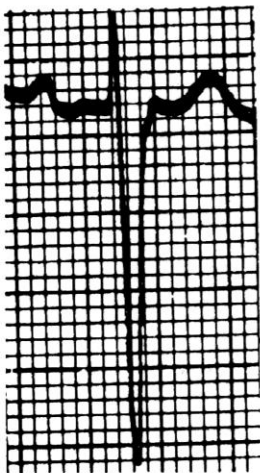
AVR



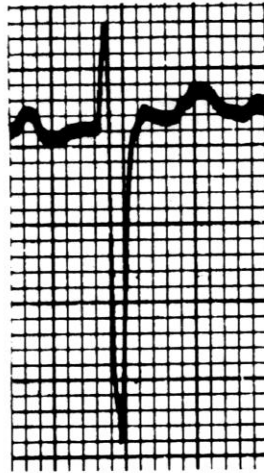
AVL



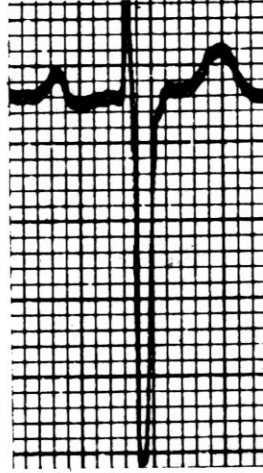
AVF



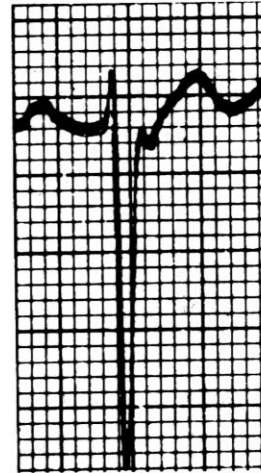
V1



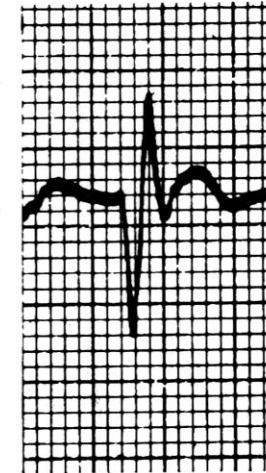
V2



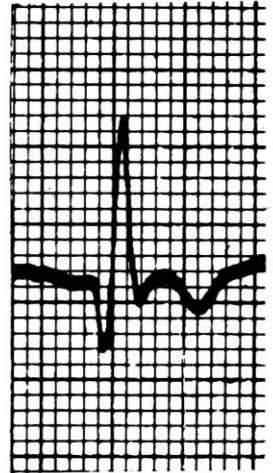
V3



V4

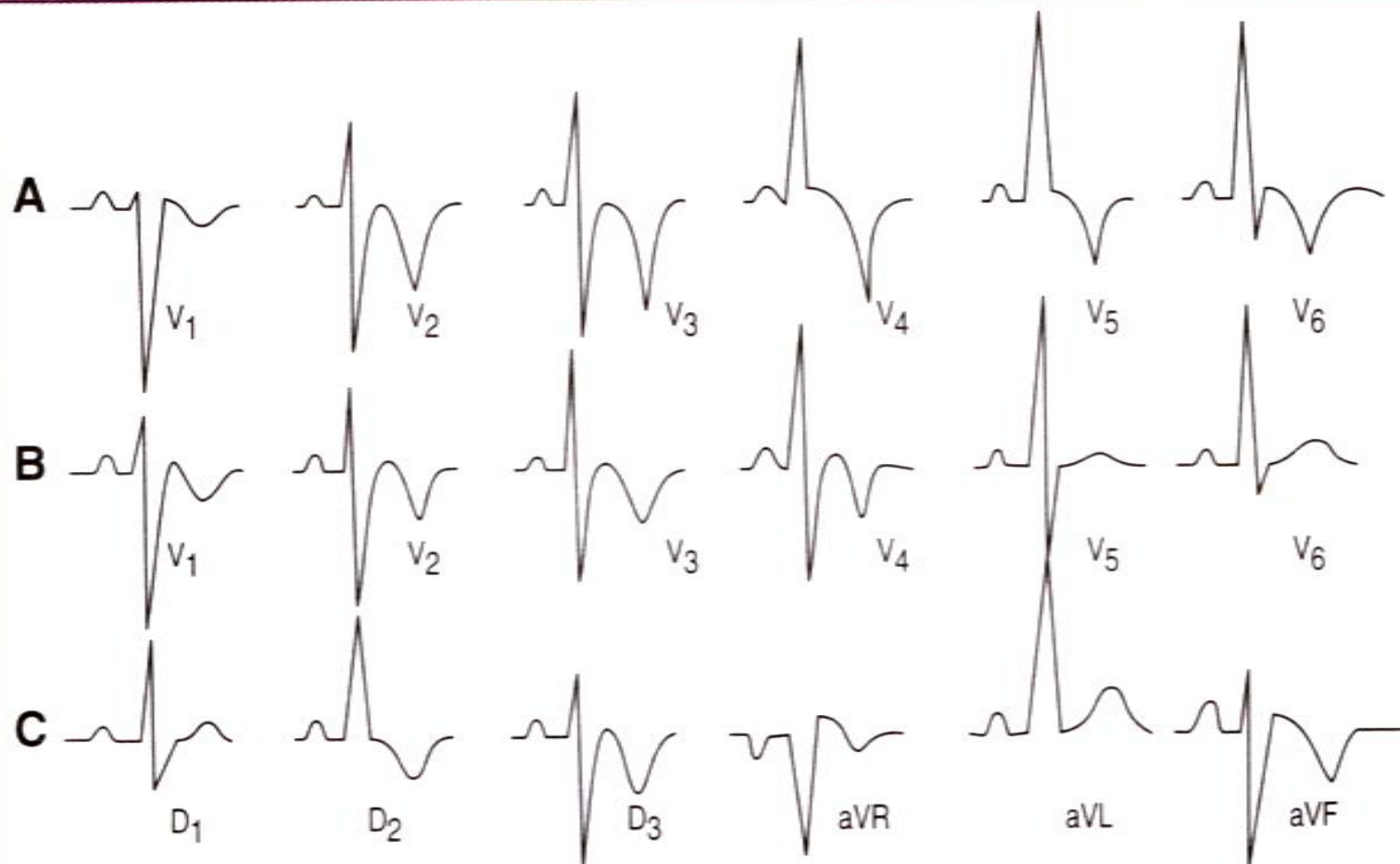


V5

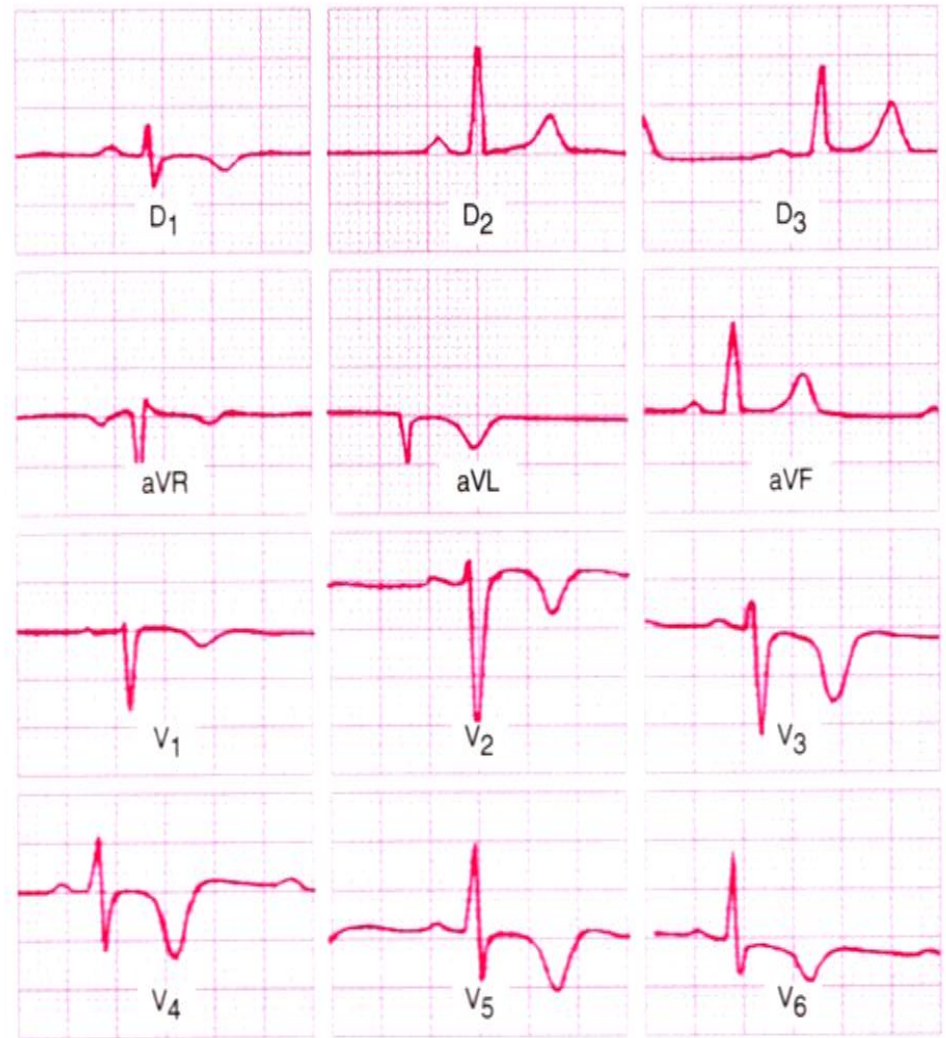
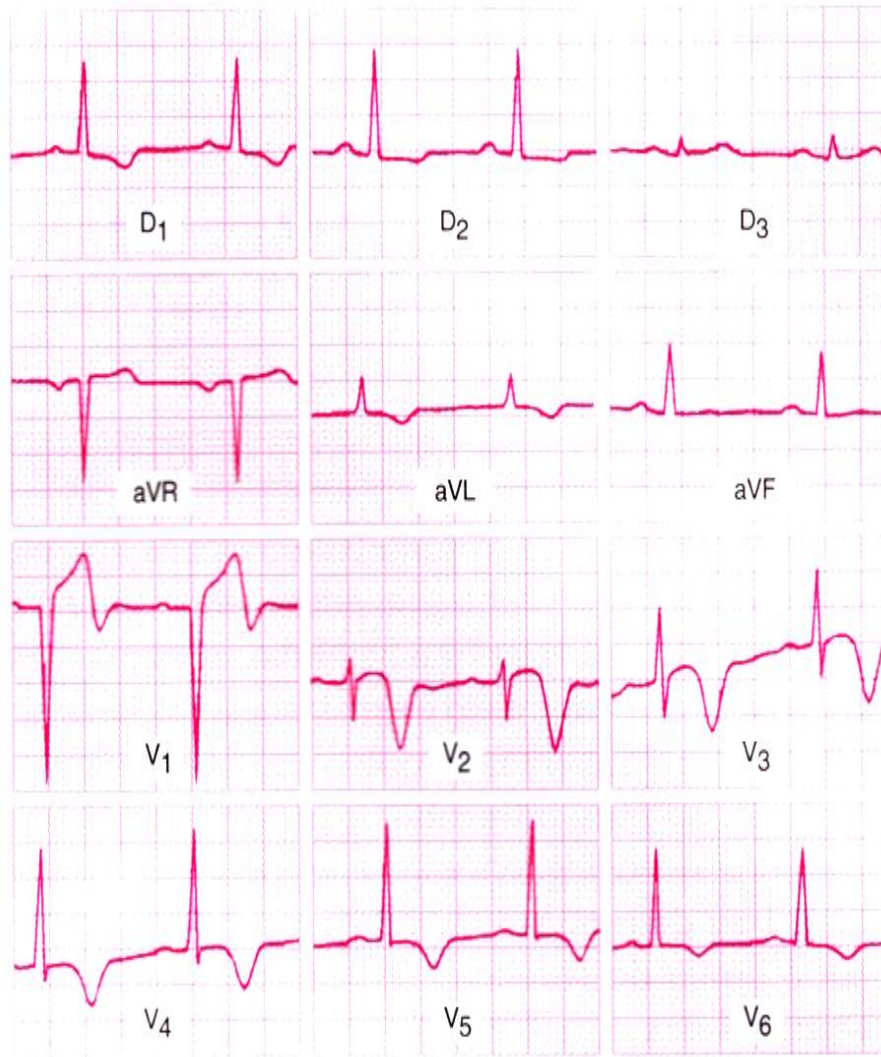


V6

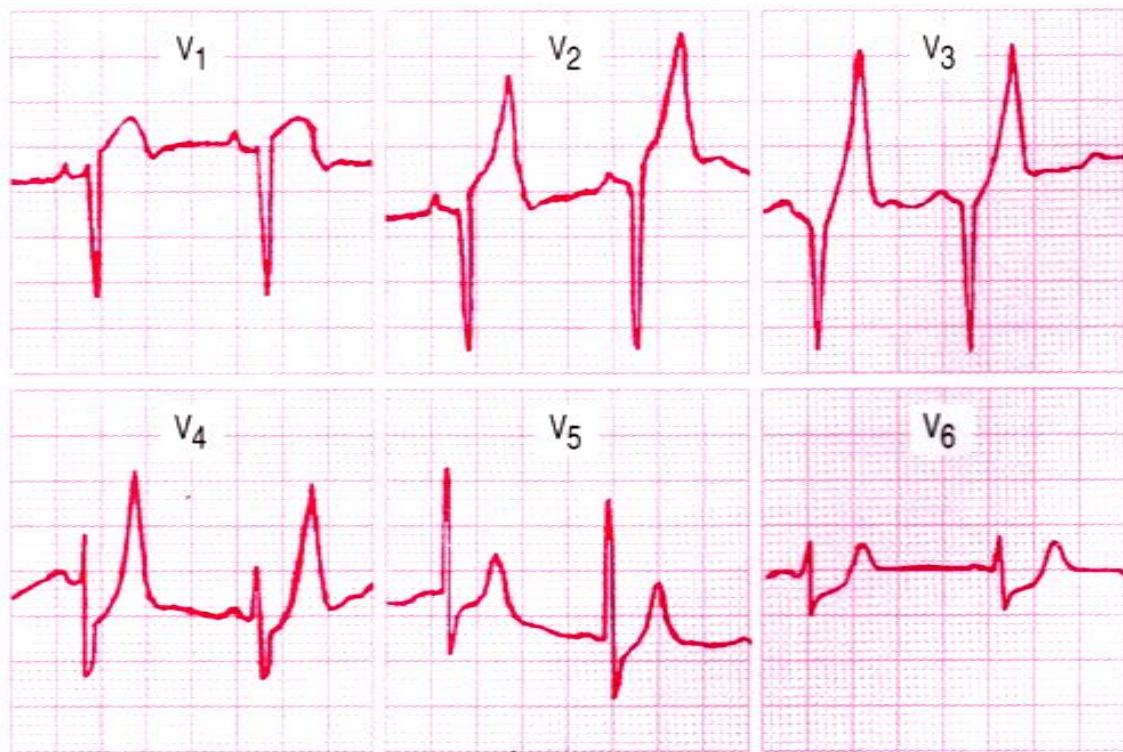
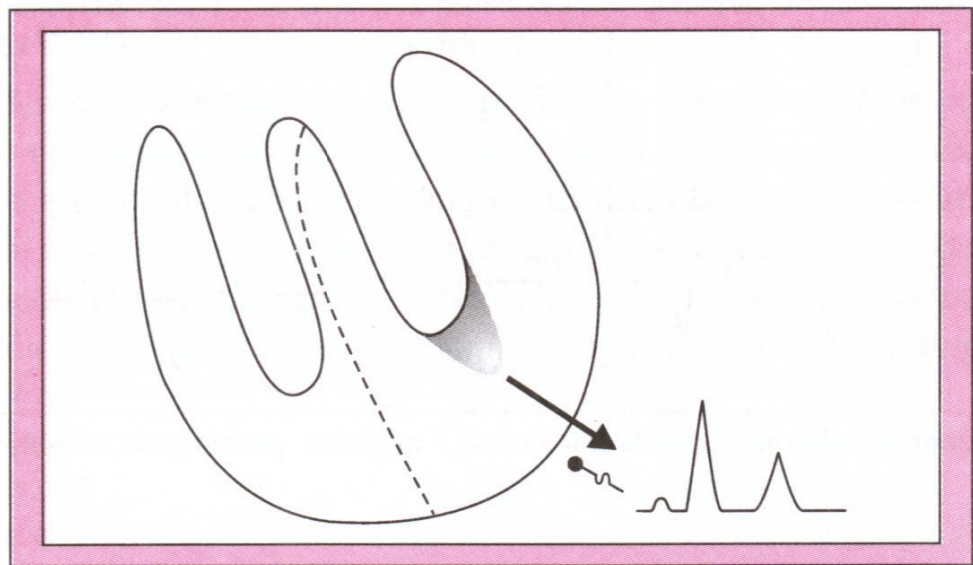
Isquemia Subepicárdica



Isquemia Subepicárdica



**Isquemia
subendocárdica**



Localização Topográfica da Isquemia

- ✓ Ântero-septal - onda T alterada em V1, V2, V3, V4
- ✓ Septal média (ou septal) - onda T alterada em V1, V2
- ✓ Septal baixa (anterior estrita) - onda T alterada em V3, V4
- ✓ Ântero-lateral (ou lateral) - onda T alterada em D1, aVL, V4-V6
- ✓ Lateral alta - onda T alterada em D1, aVL
- ✓ Anterior extensa - onda T alterada em D1, aVL, V1-V6

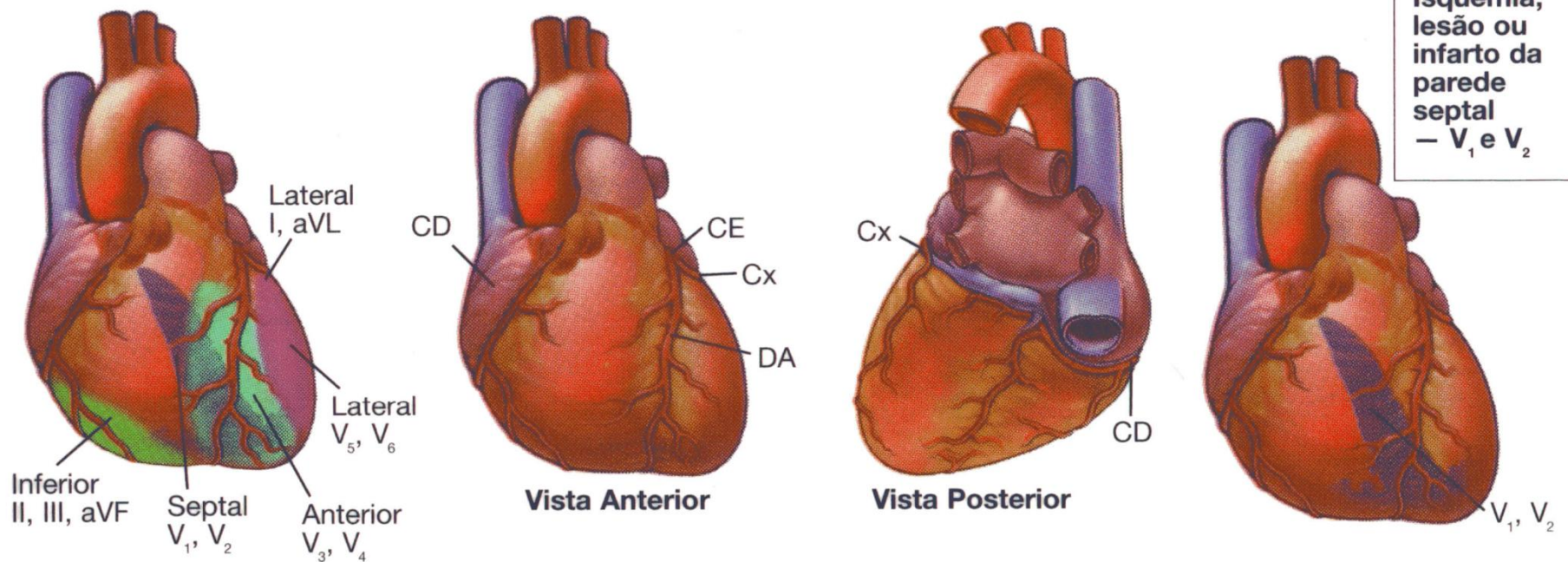


Localização Topográfica da Isquemia

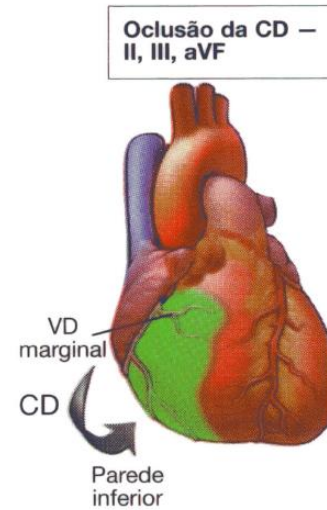
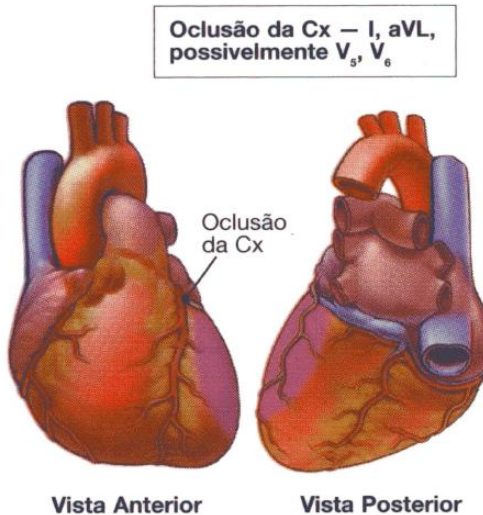
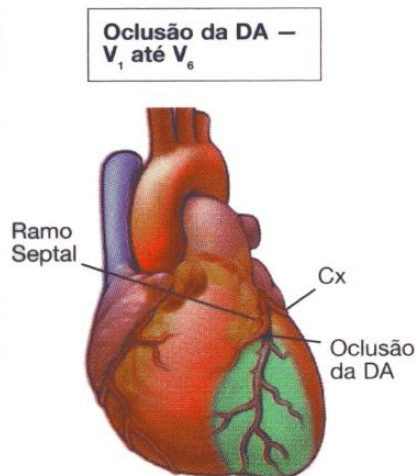
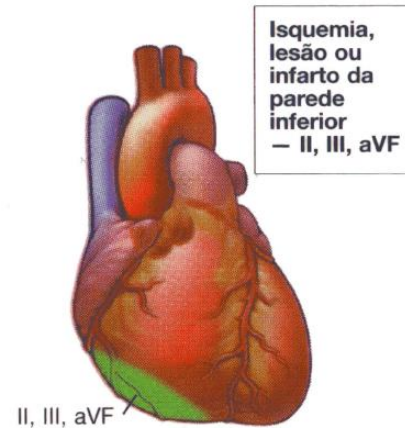
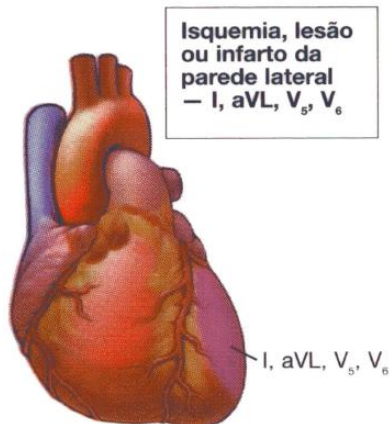
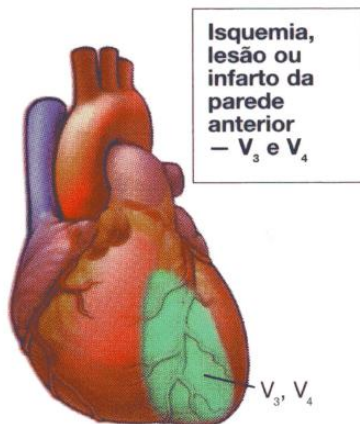
- ✓ Inferior ou diafragmática - onda T alterada D2, D3, aVF
- ✓ Dorsal ou posterior - onda T alterada em V7, V8 (espelho V1-V2)
- ✓ Septal profunda - onda T alterada em D2, D3, aVF, V1-V3



Relação entre o ECG de 12 Derivações e a Anatomia Coronariana

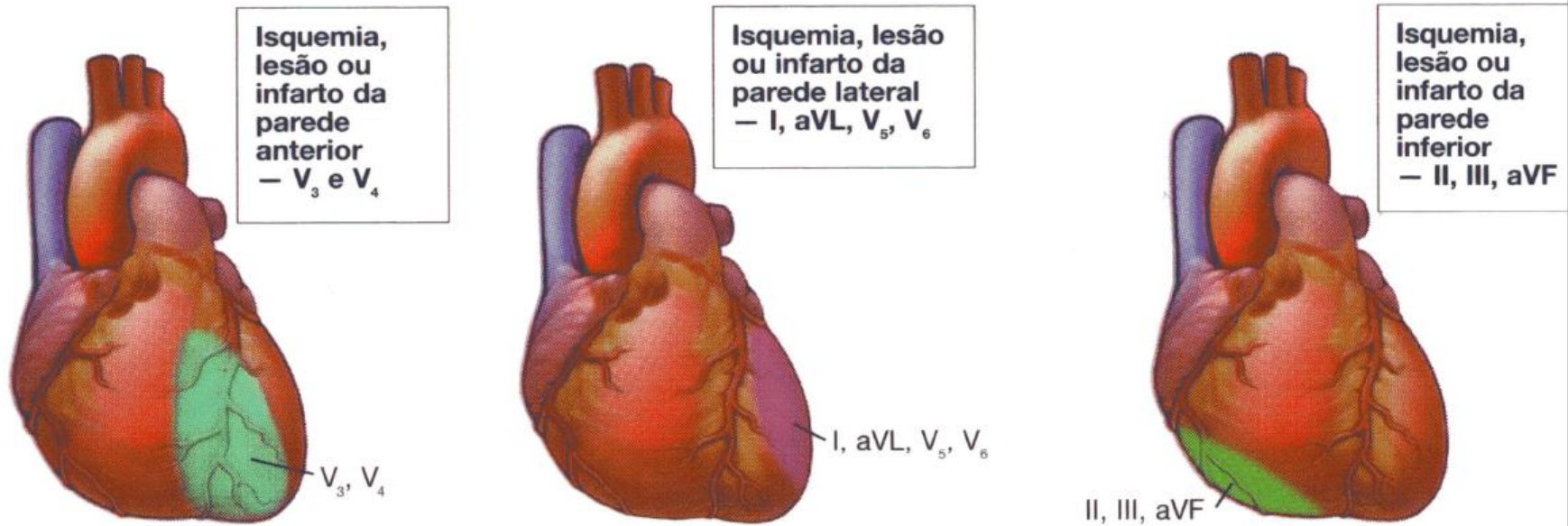


I lateral	aVR	V ₁ septal	V ₄ anterior
II inferior	aVL lateral	V ₂ septal	V ₅ lateral
III inferior	aVF inferior	V ₃ anterior	V ₆ lateral



I lateral	aVR	V_1 septal	V_4 anterior
II inferior	aVL lateral	V_2 septal	V_5 lateral
III inferior	aVF inferior	V_3 anterior	V_6 lateral

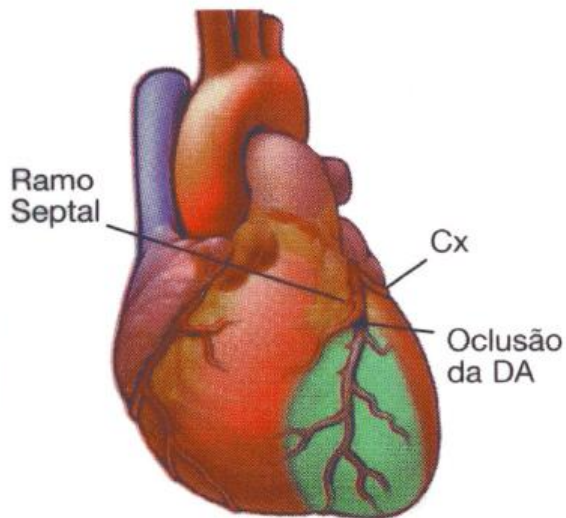
Relação entre o ECG de 12 Derivações e a Anatomia Coronariana



I lateral	aVR	V ₁ septal	V ₄ anterior
II inferior	aVL lateral	V ₂ septal	V ₅ lateral
III inferior	aVF inferior	V ₃ anterior	V ₆ lateral

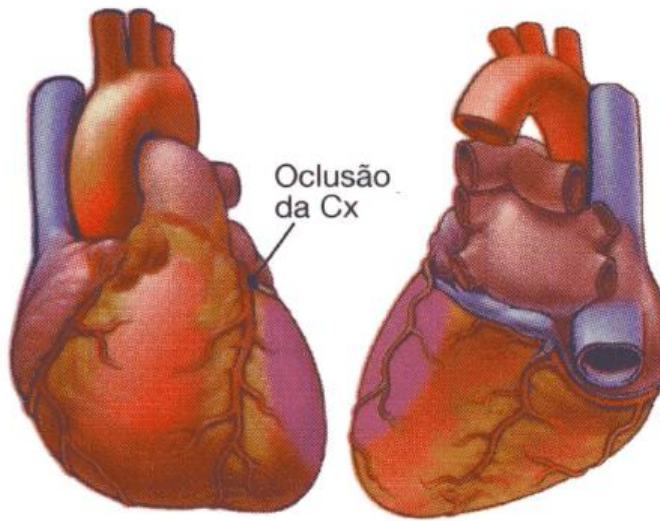
Relação entre o ECG de 12 Derivações e a Anatomia Coronariana

Oclusão da DA —
V₁ até V₆



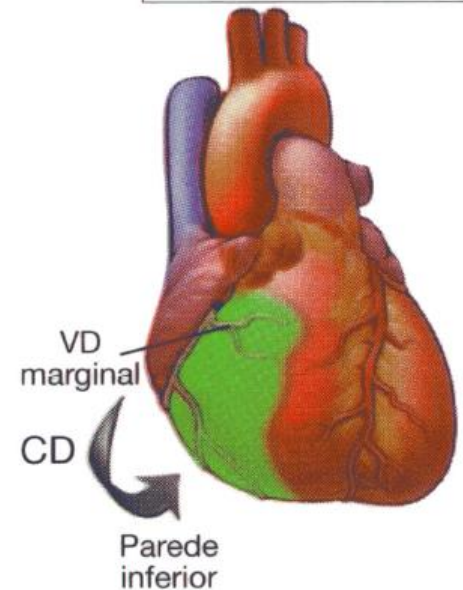
Vista Anterior

Oclusão da Cx — I, aVL,
possivelmente V₅, V₆



Vista Posterior

Oclusão da CD —
II, III, aVF



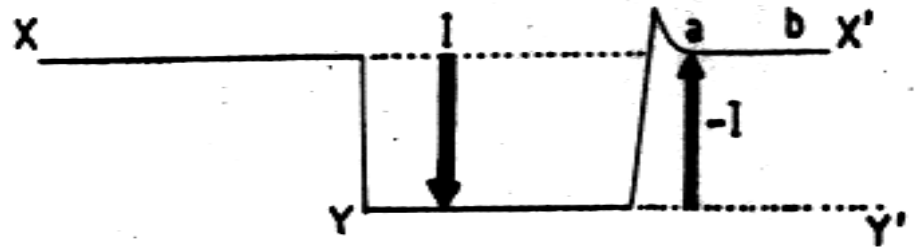
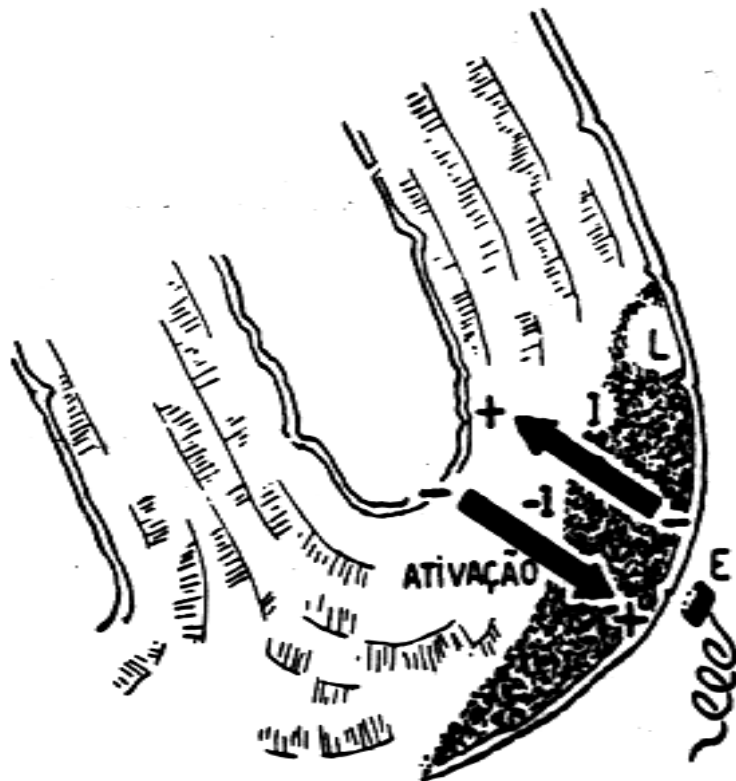
I lateral	aVR	V ₁ septal	V ₄ anterior
II inferior	aVL lateral	V ₂ septal	V ₅ lateral
III inferior	aVF inferior	V ₃ anterior	V ₆ lateral

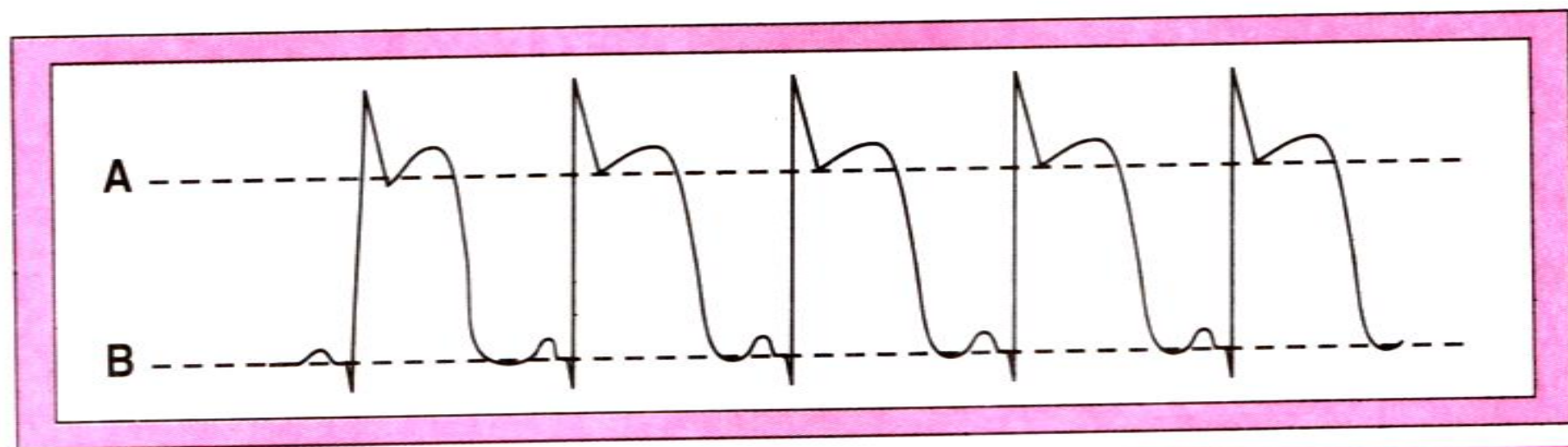
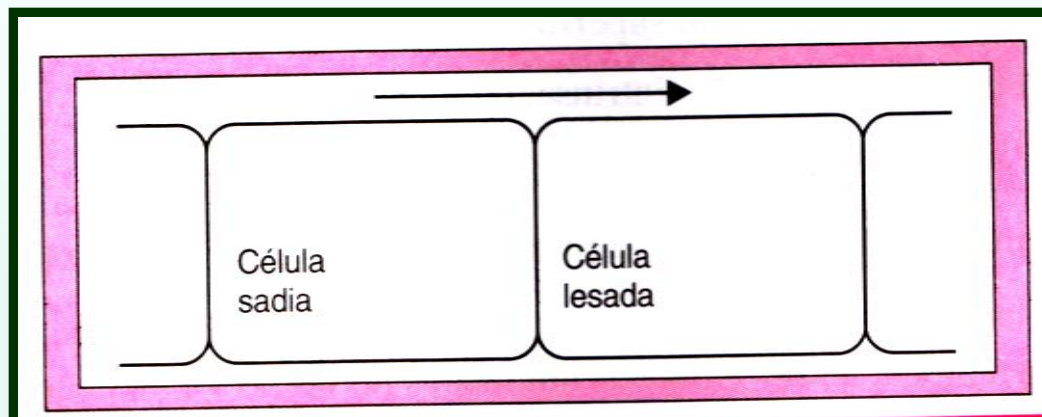


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Corrente de Lesão ou Injúria

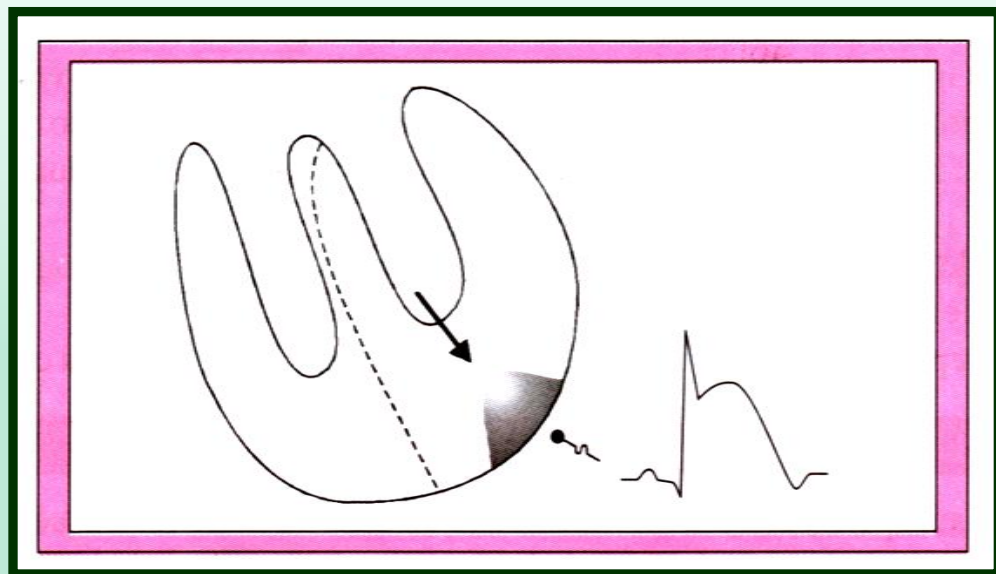
Lesão Subepicárdica



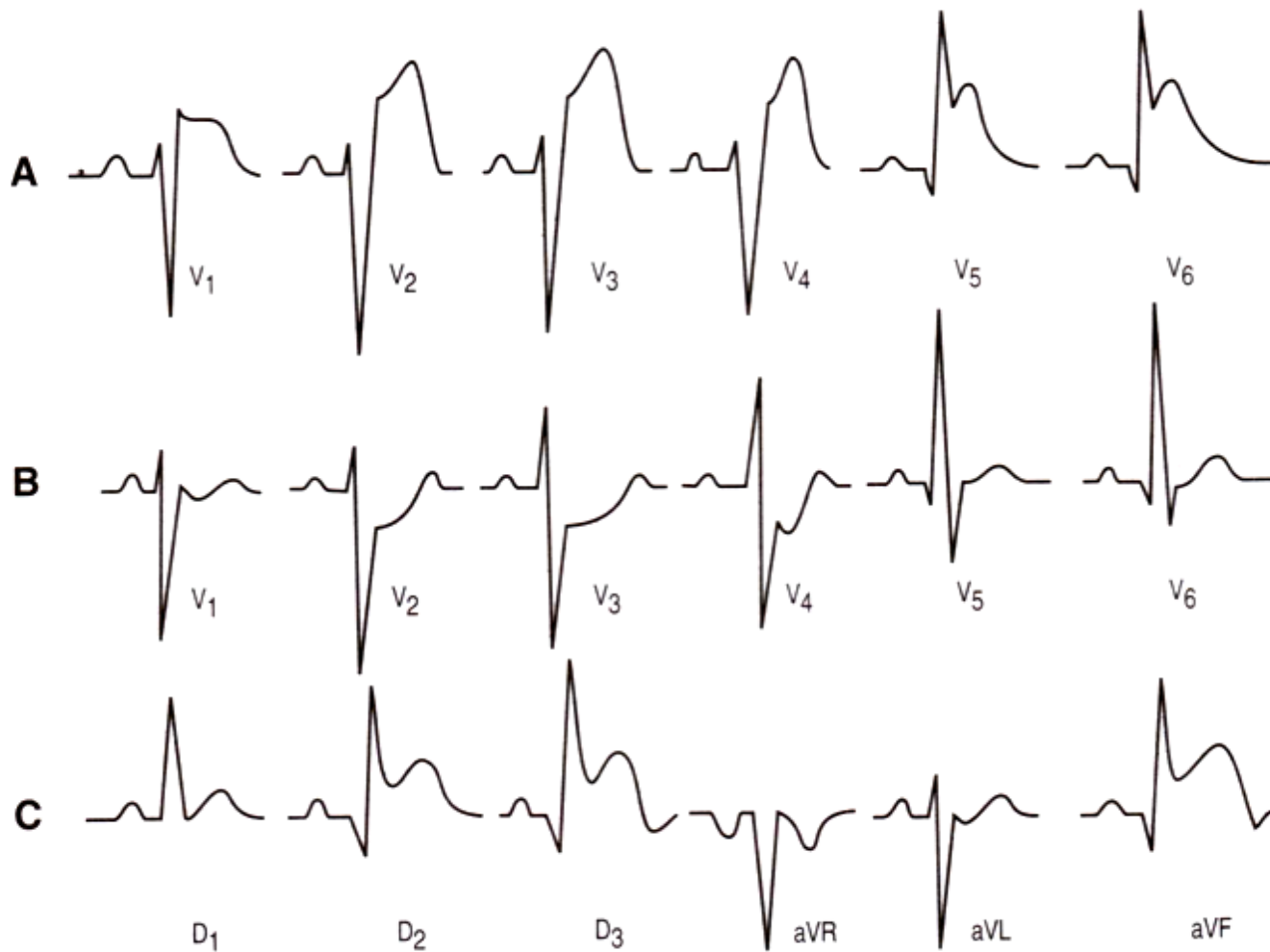


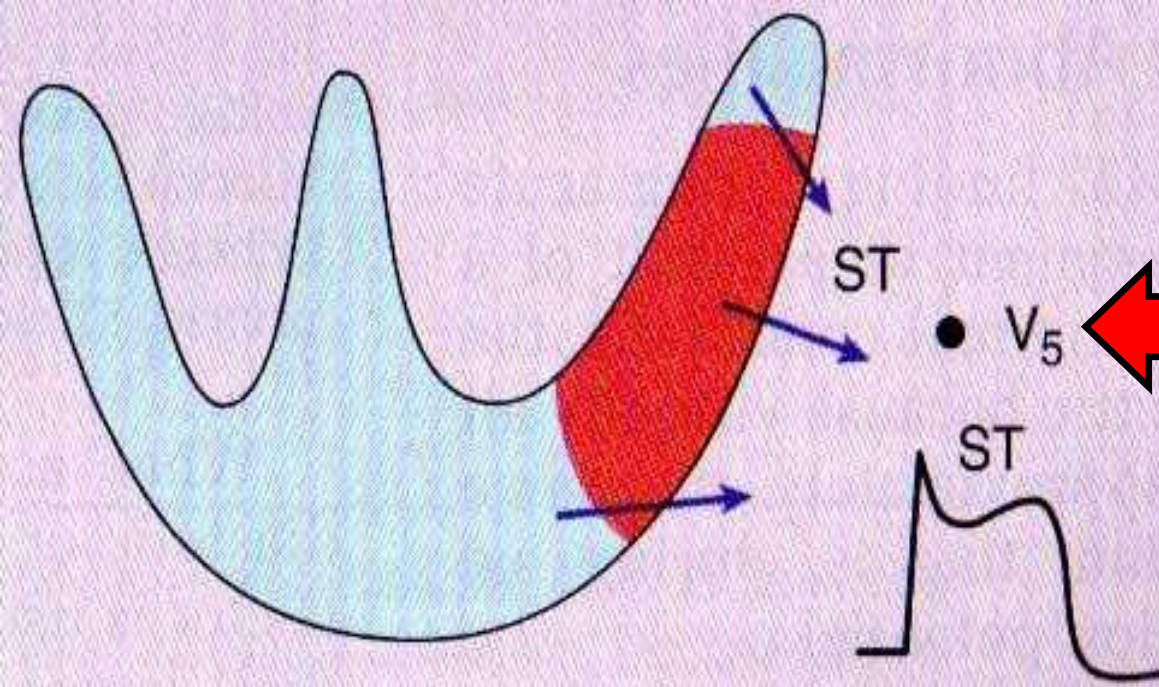
Supradesnível do ponto J e segmento ST
Segmento ST de convexidade superior
Aumento do intervalo QT

**Lesão
subepicárdica**



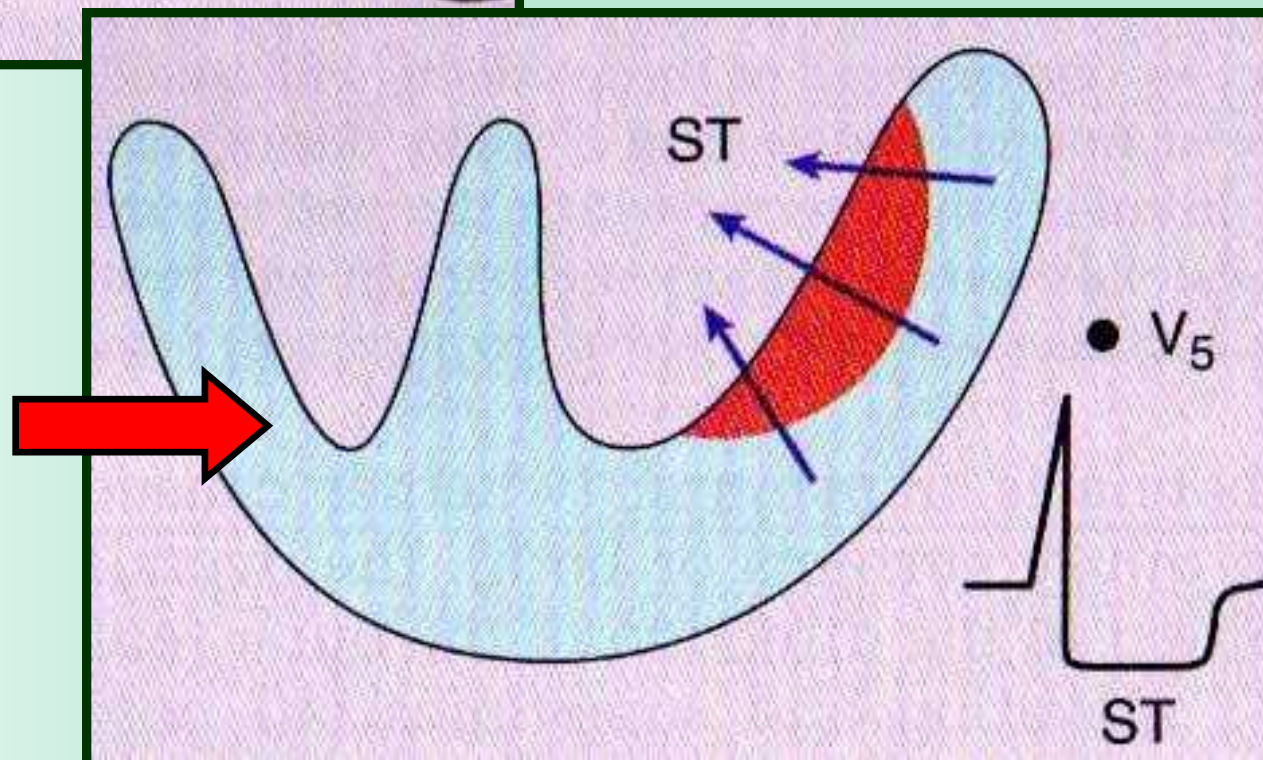
Lesão Subepicárdica



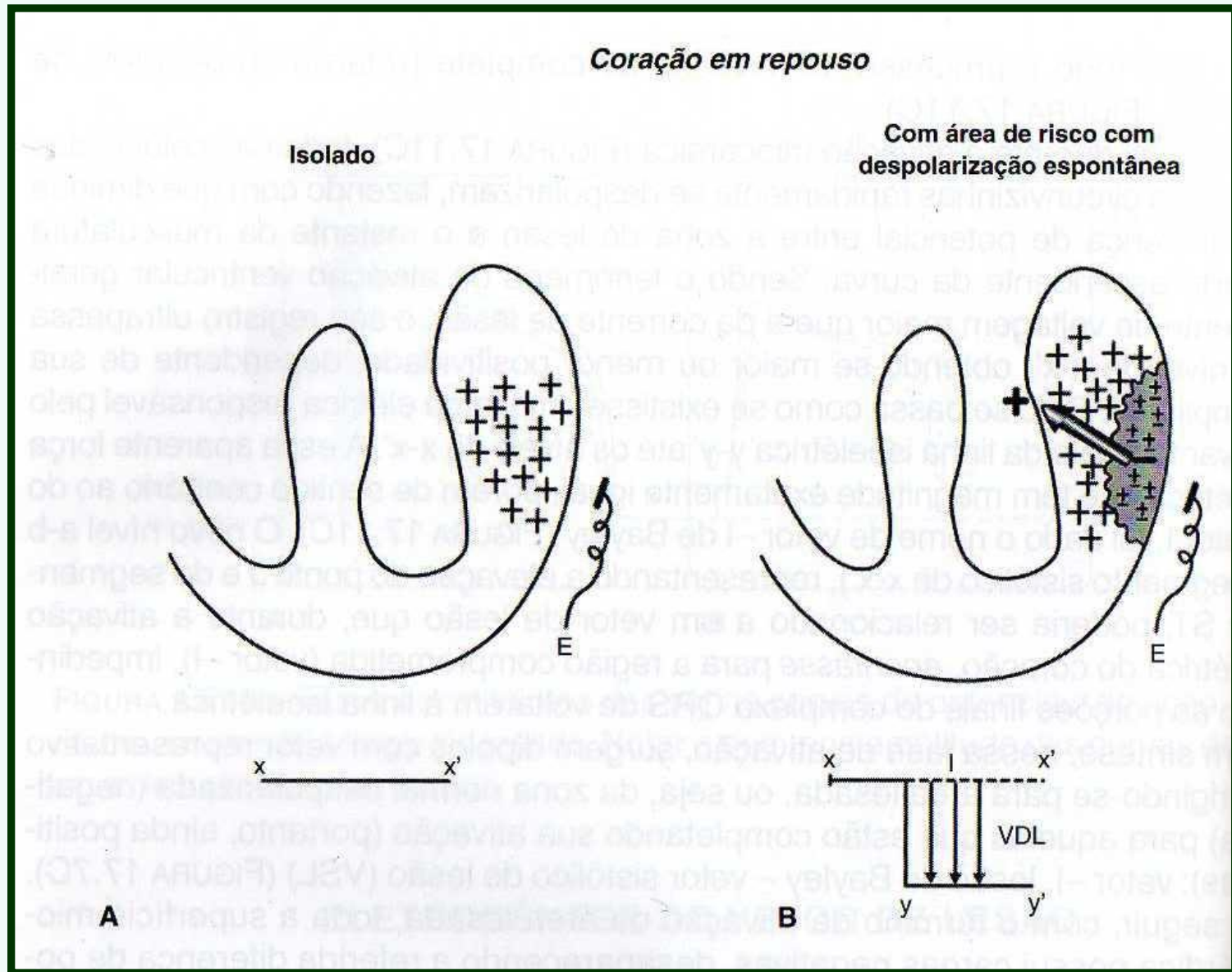


**Lesão
Transmural**

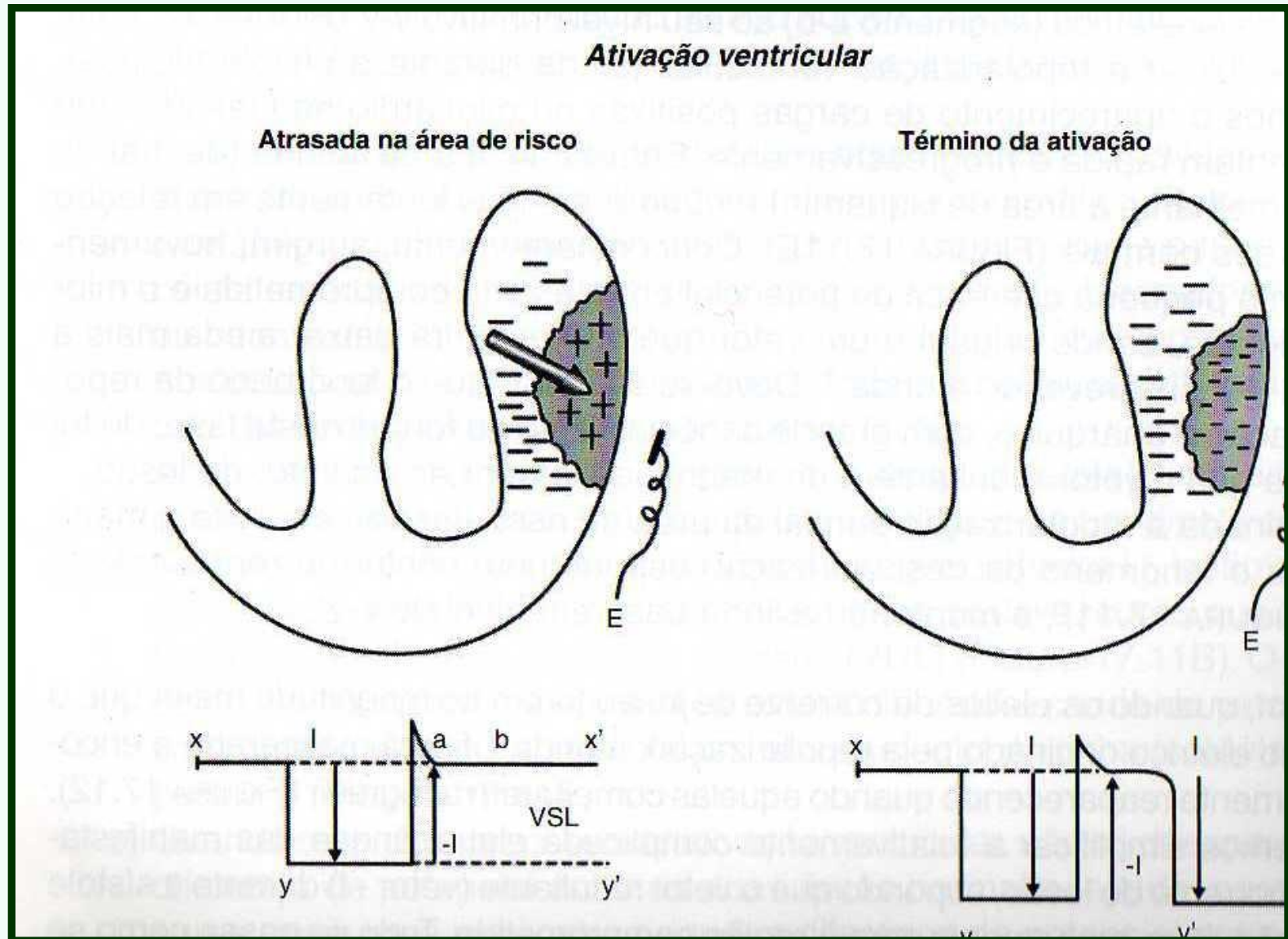
**Lesão
subendocárdica**



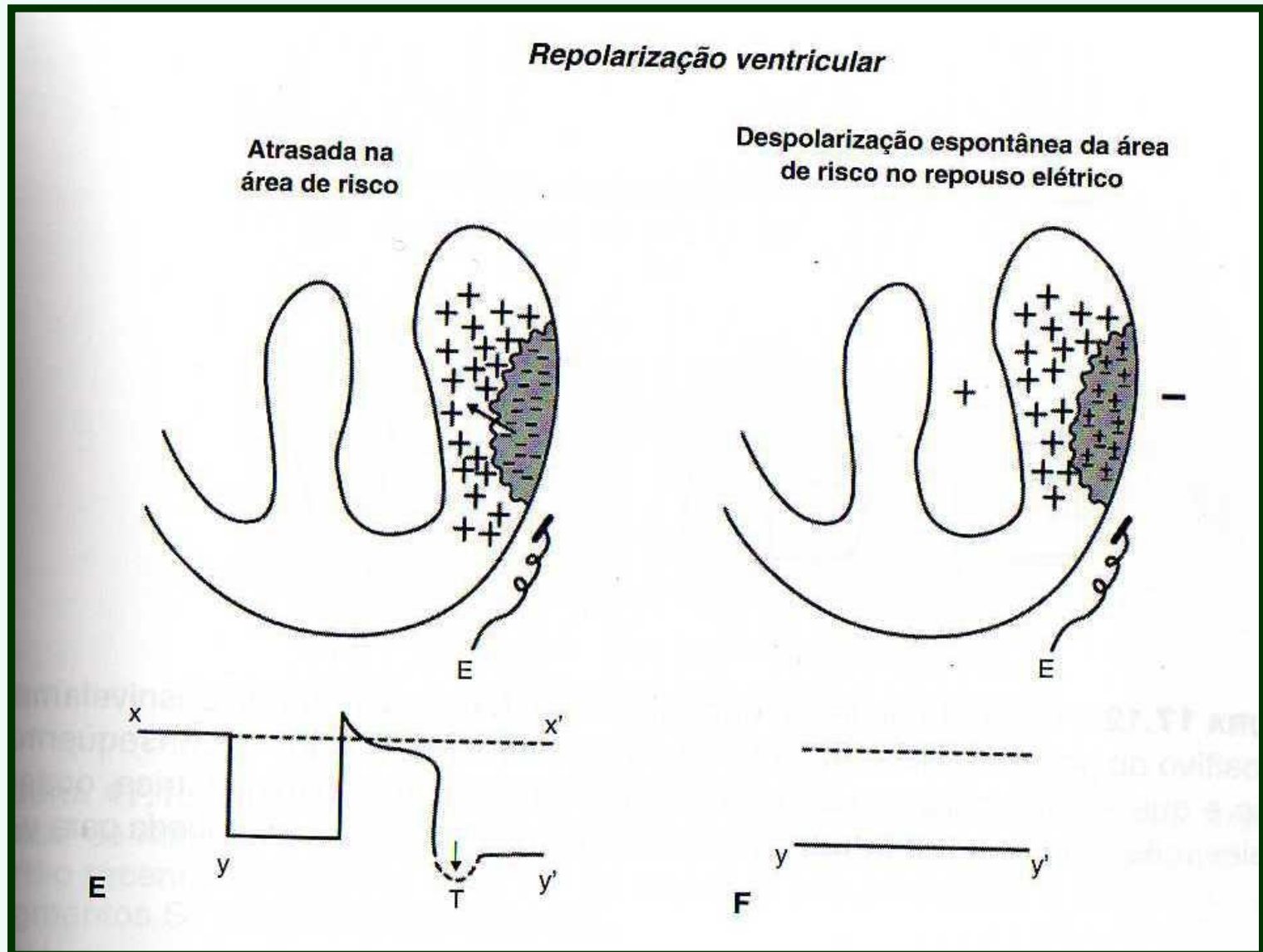
Mecanismo elétrico corrente de lesão

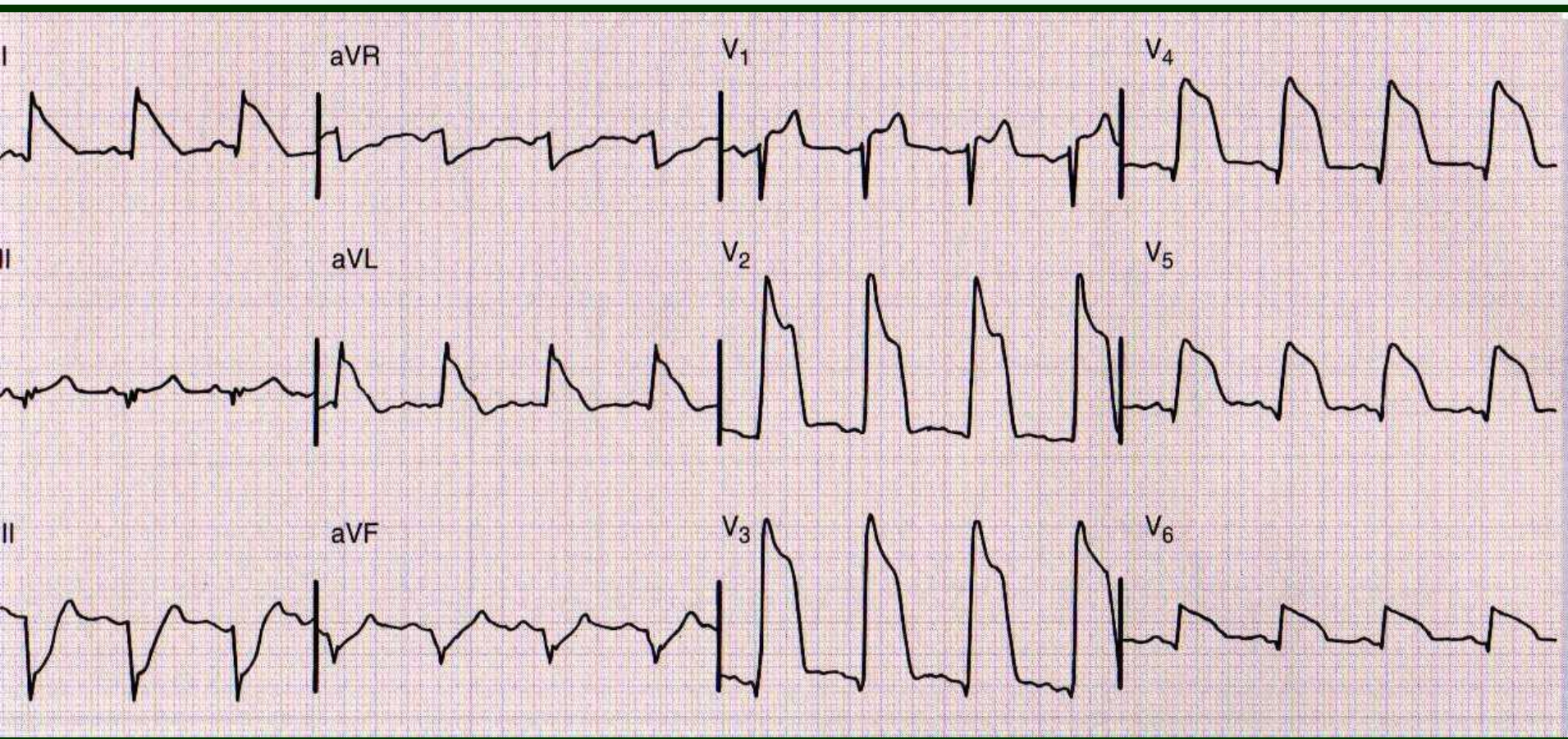


Mecanismo elétrico corrente de lesão



Mecanismo elétrico corrente de lesão





Localização Topográfica da Lesão

- ✓ Ântero-septal - Desnível do ST em V1, V2, V3, V4
- ✓ Septal média (ou septal) - Desnível do ST em V1, V2
- ✓ Septal baixa (anterior estrita) - Desnível do ST em V3, V4
- ✓ Ântero-lateral (ou lateral) - Desnível do ST em D1, aVL, V4-V6
- ✓ Lateral alta - Desnível do ST em D1, aVL
- ✓ Anterior extensa - Desnível do ST em D1, aVL, V1-V6

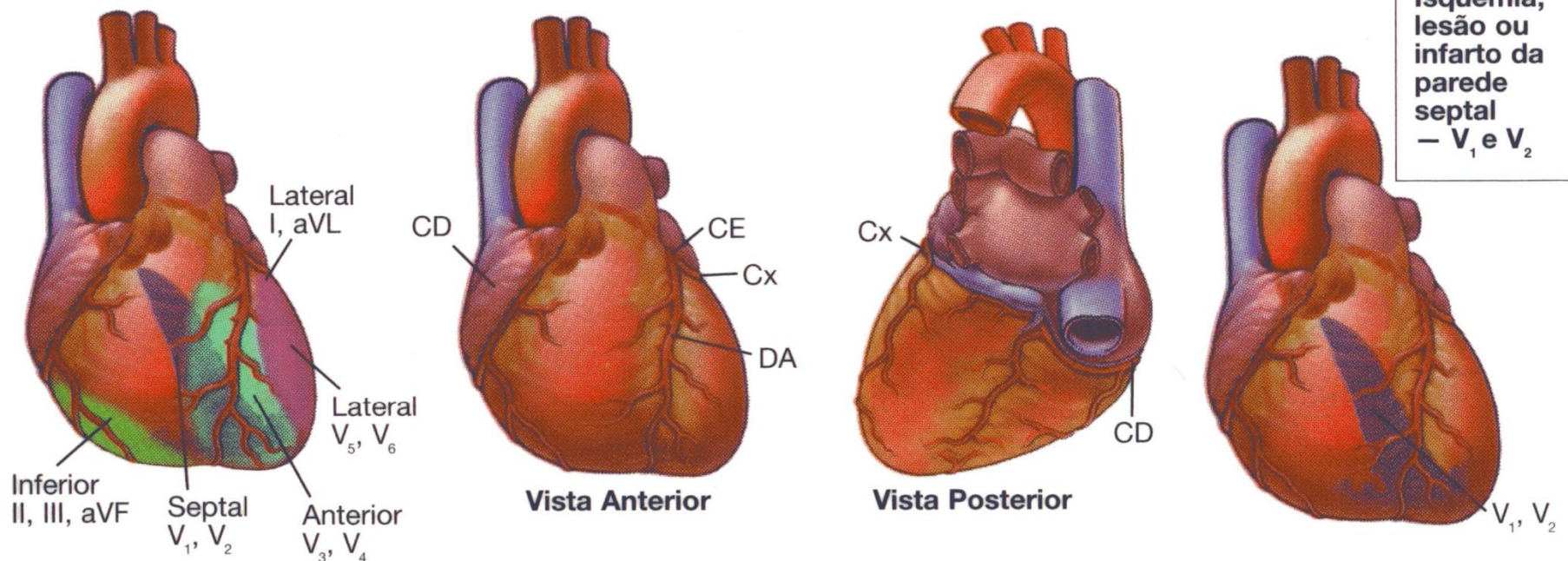


Localização Topográfica da Lesão

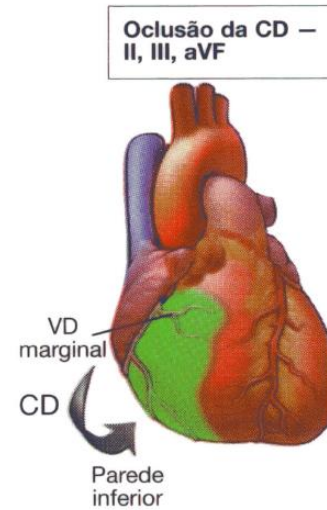
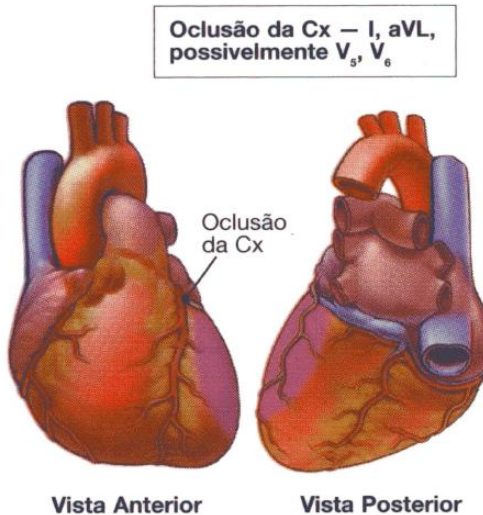
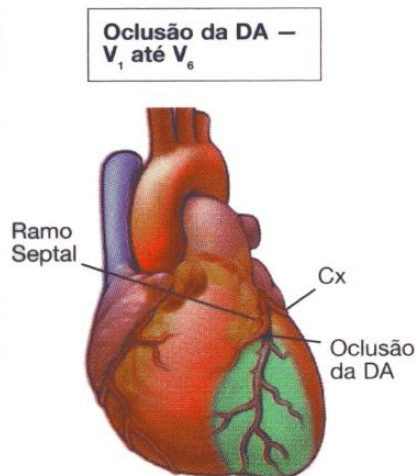
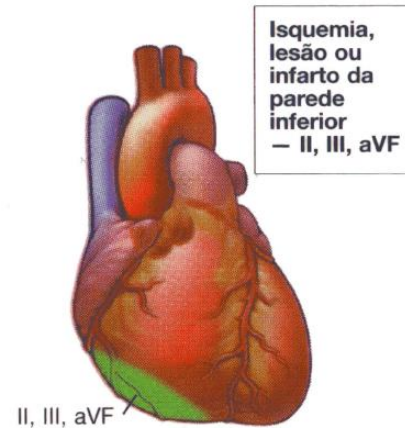
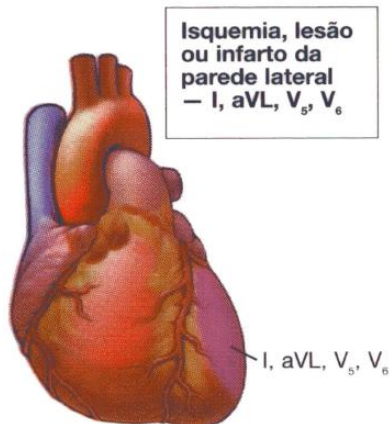
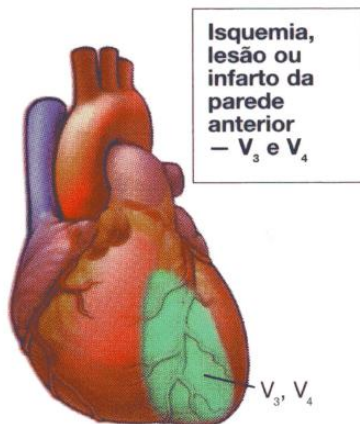
- ✓ Inferior ou diafragmática - Desnível do ST em D2, D3, aVF
- ✓ Dorsal ou posterior - Desnível do ST em V7, V8 (espelho V1-V2)
- ✓ Septal profunda - Desnível do ST em D2, D3, aVF, V1-V3



Relação entre o ECG de 12 Derivações e a Anatomia Coronariana

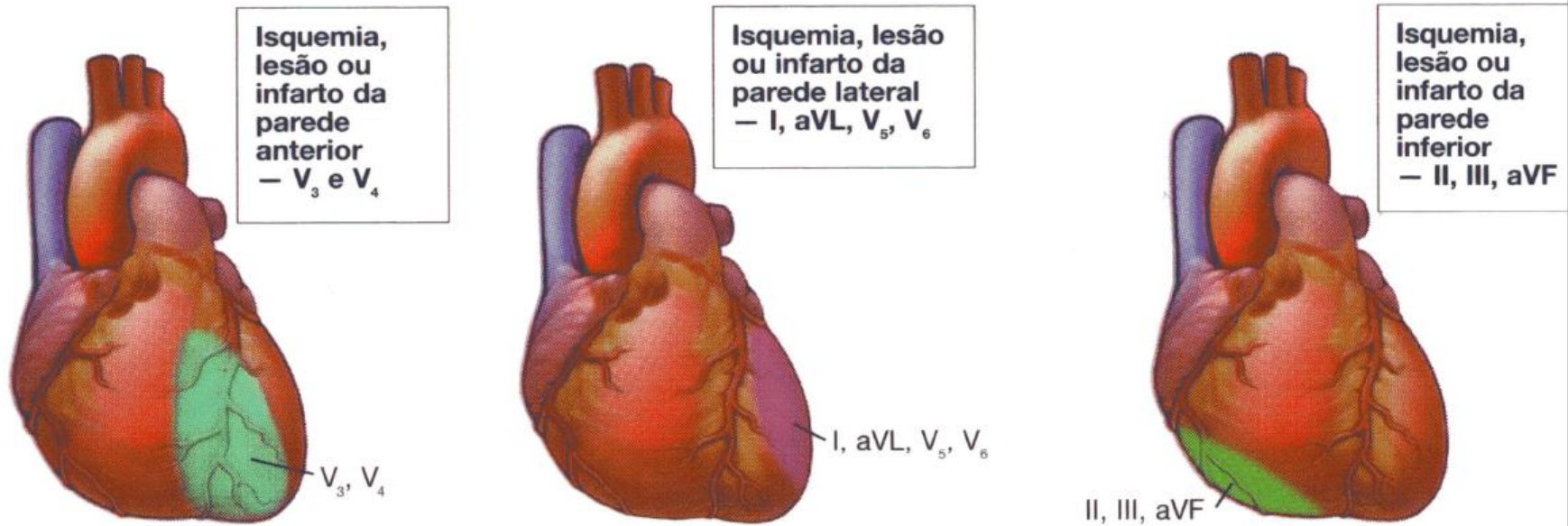


I lateral	aVR	V_1 septal	V_4 anterior
II inferior	aVL lateral	V_2 septal	V_5 lateral
III inferior	aVF inferior	V_3 anterior	V_6 lateral



I lateral	aVR	V ₁ septal	V ₄ anterior
II inferior	aVL lateral	V ₂ septal	V ₅ lateral
III inferior	aVF inferior	V ₃ anterior	V ₆ lateral

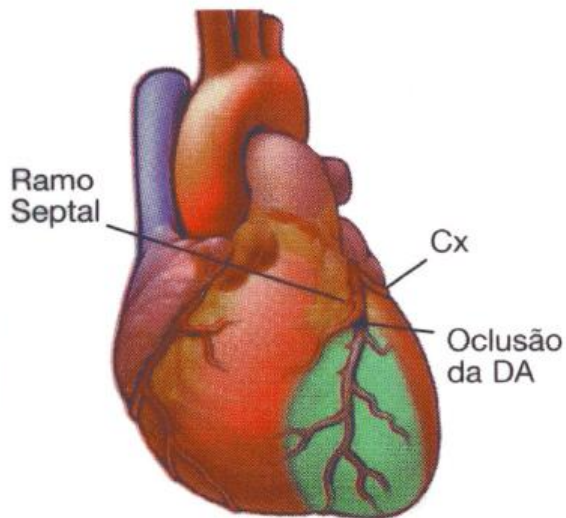
Relação entre o ECG de 12 Derivações e a Anatomia Coronariana



I lateral	aVR	V ₁ septal	V ₄ anterior
II inferior	aVL lateral	V ₂ septal	V ₅ lateral
III inferior	aVF inferior	V ₃ anterior	V ₆ lateral

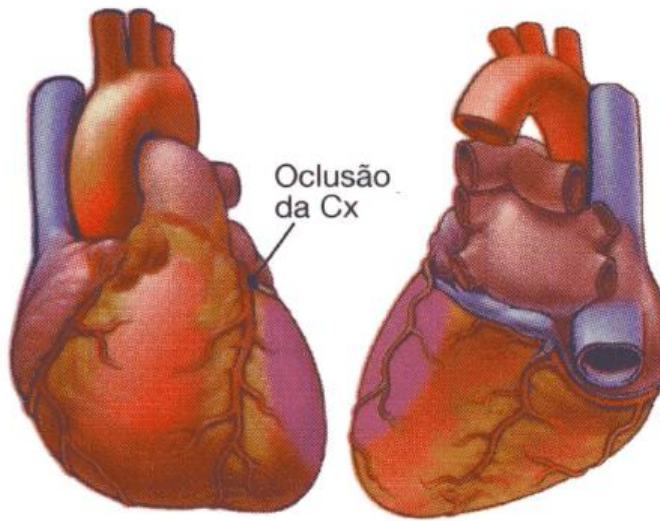
Relação entre o ECG de 12 Derivações e a Anatomia Coronariana

Oclusão da DA —
V₁ até V₆



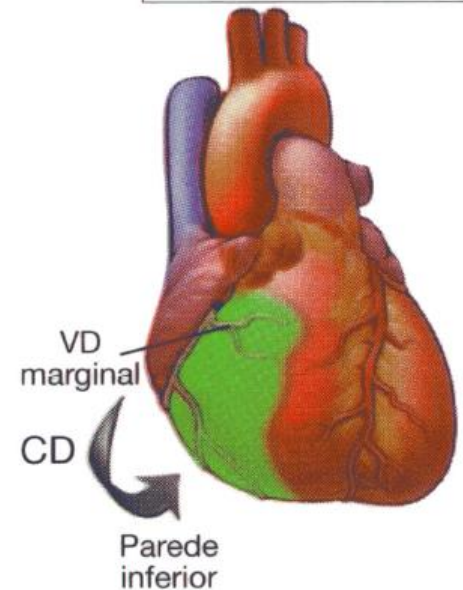
Vista Anterior

Oclusão da Cx — I, aVL,
possivelmente V₅, V₆

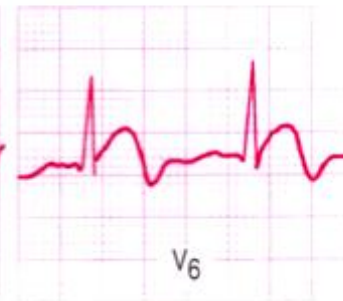
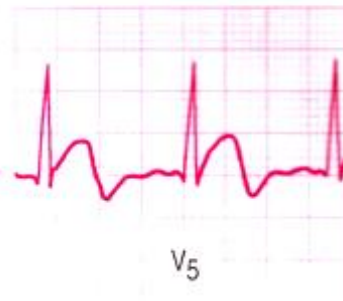
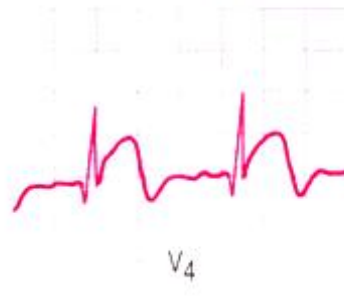
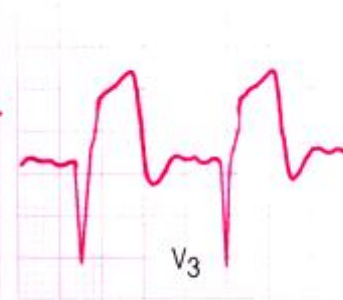
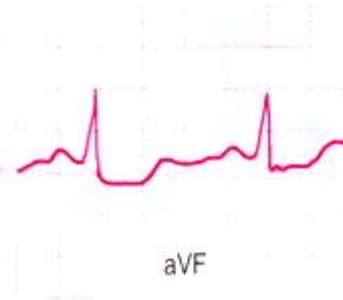
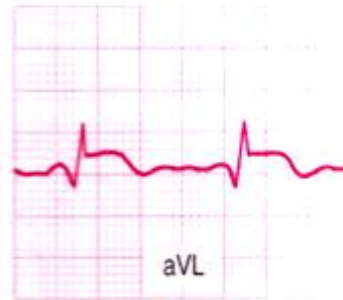
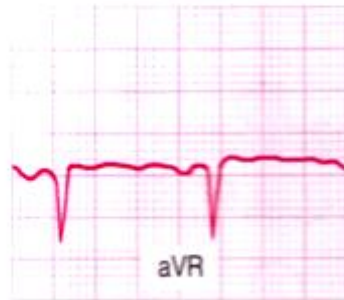
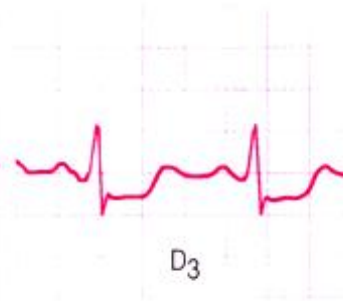
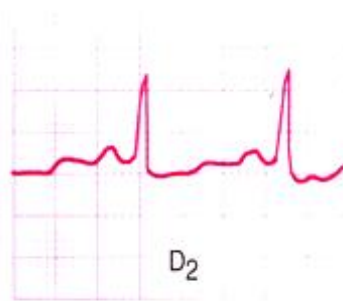
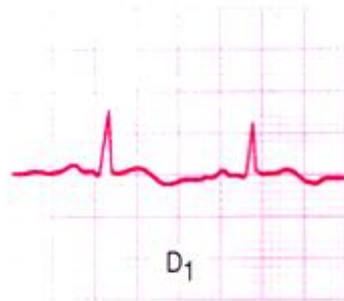


Vista Posterior

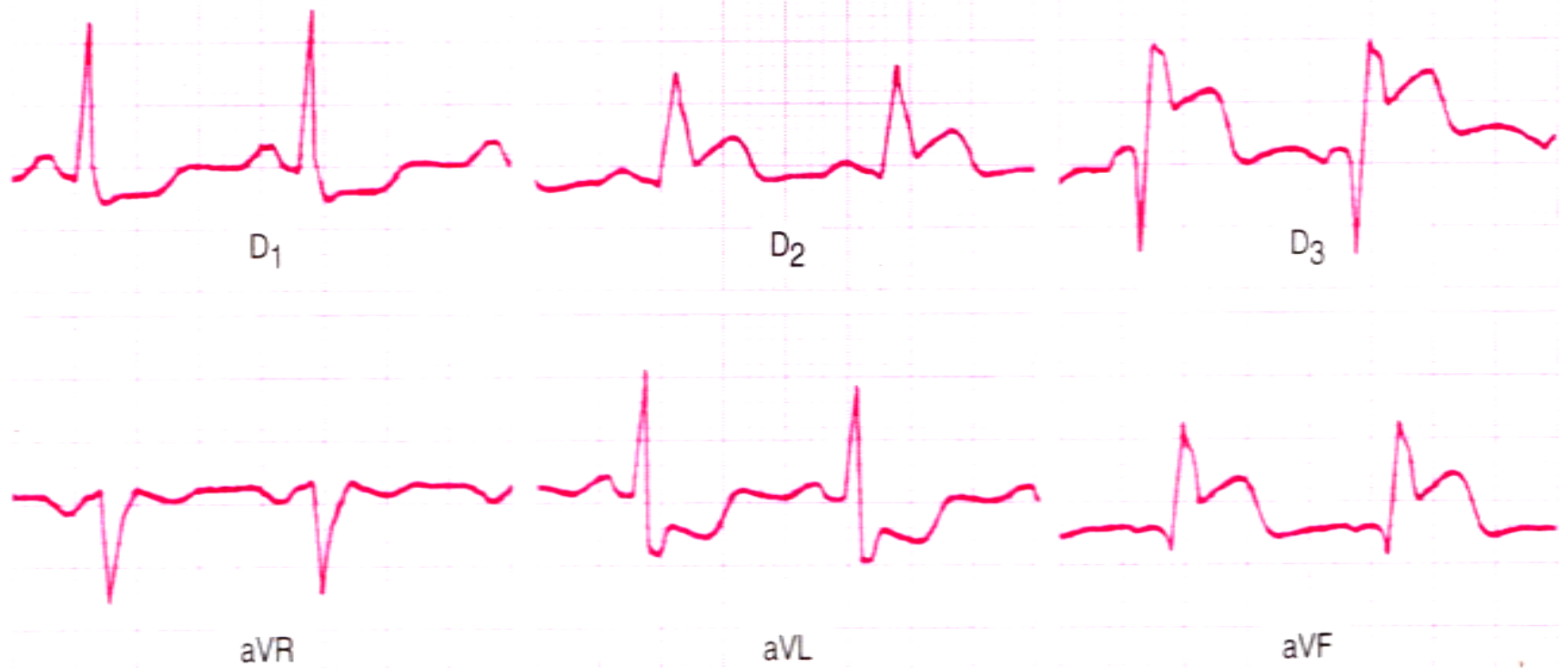
Oclusão da CD —
II, III, aVF



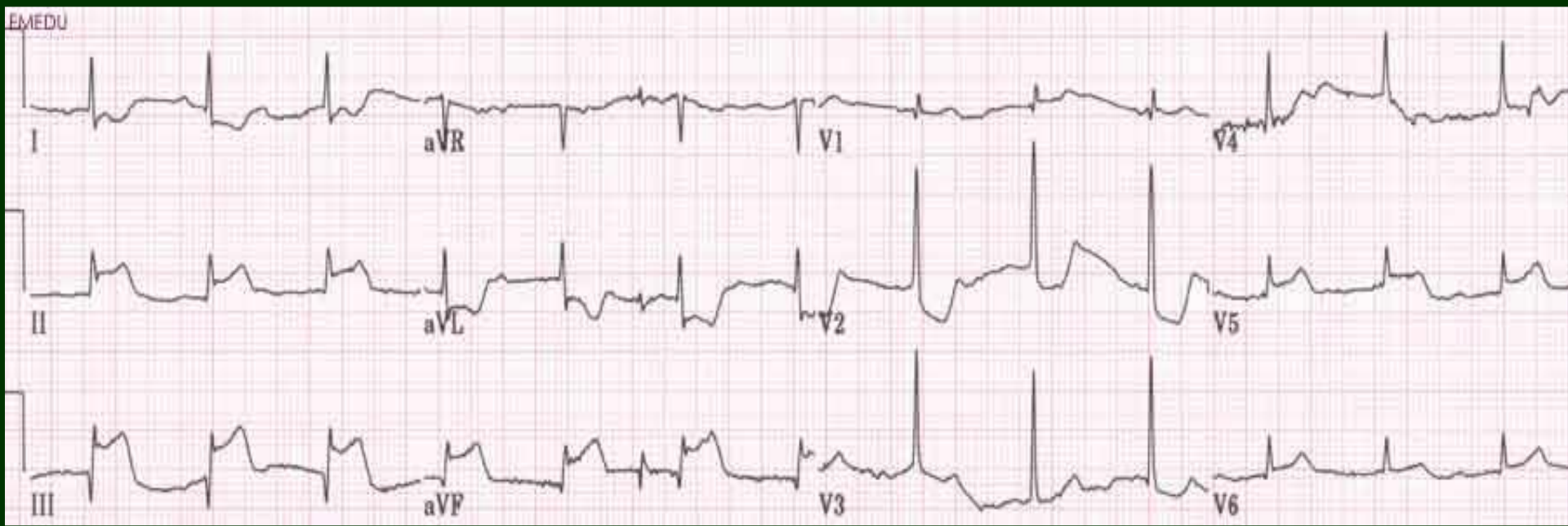
I lateral	aVR	V ₁ septal	V ₄ anterior
II inferior	aVL lateral	V ₂ septal	V ₅ lateral
III inferior	aVF inferior	V ₃ anterior	V ₆ lateral



Lesão Subepicárdica

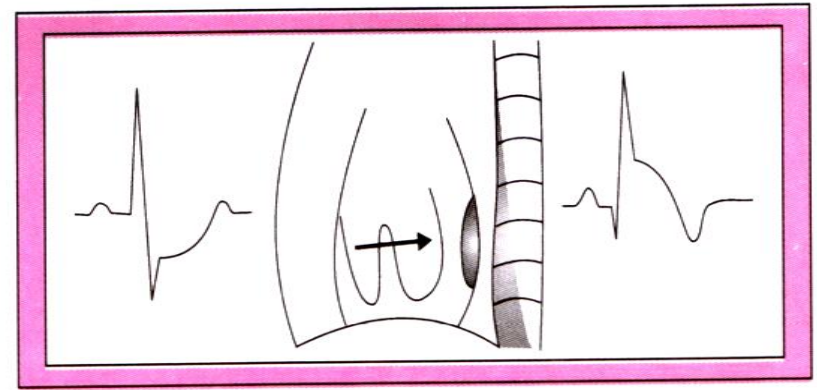


Lesão Subepicárdica

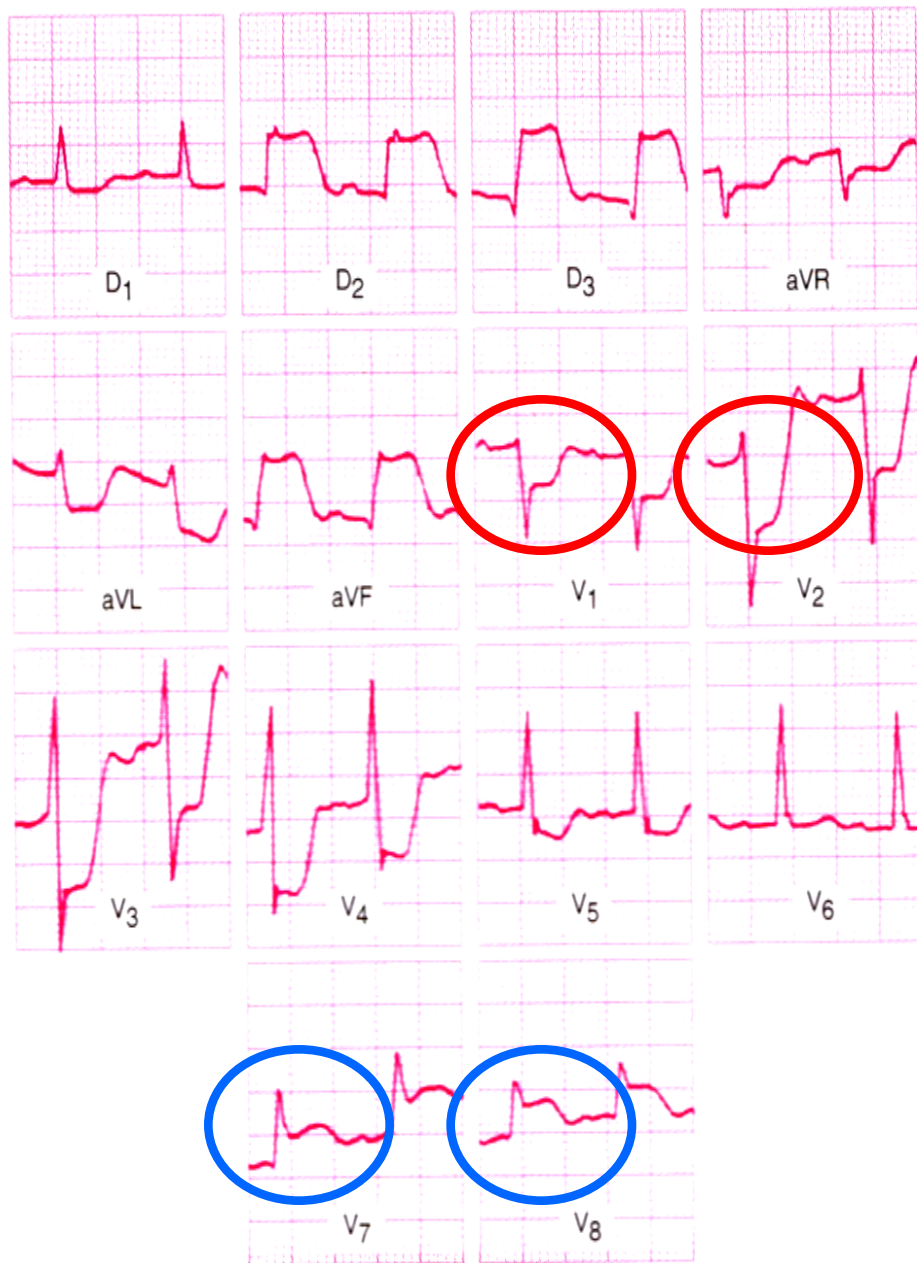




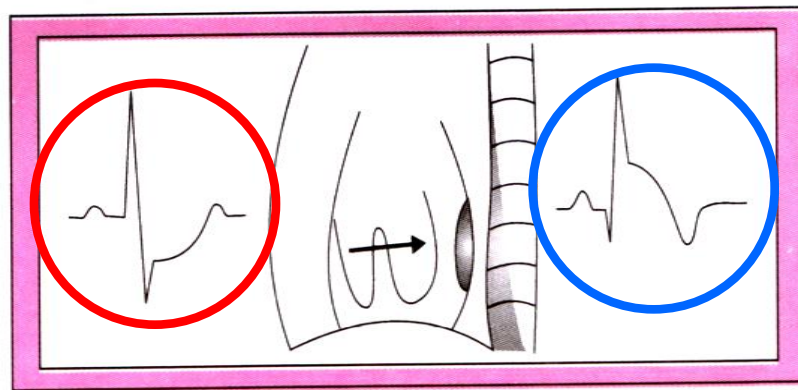
Lesão Subepicárdica



Mecanismo da imagem em espelho

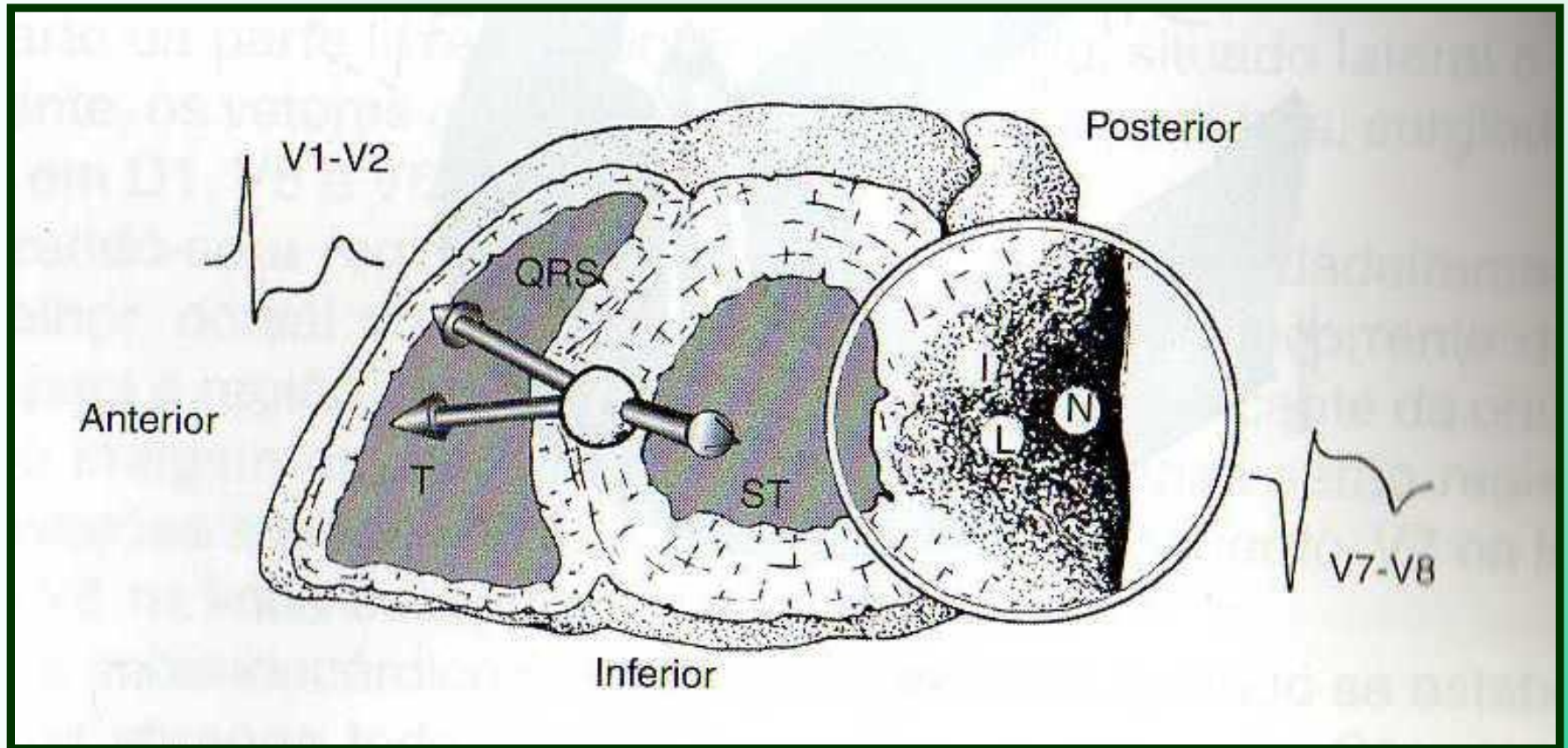


Lesão Subepicárdica

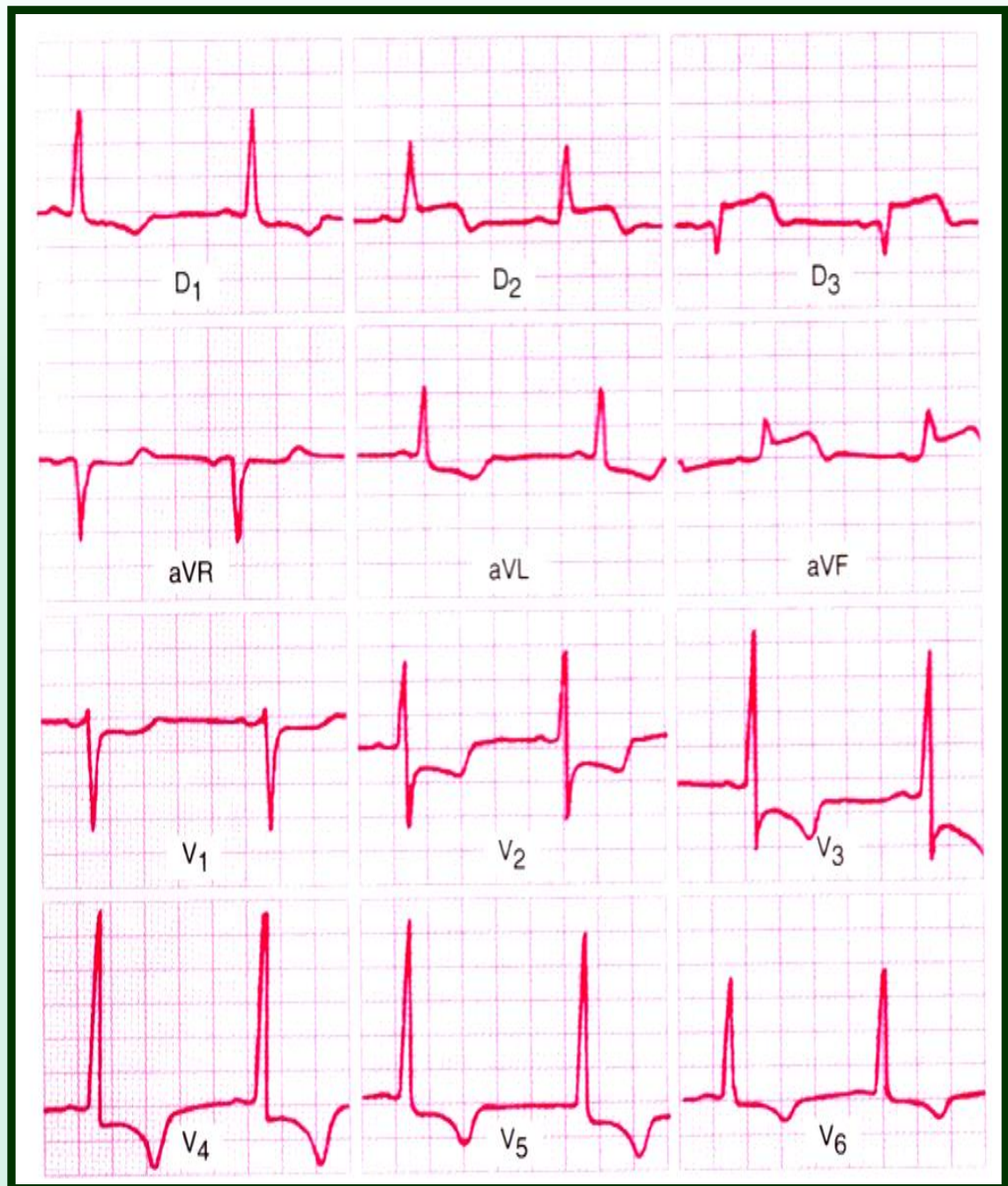


Mecanismo da imagem em espelho

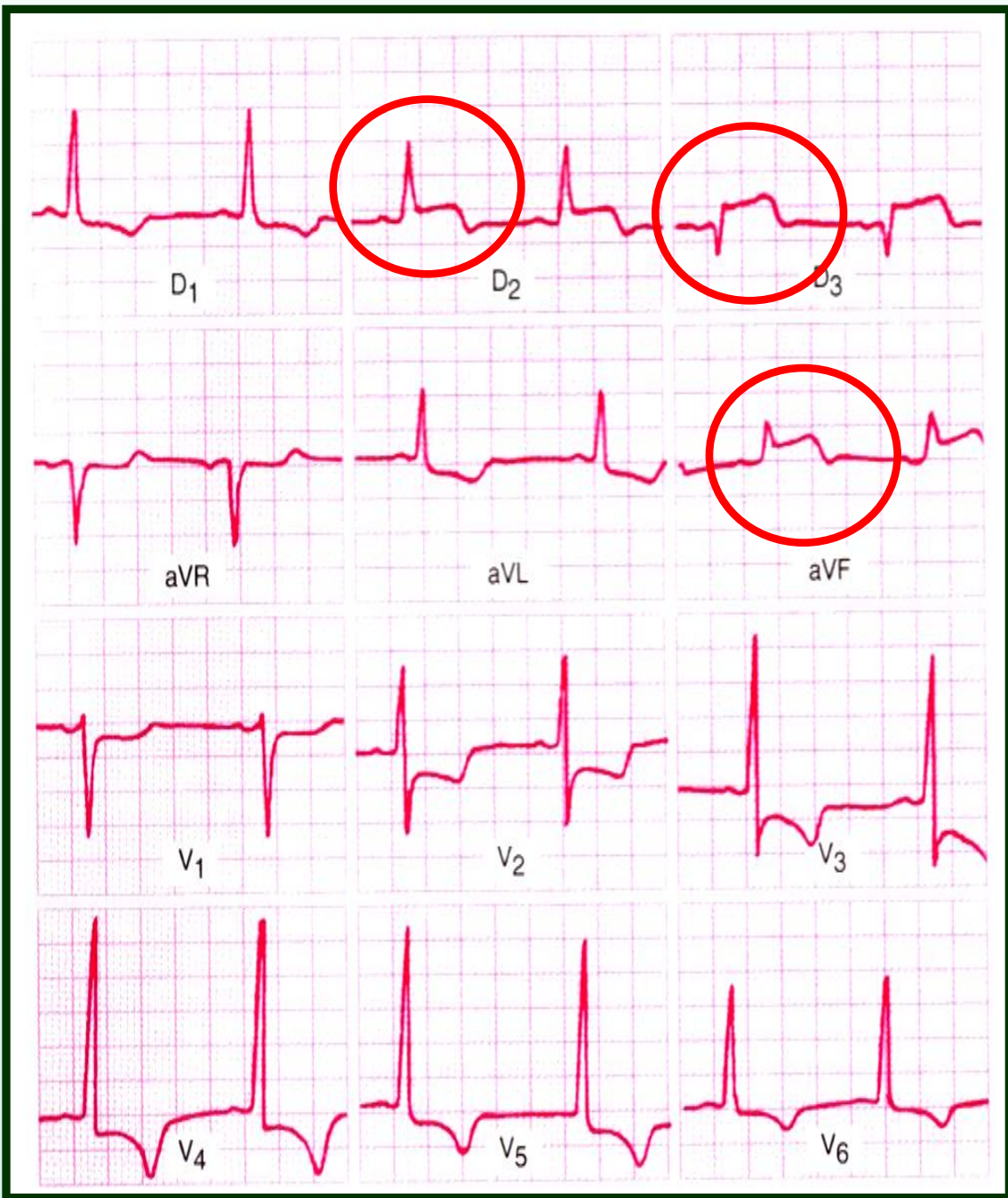
Mecanismo da imagem em espelho



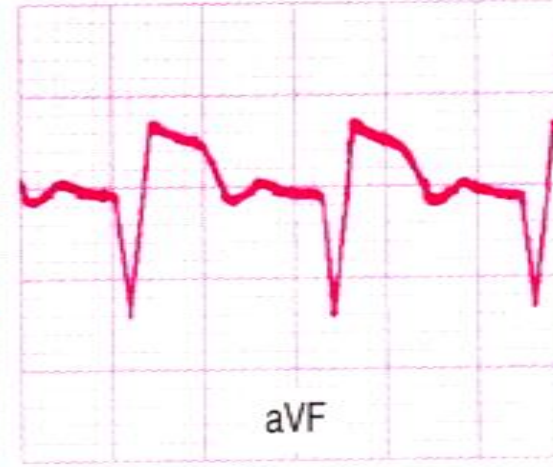
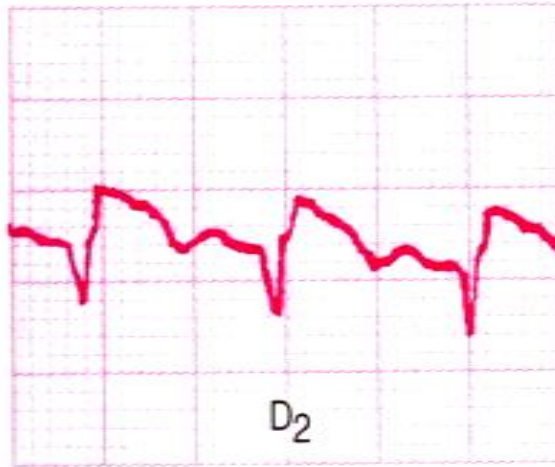
Lesão subepicárdica inferior



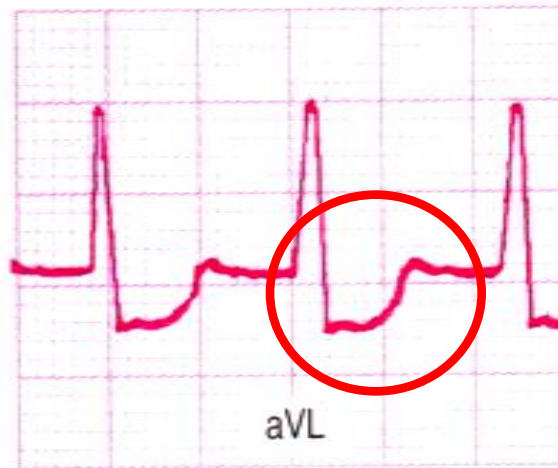
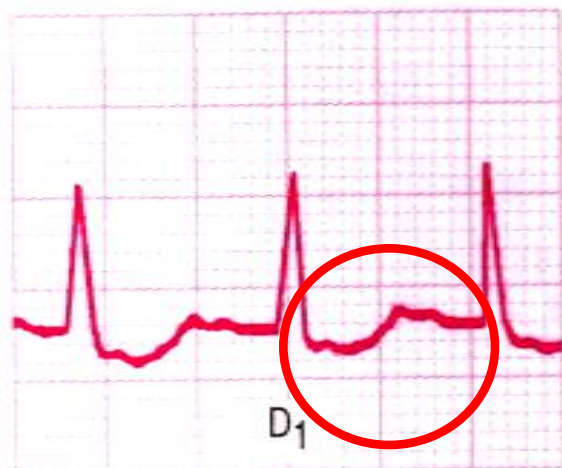
Lesão subepicárdica inferior

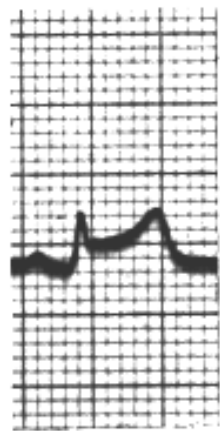


Lesão Subepicárdica

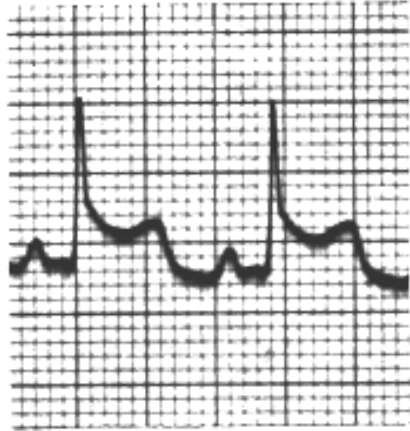


Lesão Subepicárdica

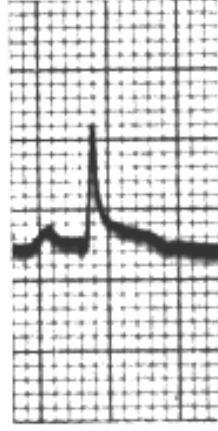




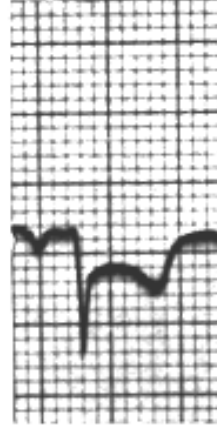
D1



D2



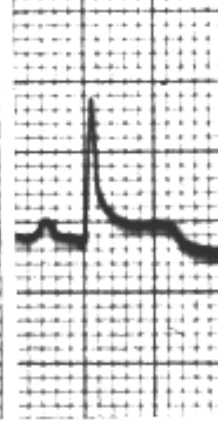
D3



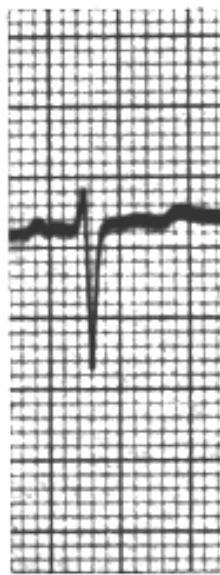
aVR



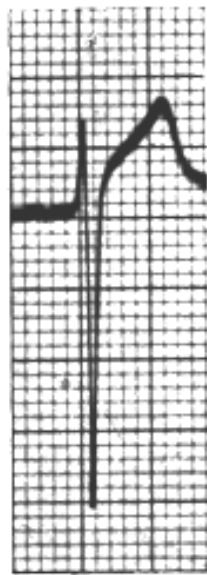
aVL



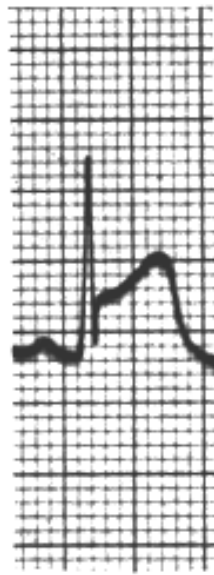
aVF



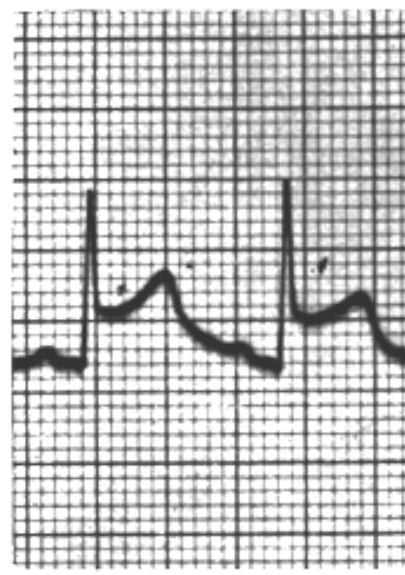
V1



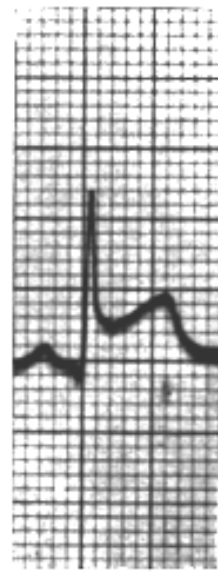
V2



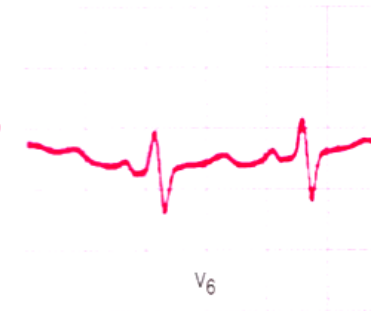
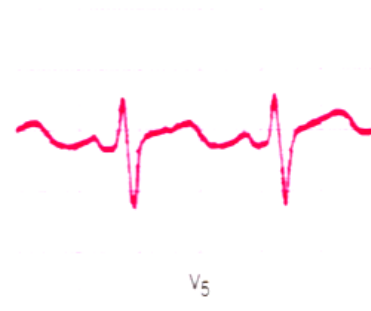
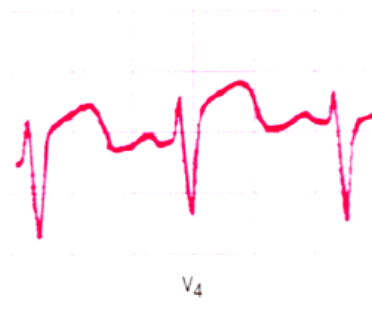
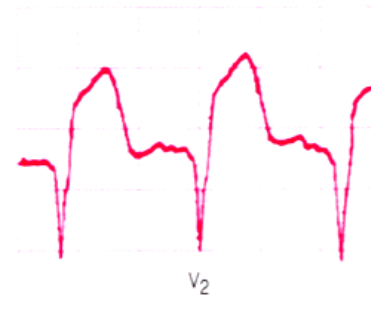
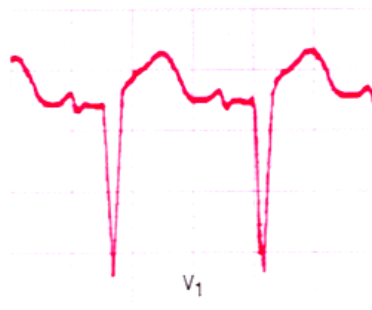
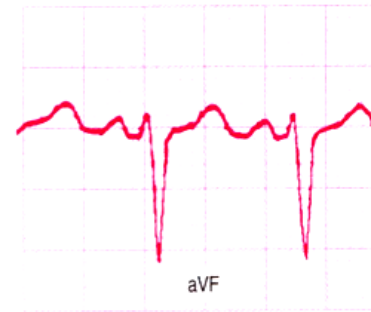
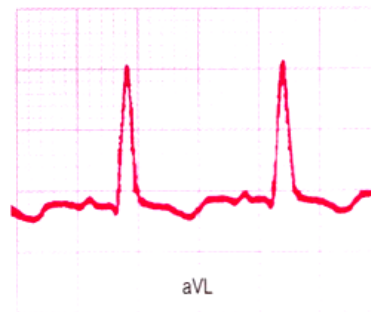
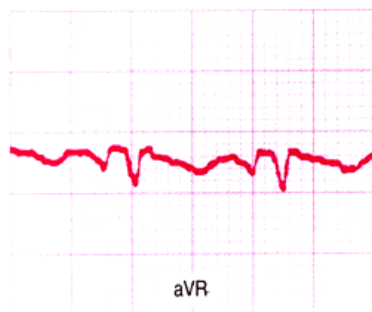
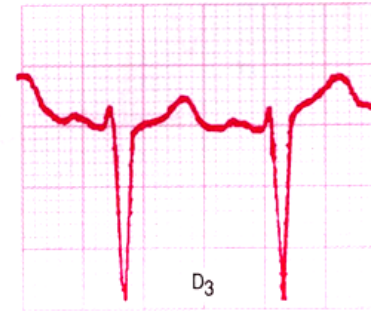
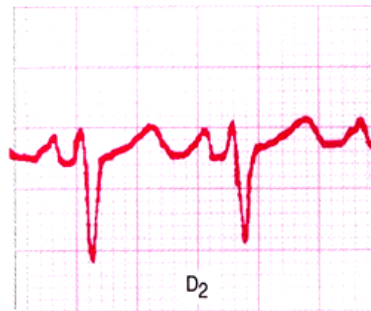
V4

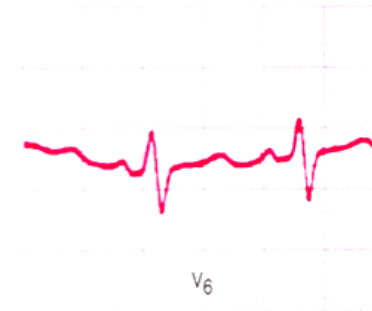
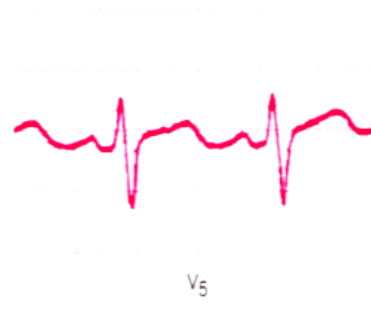
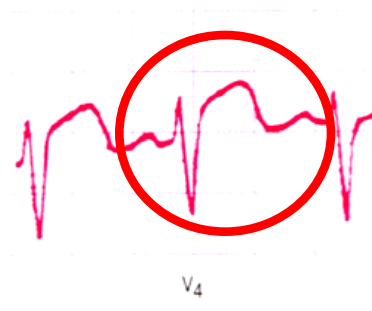
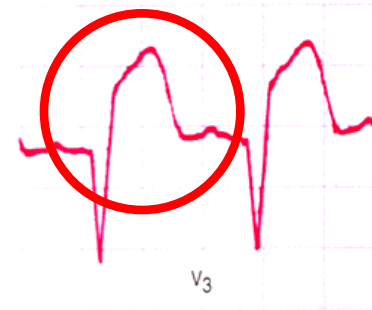
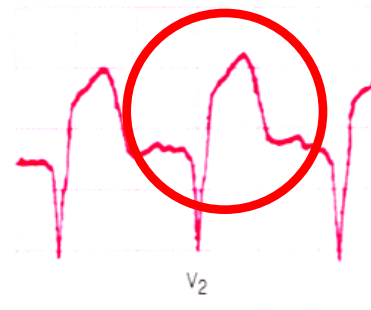
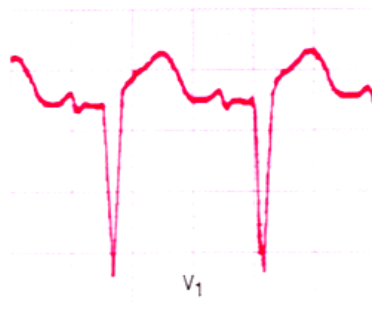
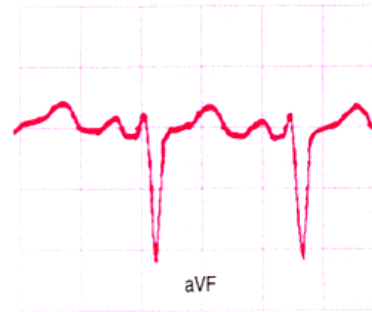
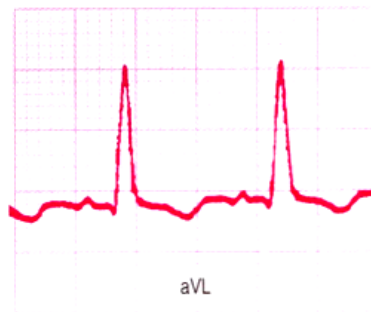
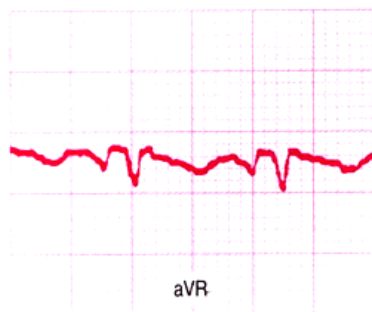
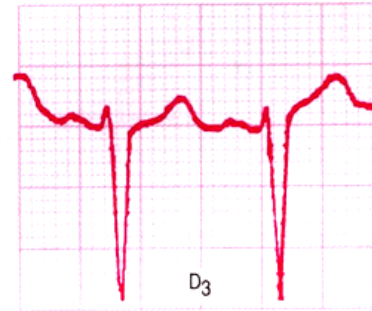
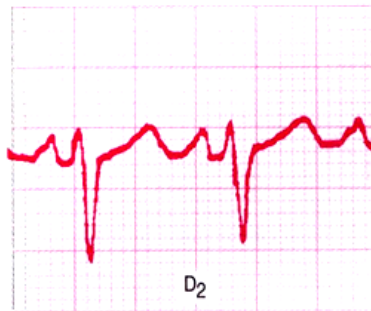


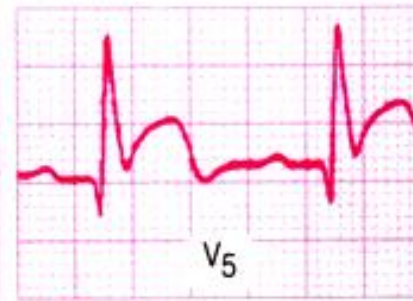
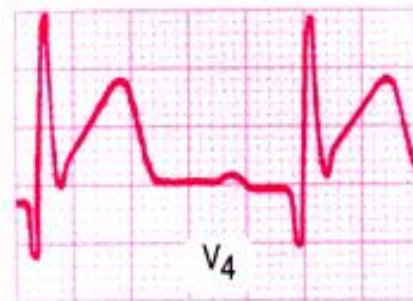
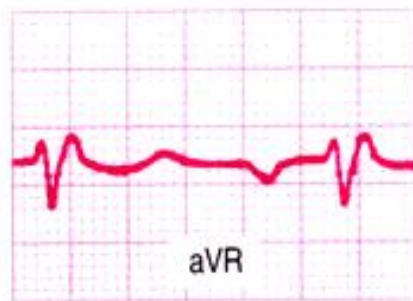
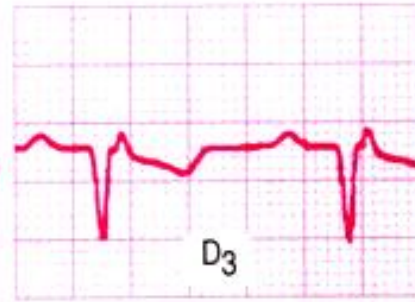
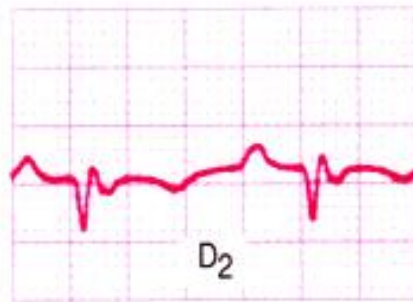
V5

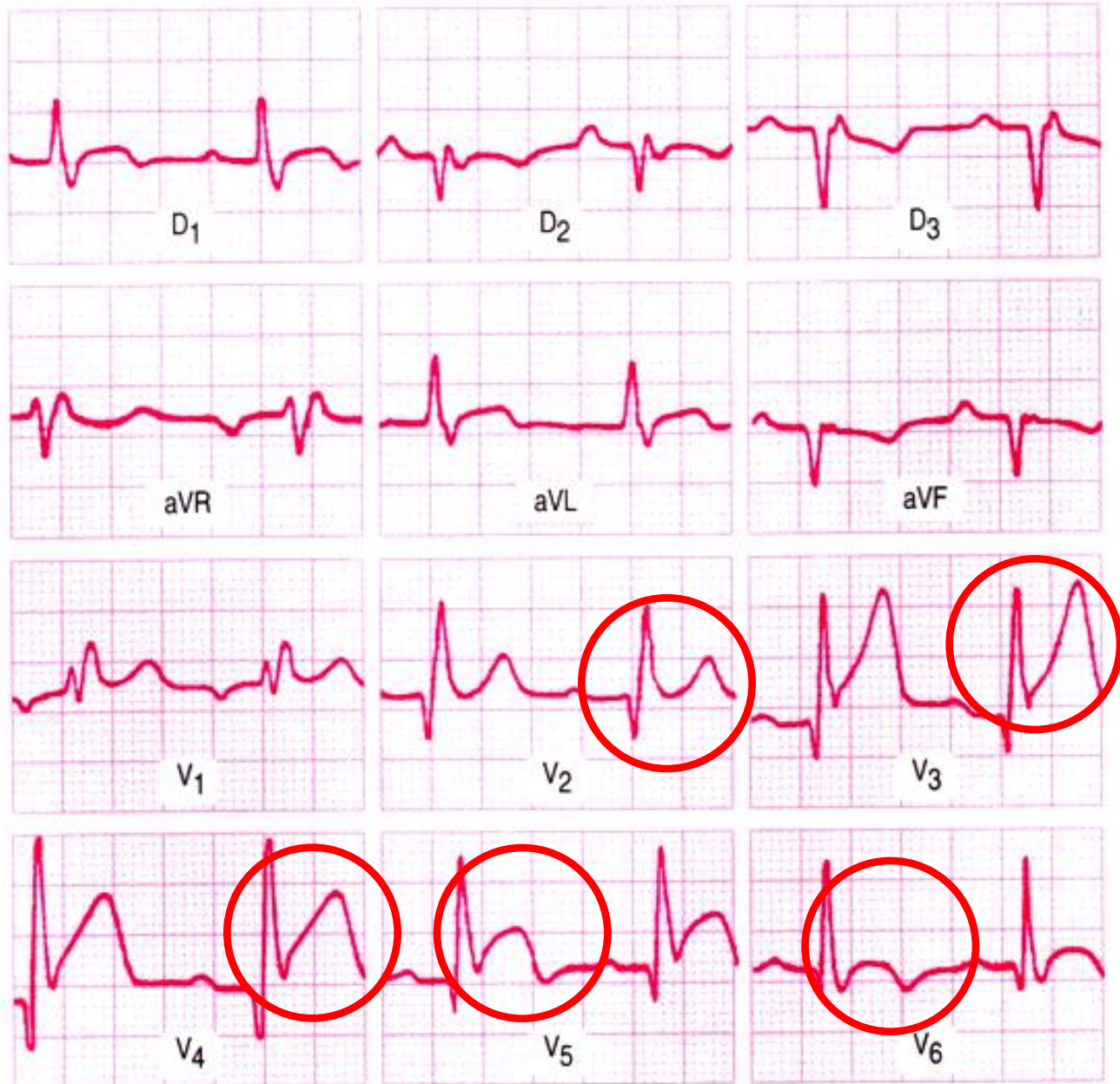


V6

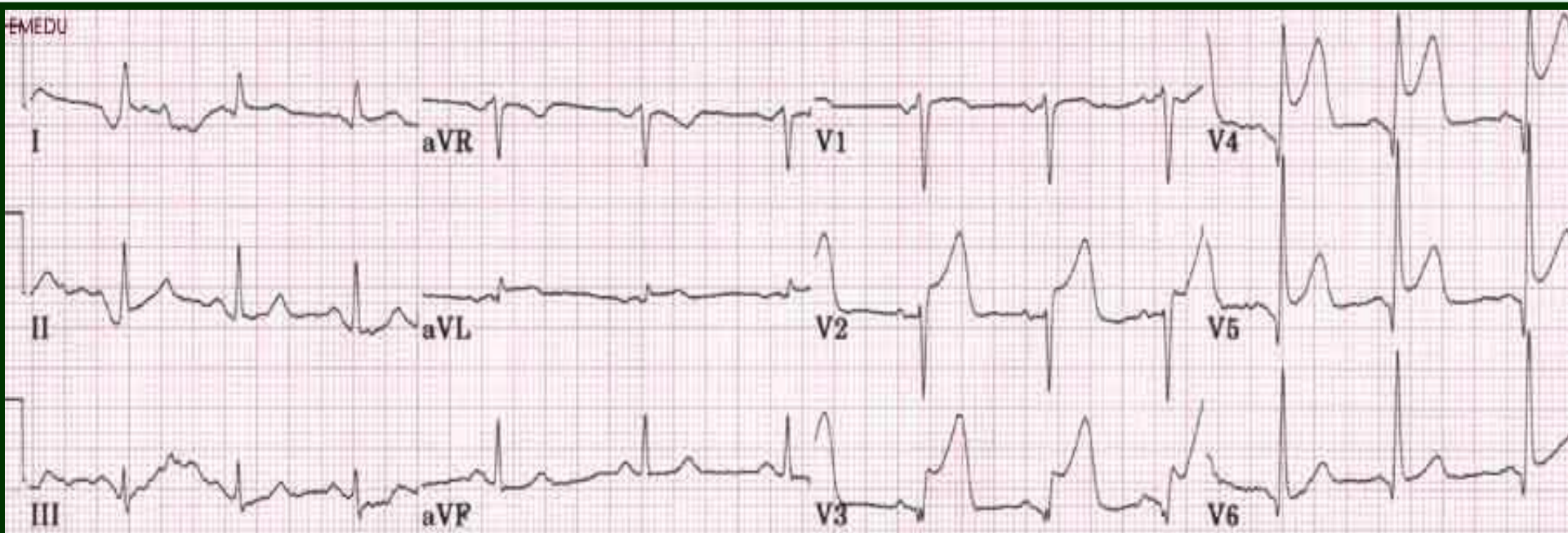






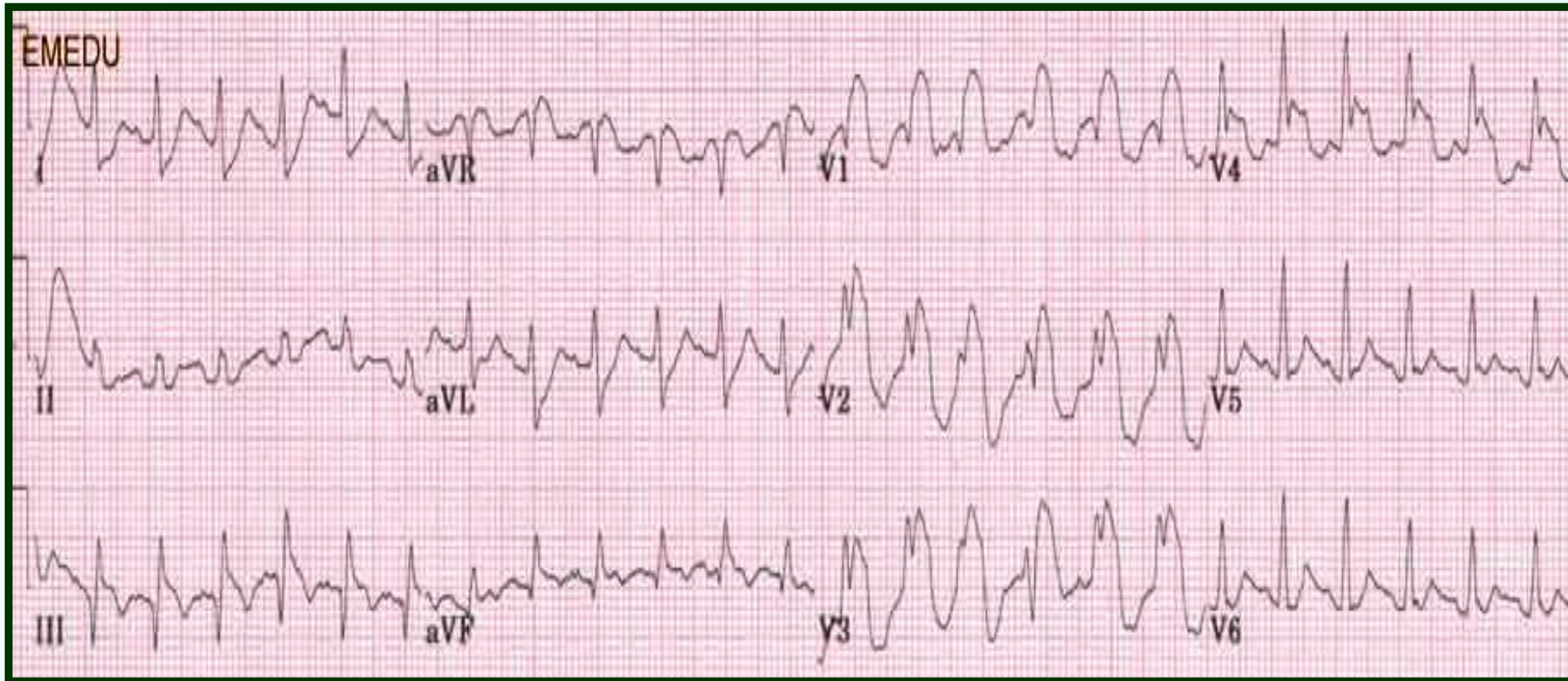


Lesão Subepicárdica



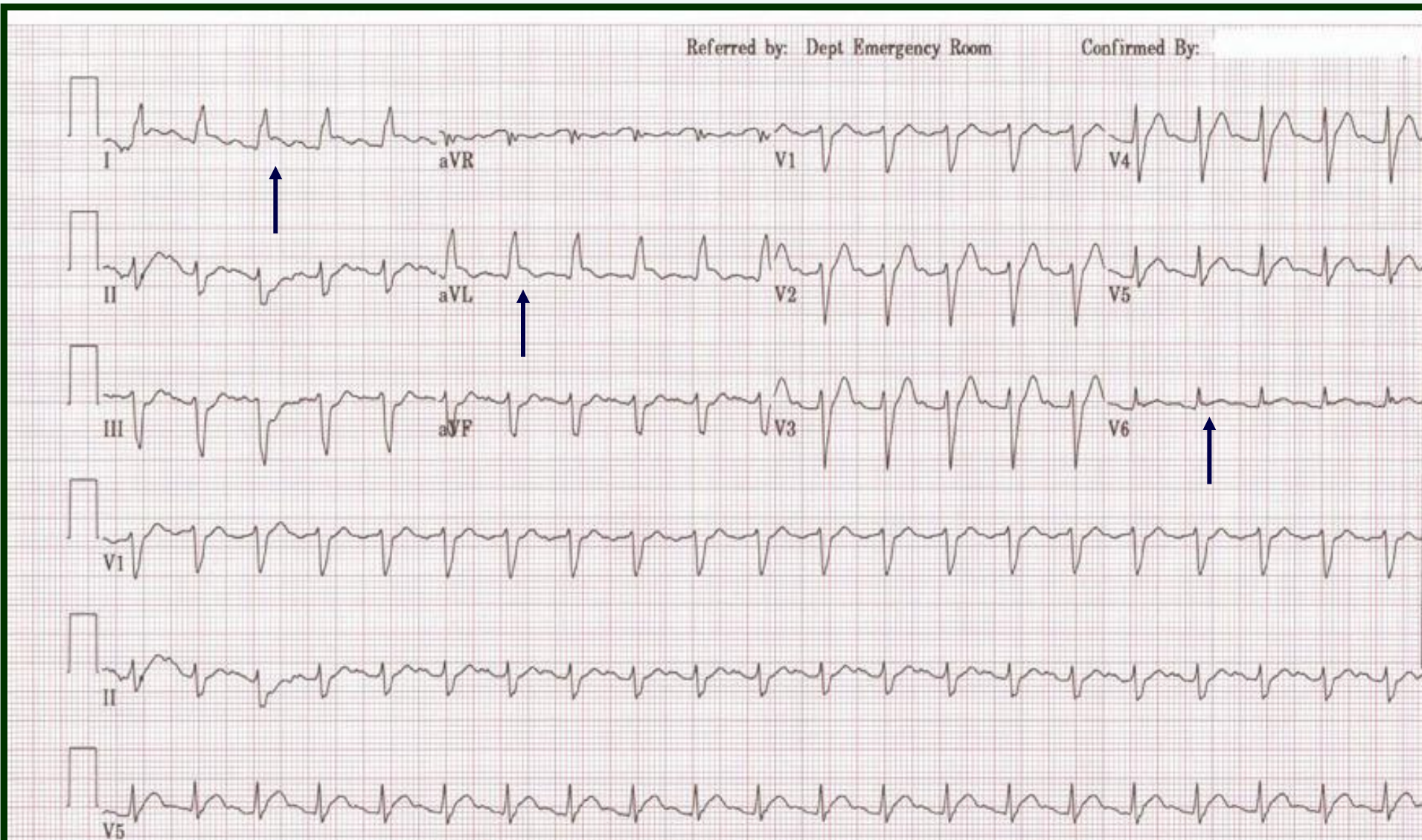
Região Anterior

Lesão Subepicárdica

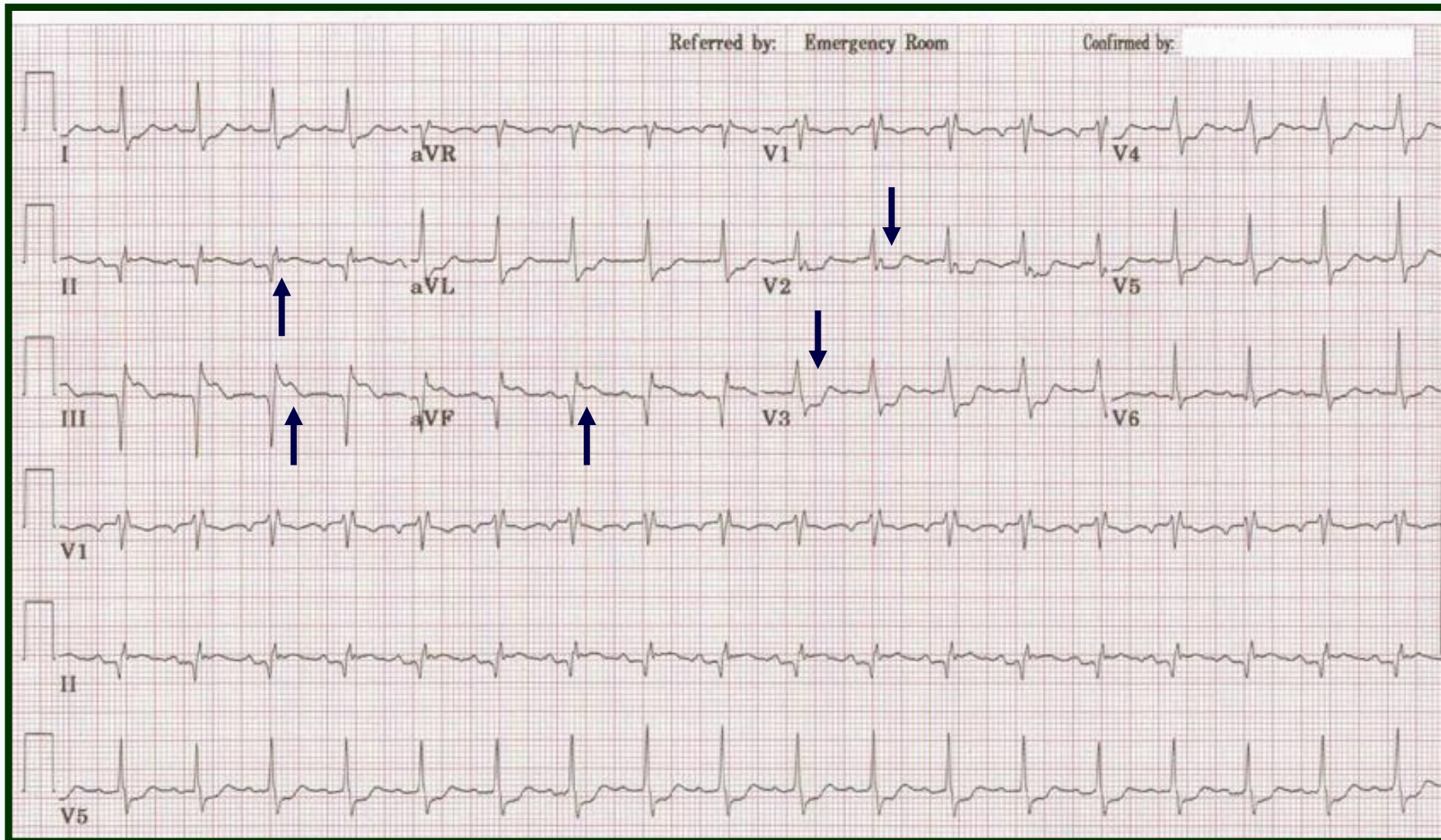


**Infarto Agudo do Miocárdico em Região Ântero-septal
(Corrente de Lesão Ântero-septal)**

Lesão Subepicárdica

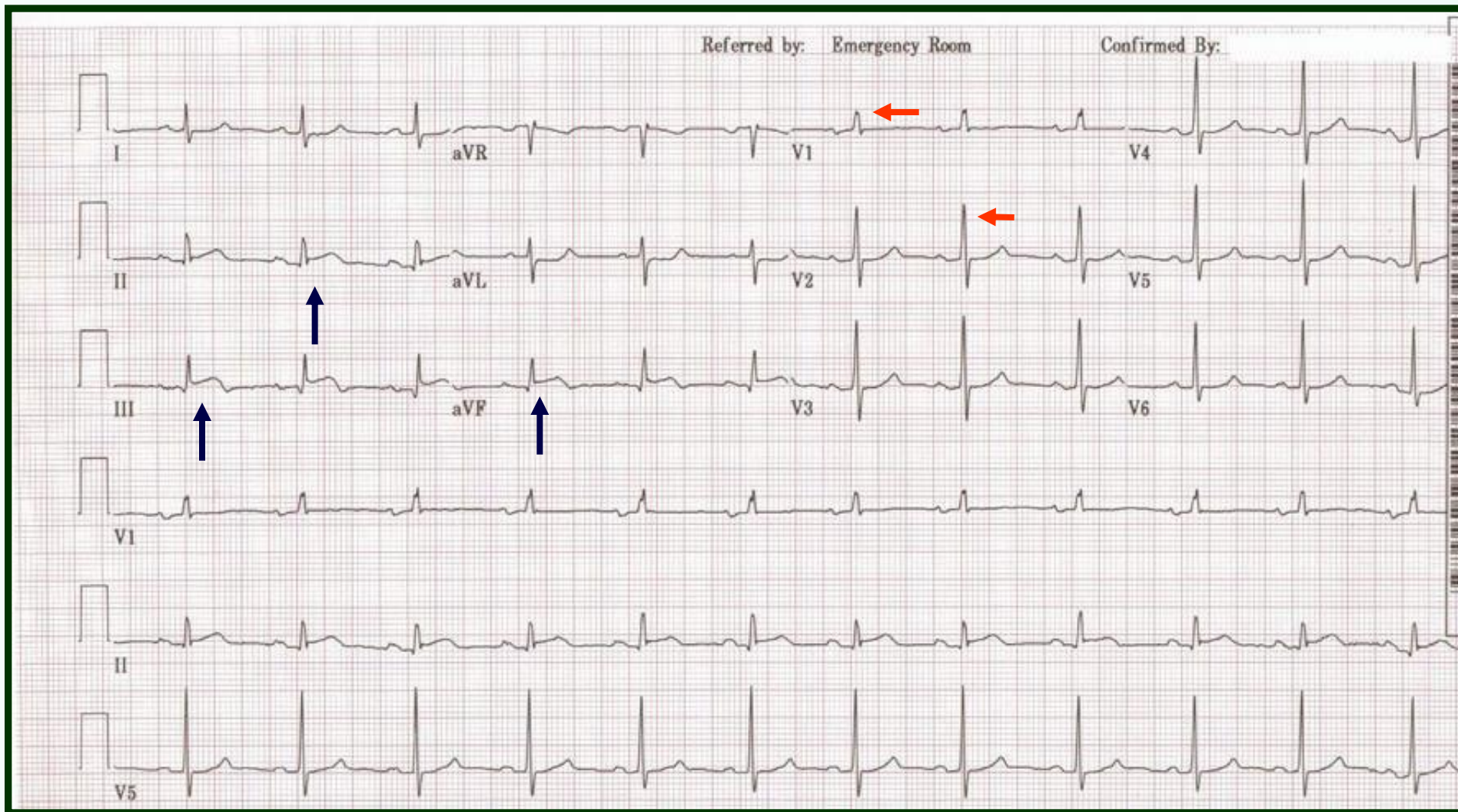


Lesão Subepicárdica



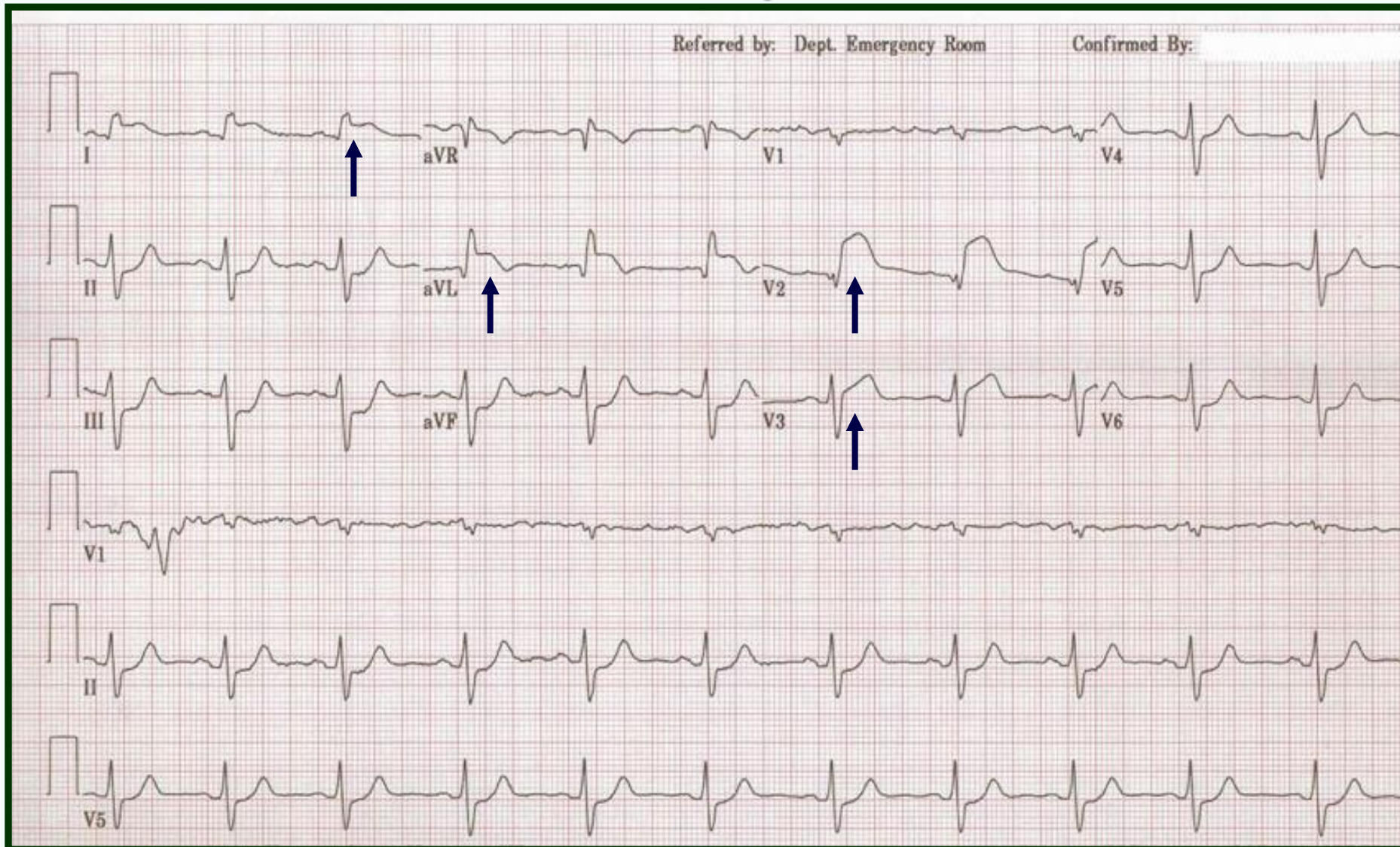
**Corrente de Lesão em Região Inferior
Necrose Dorsal**

Lesão Subepicárdica



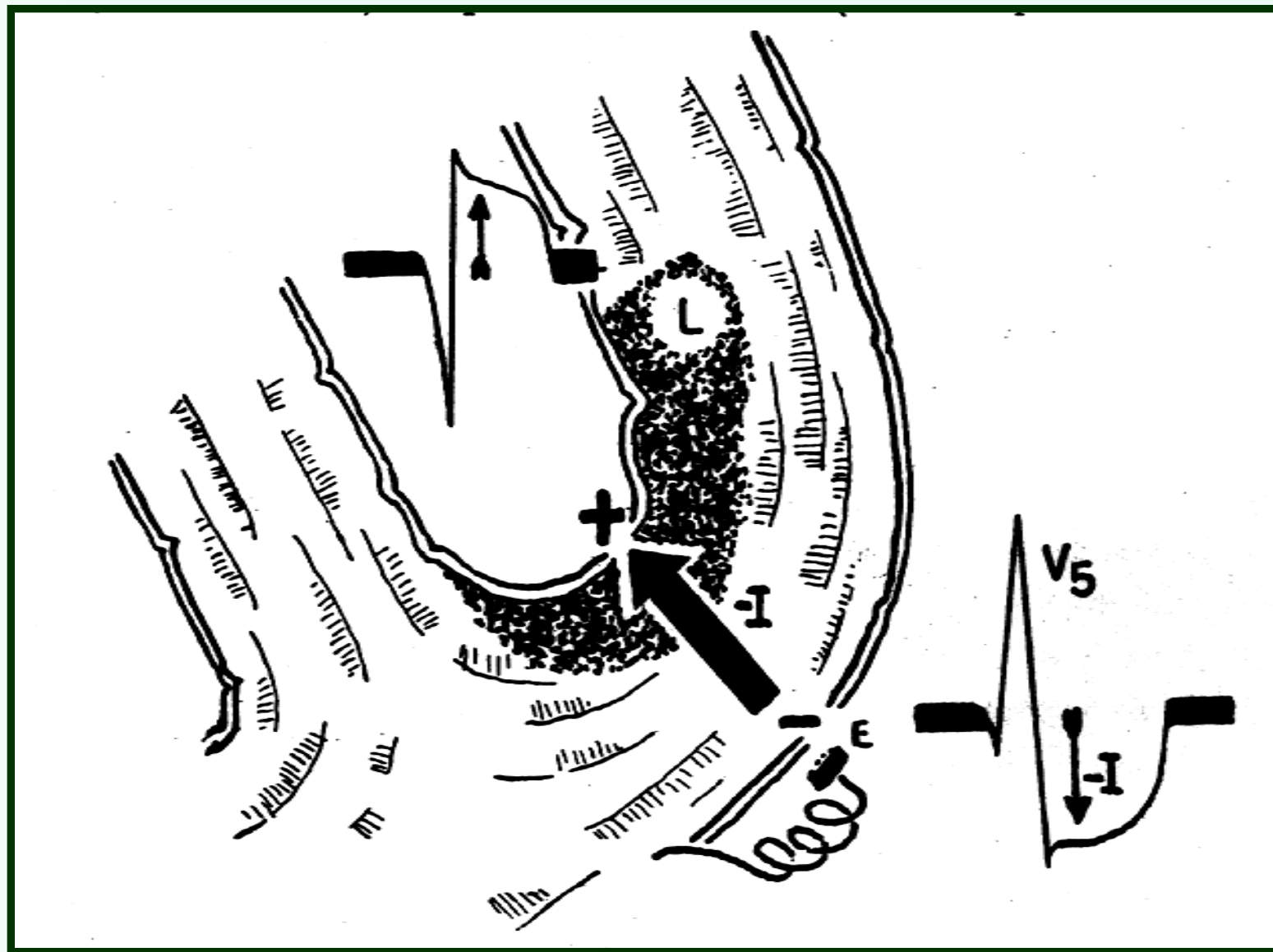
**Corrente de Lesão em Região Inferior
Necrose Dorsal**

Lesão Subepicárdica

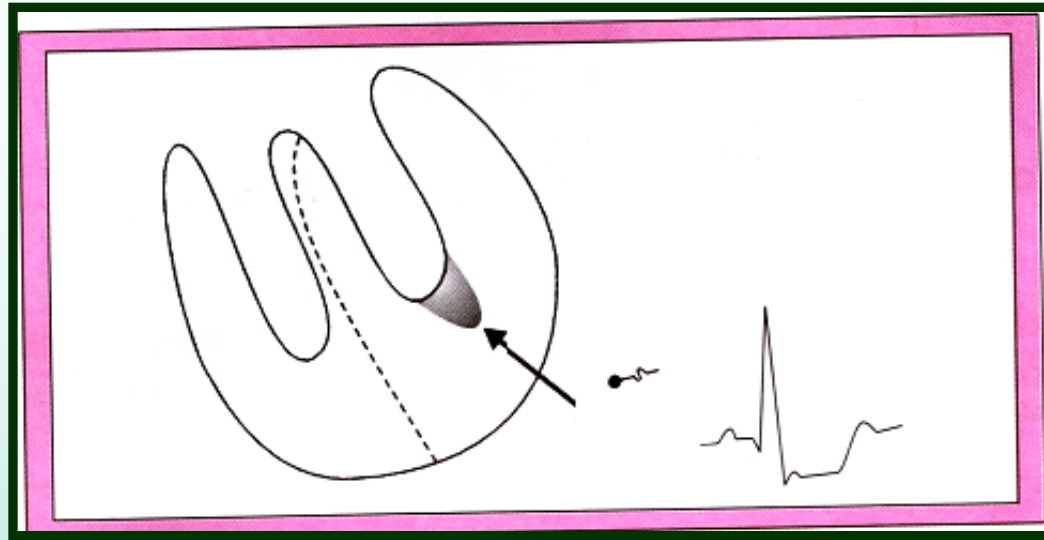


Corrente de Lesão em Regiões Ântero-septal e Lateral

Lesão Subendocárdica

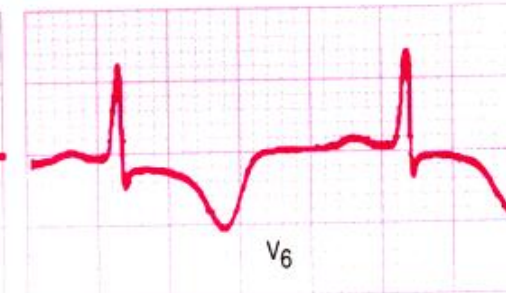
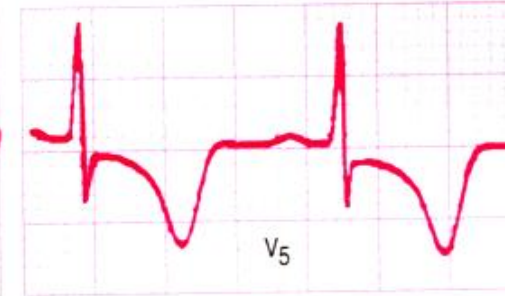
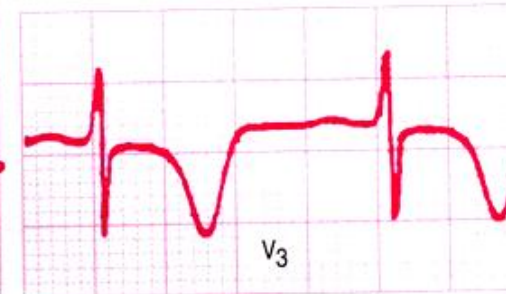
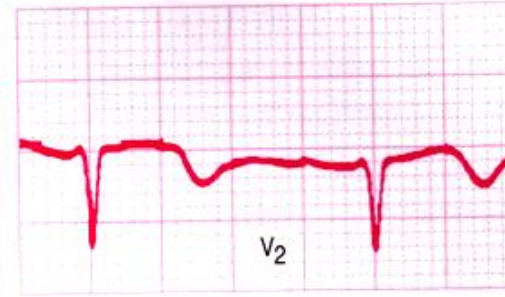
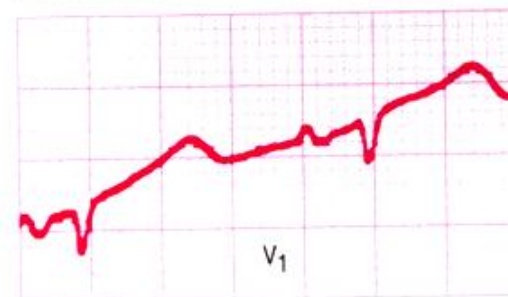
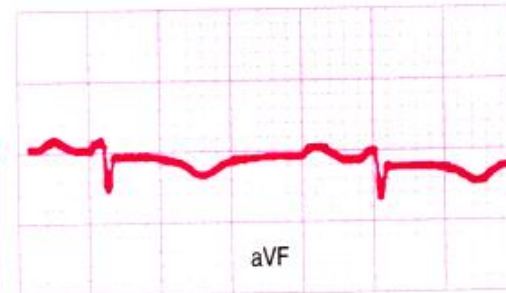
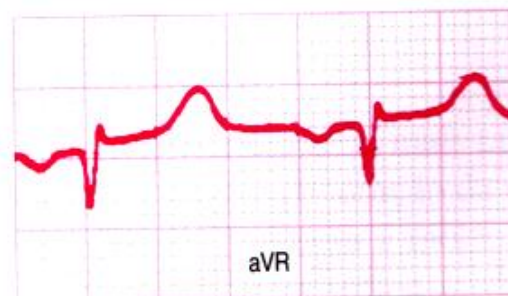
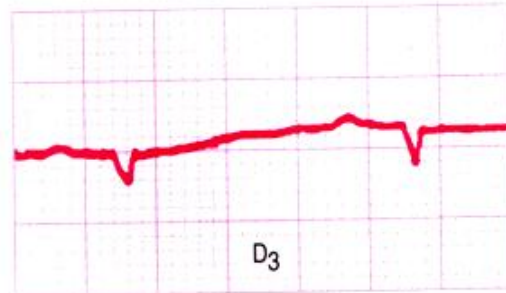


Isquemia subendocárdica

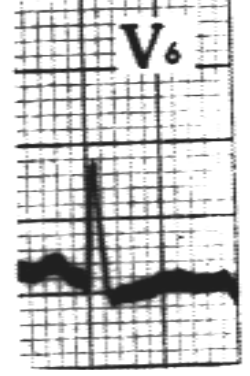
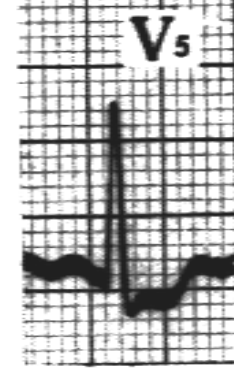
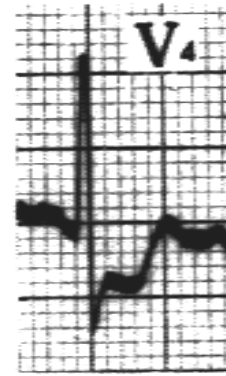
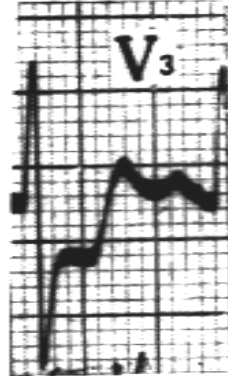
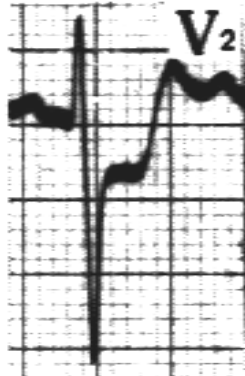
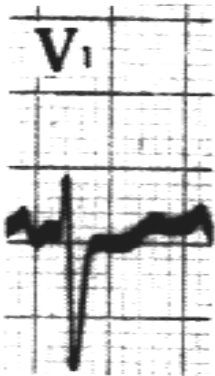
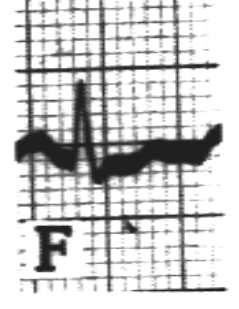
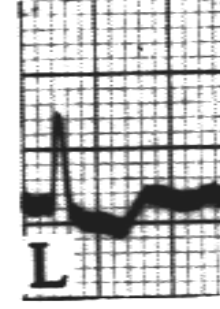
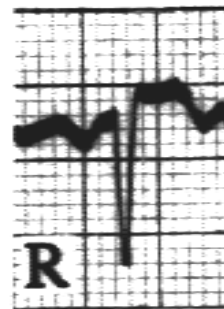
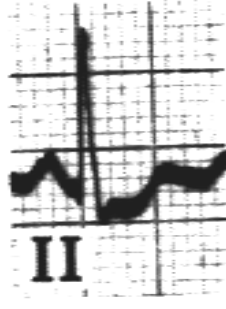
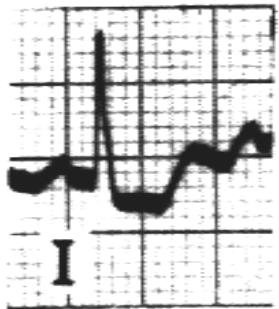


- ✓ Infradesnível do ponto J e segmento ST
- ✓ Segmento ST de concavidade superior
- ✓ Aumento do tempo de deflexão intrínsecoide
- ✓ Aumento do intervalo QT



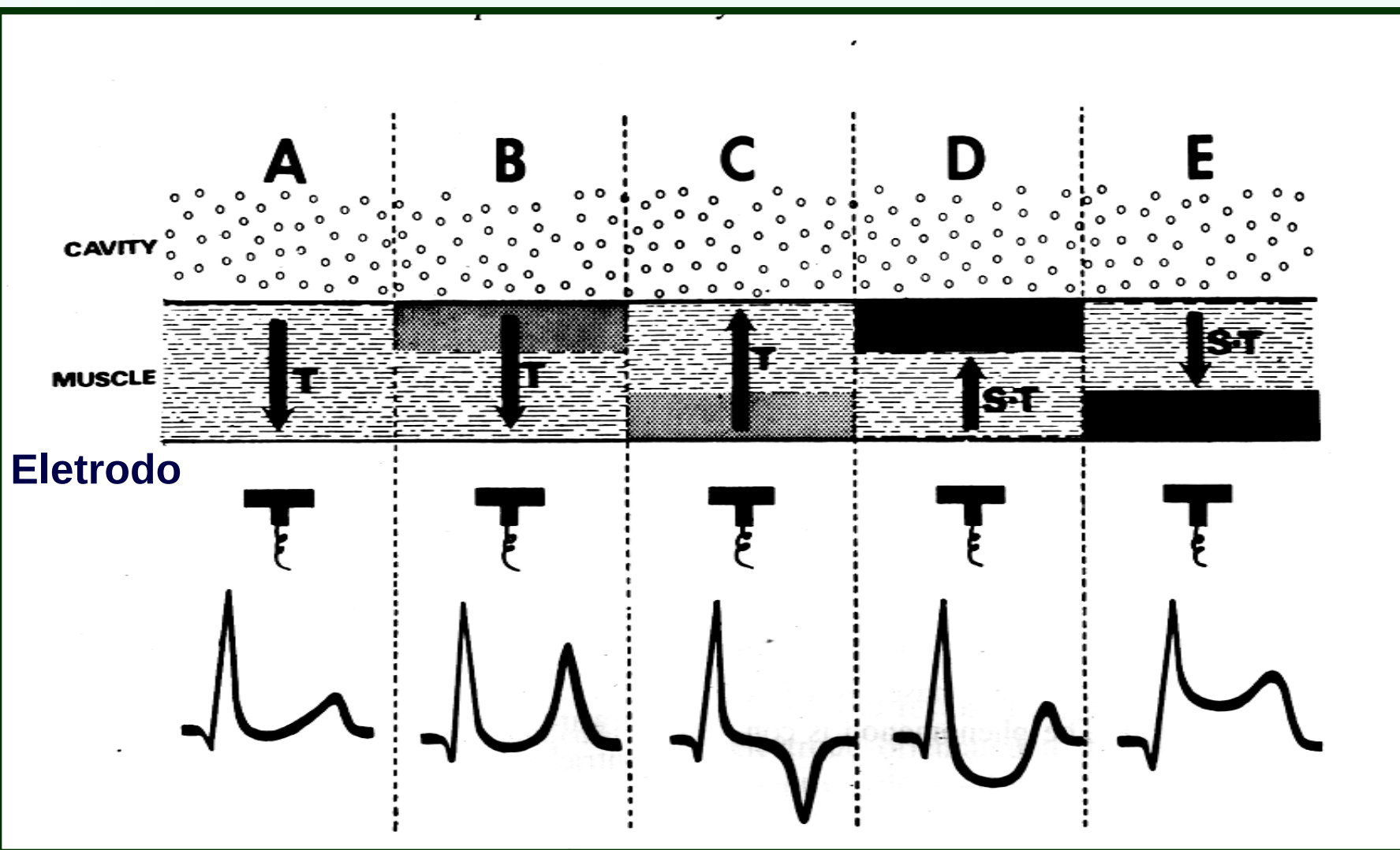


Lesão Subendocárdica



Regiões Ântero-septal e Anterior

Critérios Eletrocardiográficos de Isquemia e Lesão

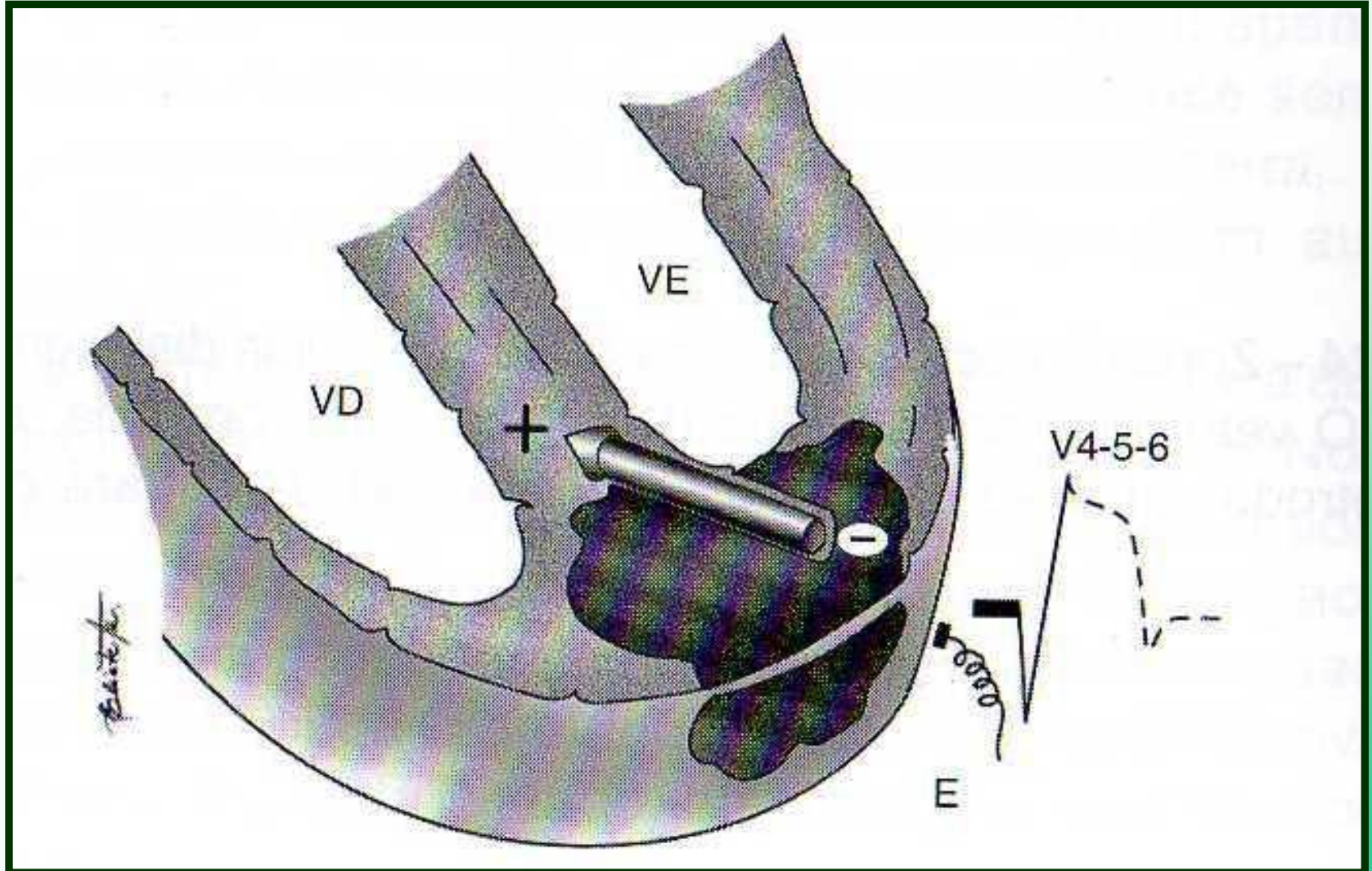




Seção Médica de Eletrofisiologia Clínica e Arritmias Cardíacas
Instituto Dante Pazzanese de Cardiologia

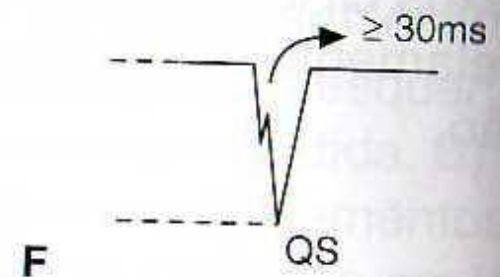
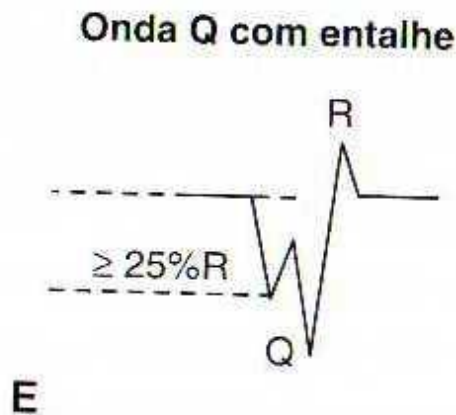
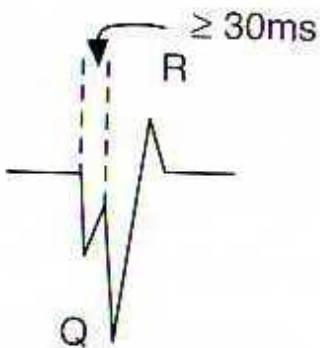
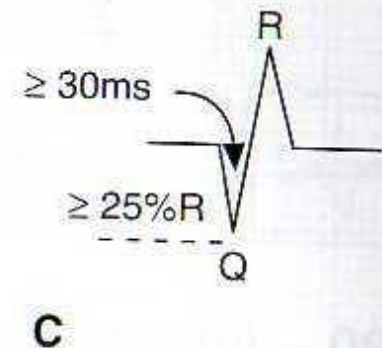
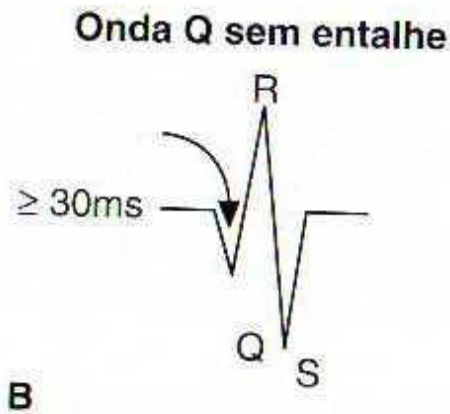
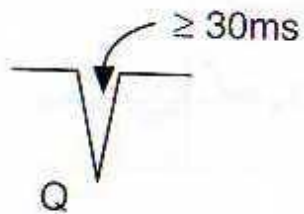
NECROSE

NECROSE



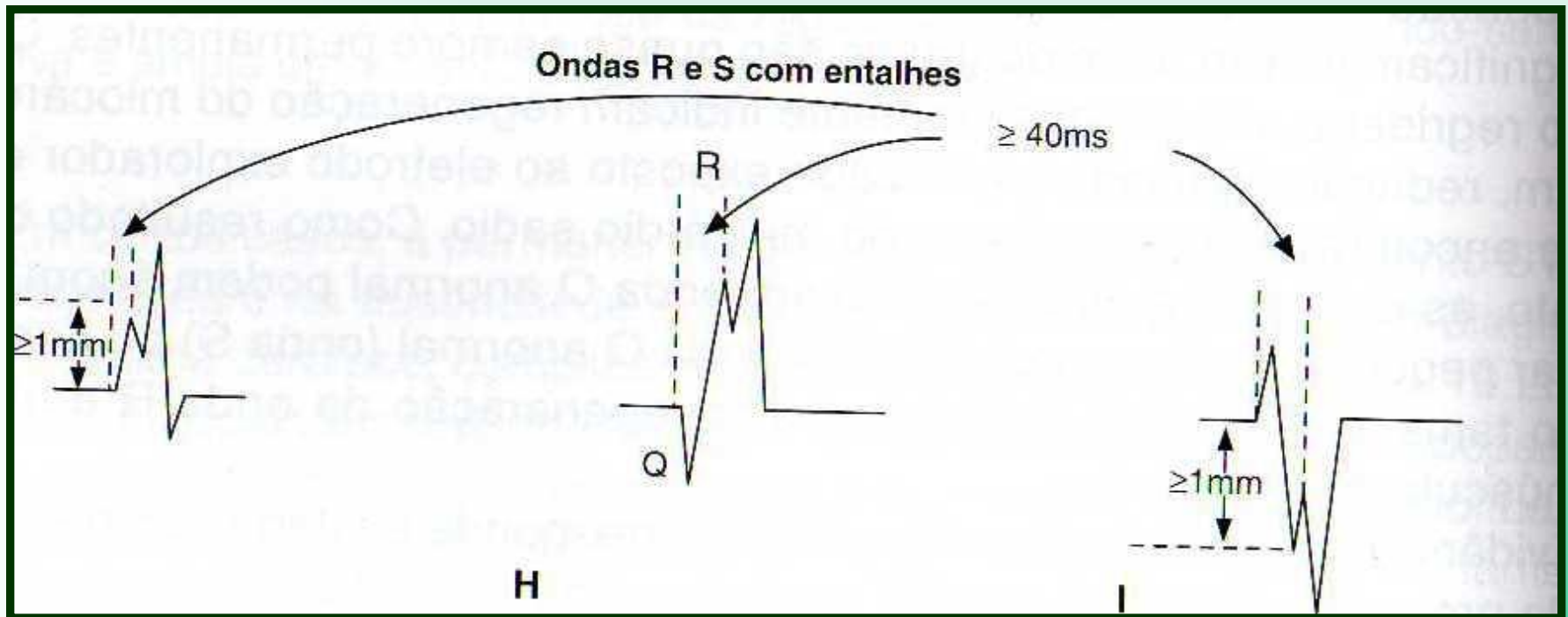
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características da onda Q

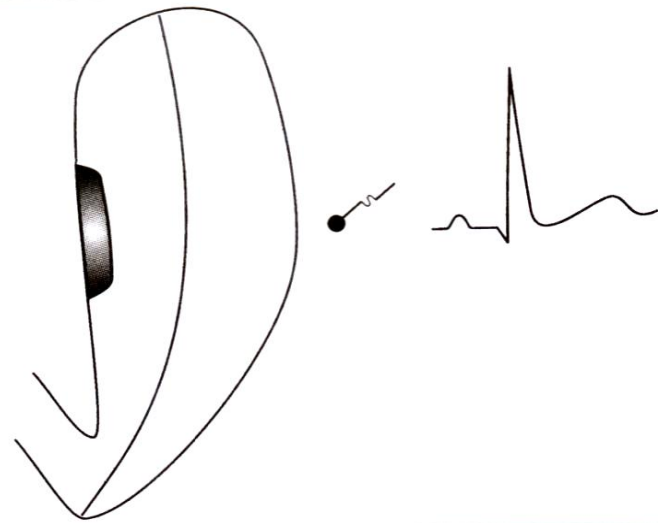
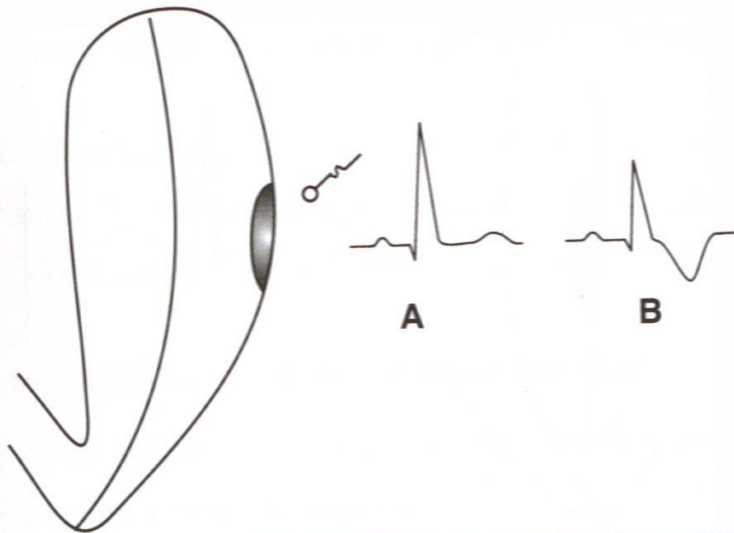
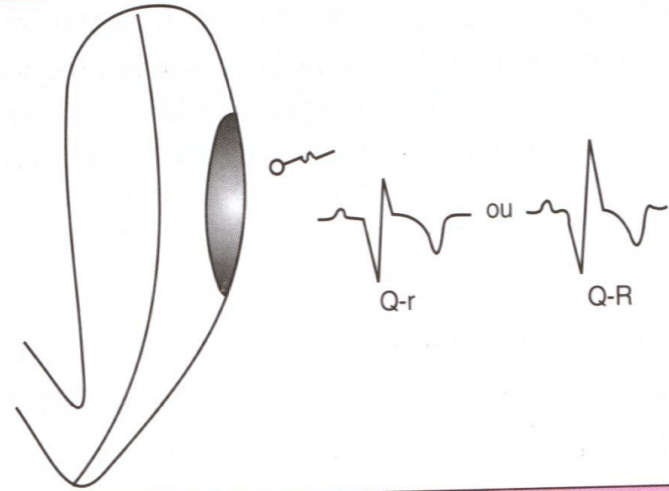
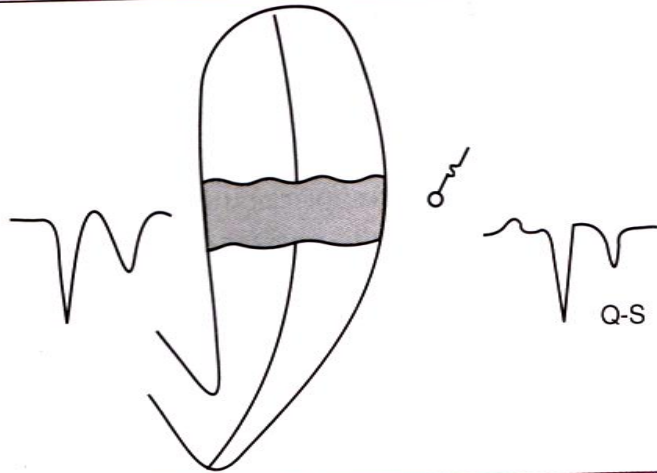


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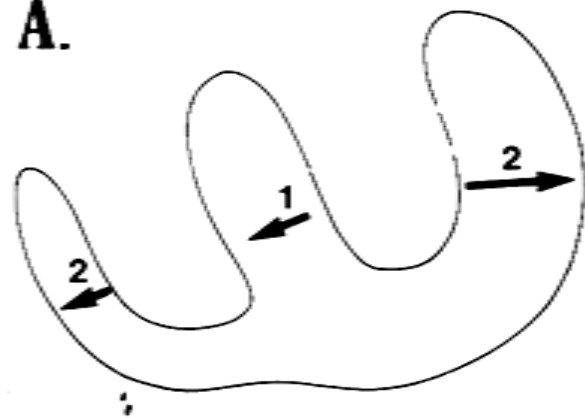
características da onda Q



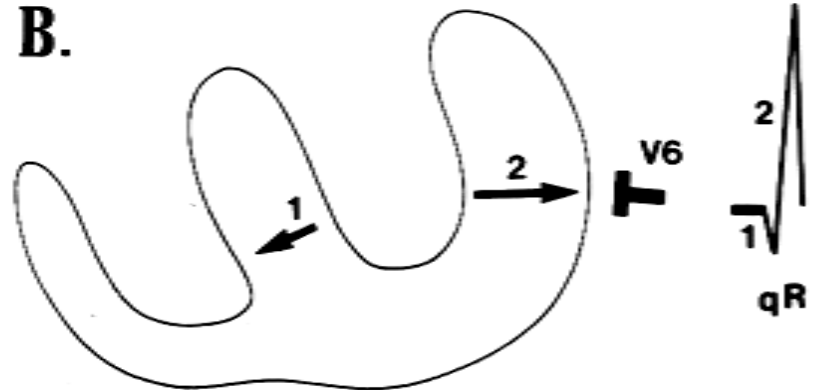
Necrose Miocárdica



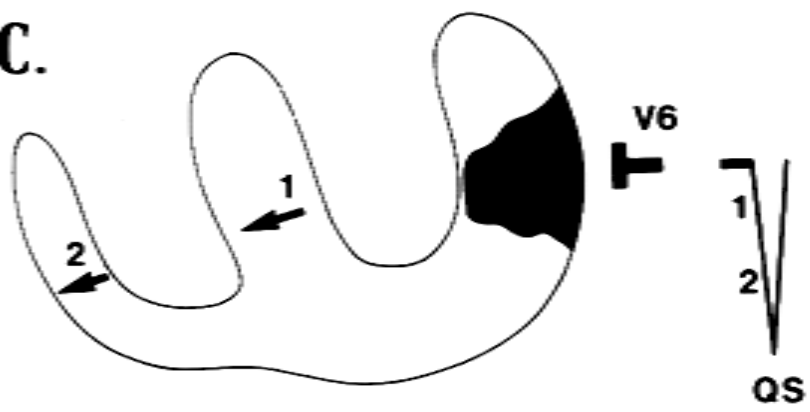
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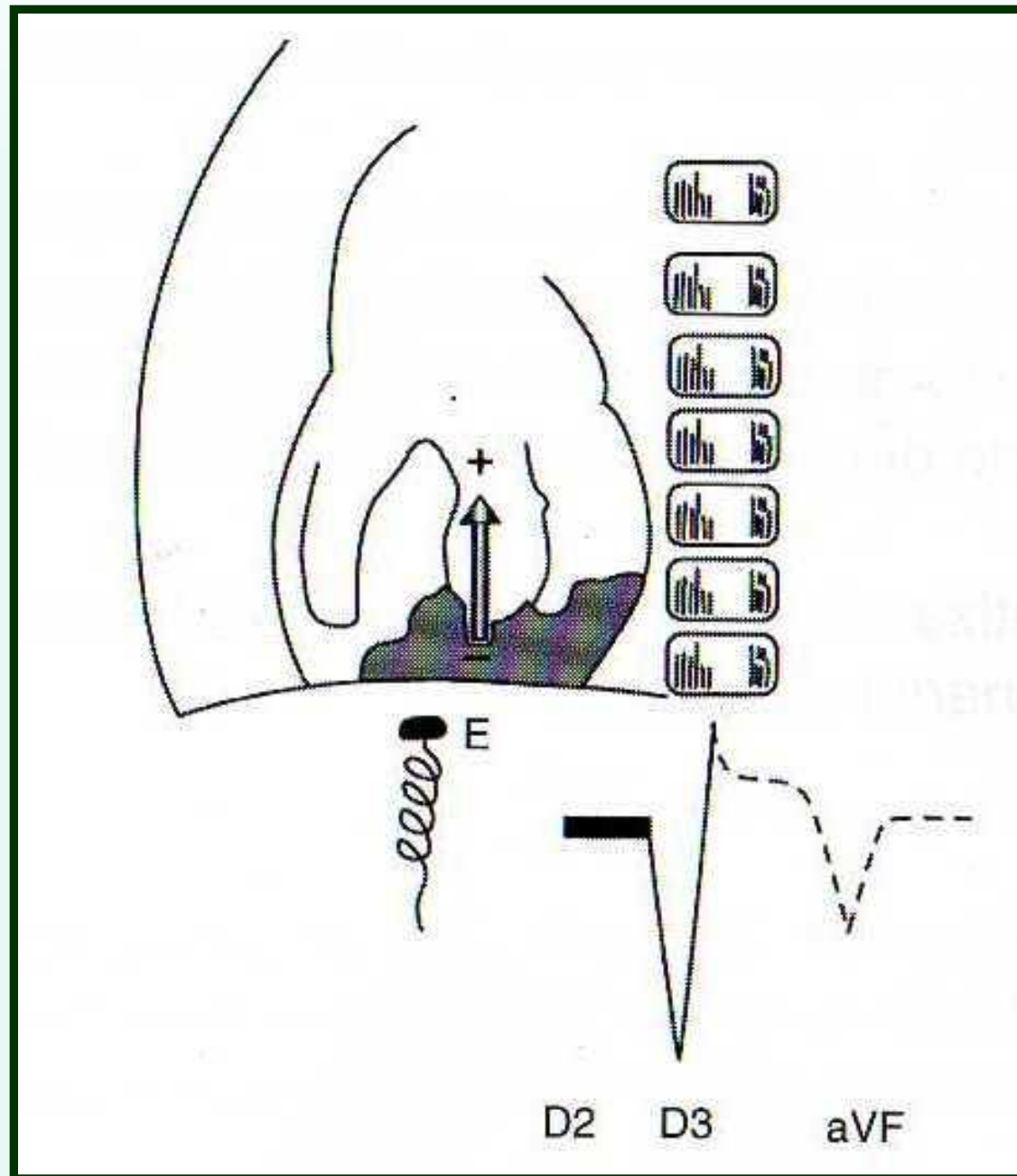


B.

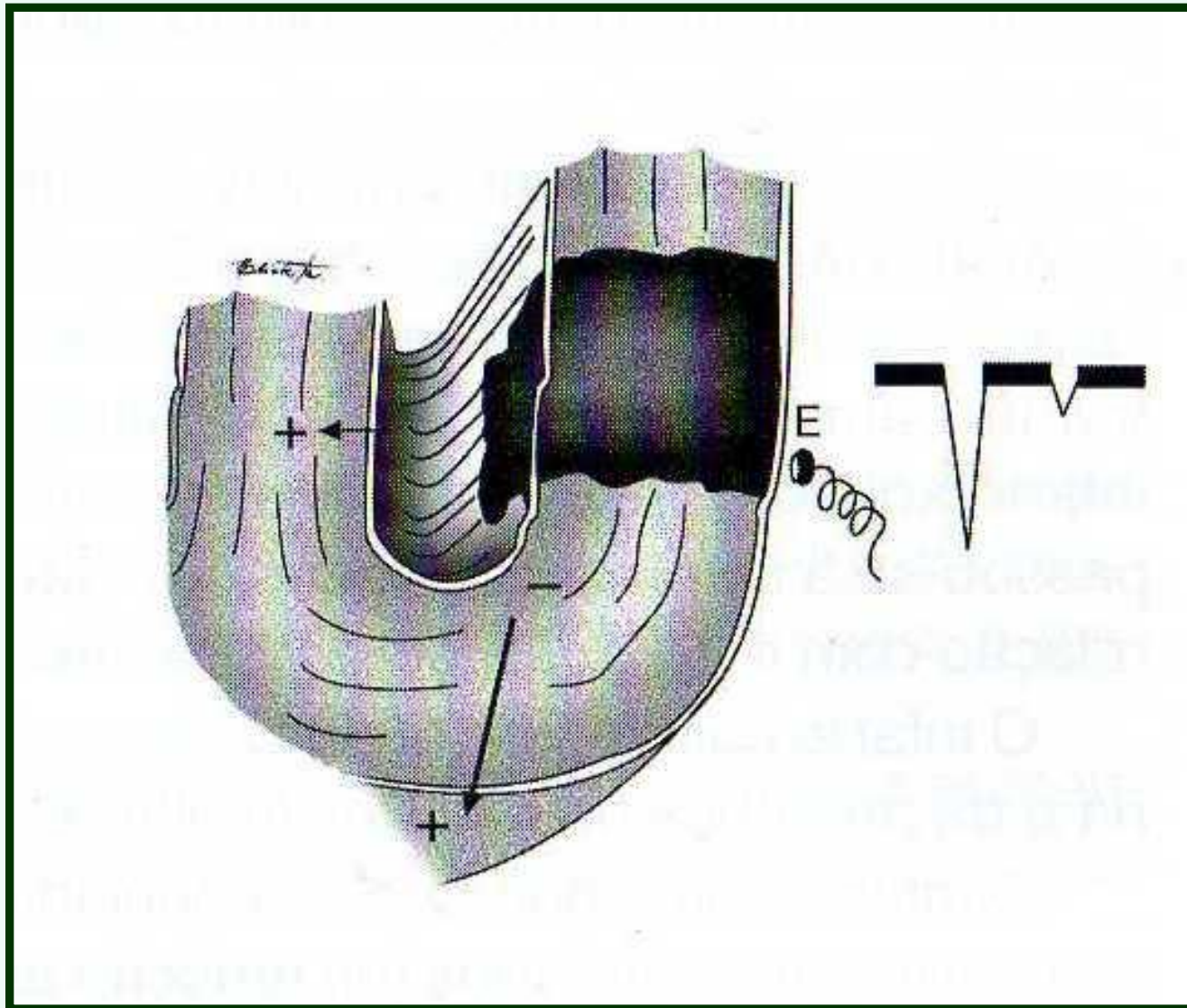


C.

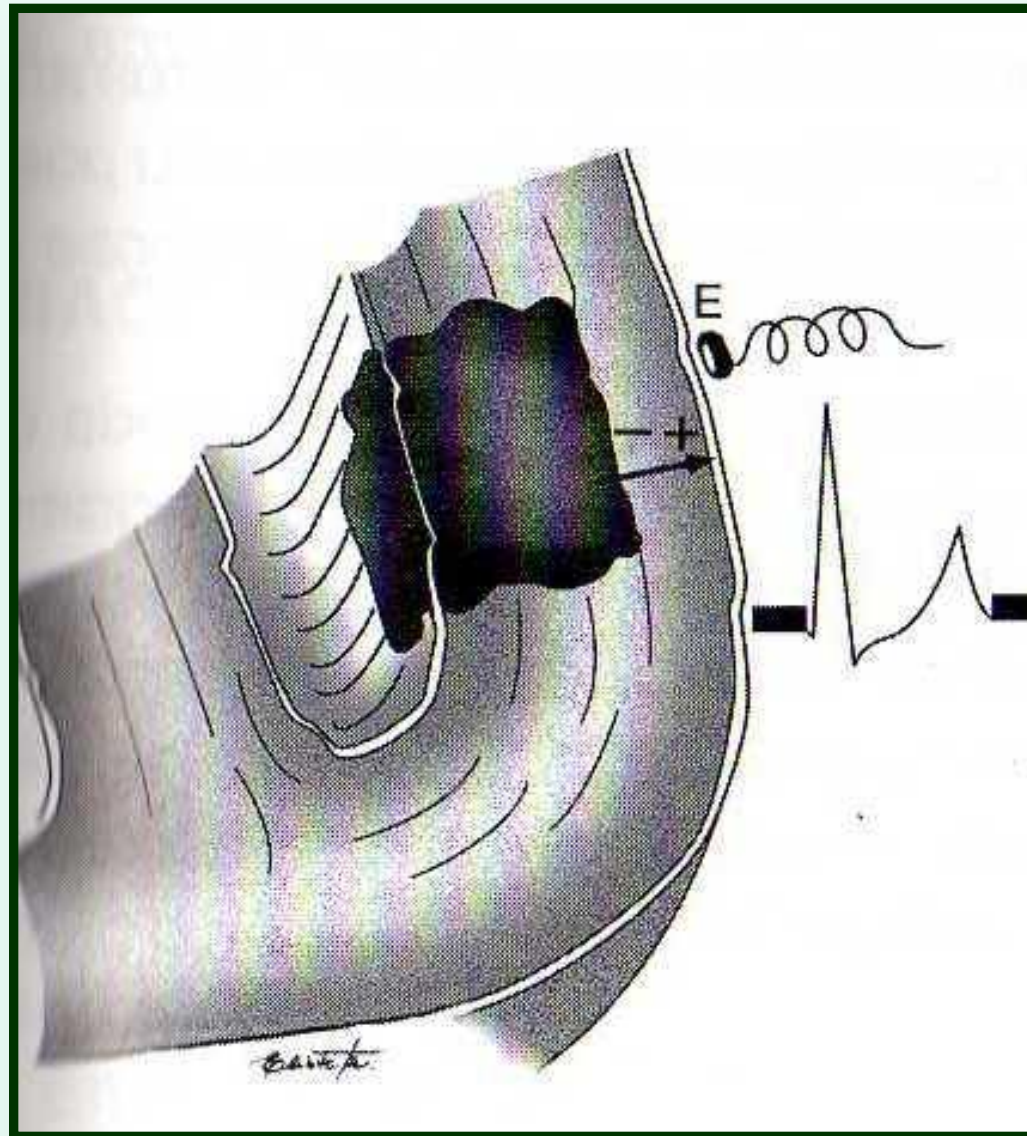




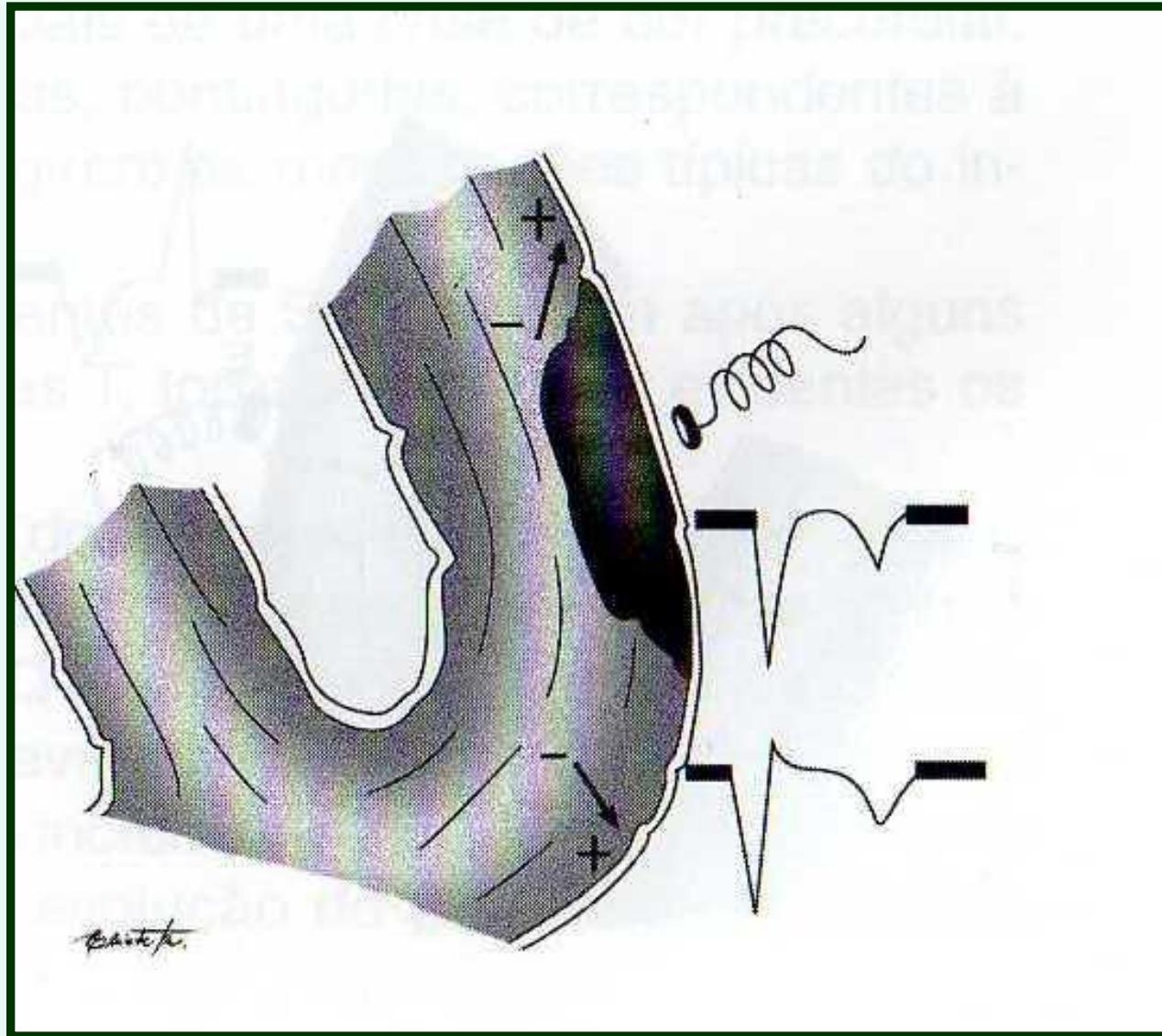
Necrose Miocárdica transmural



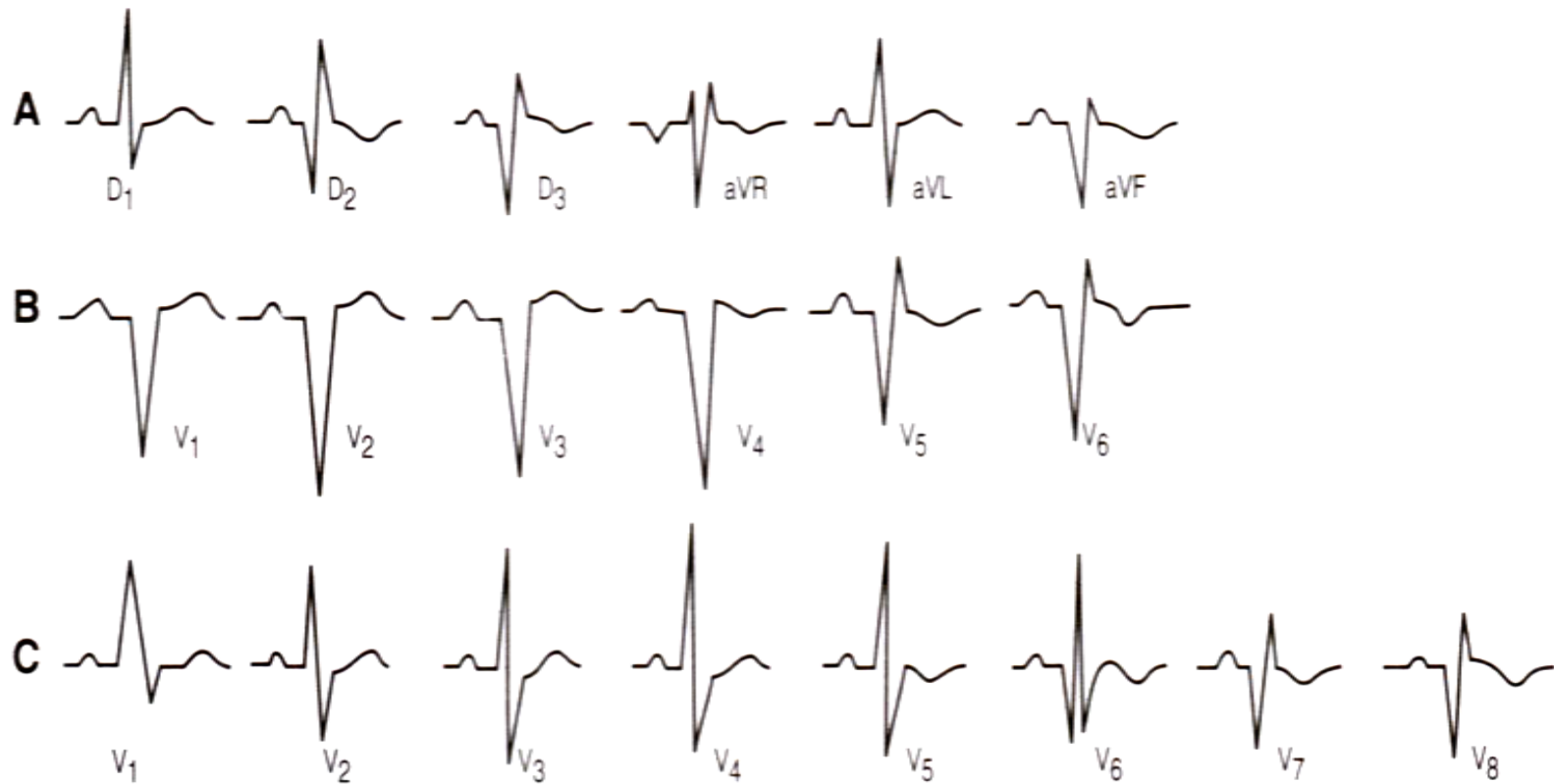
Necrose Miocárdica subendocárdica

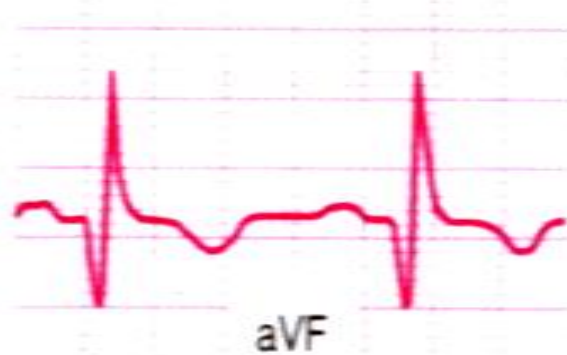
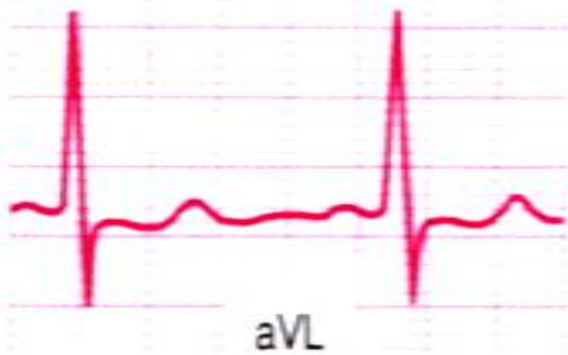
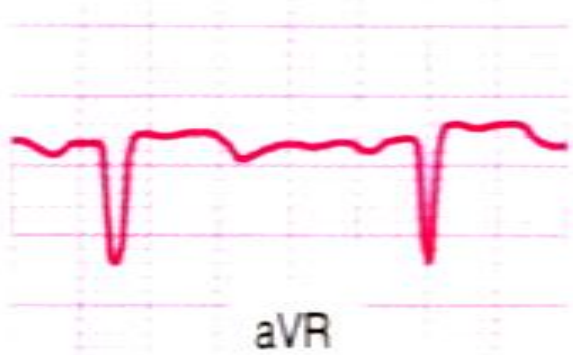
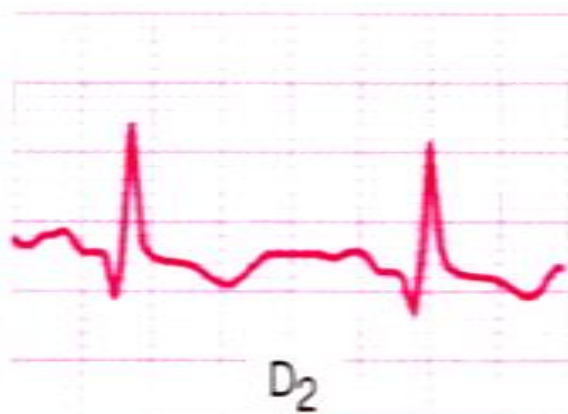


Necrose Miocárdica subepicárdica

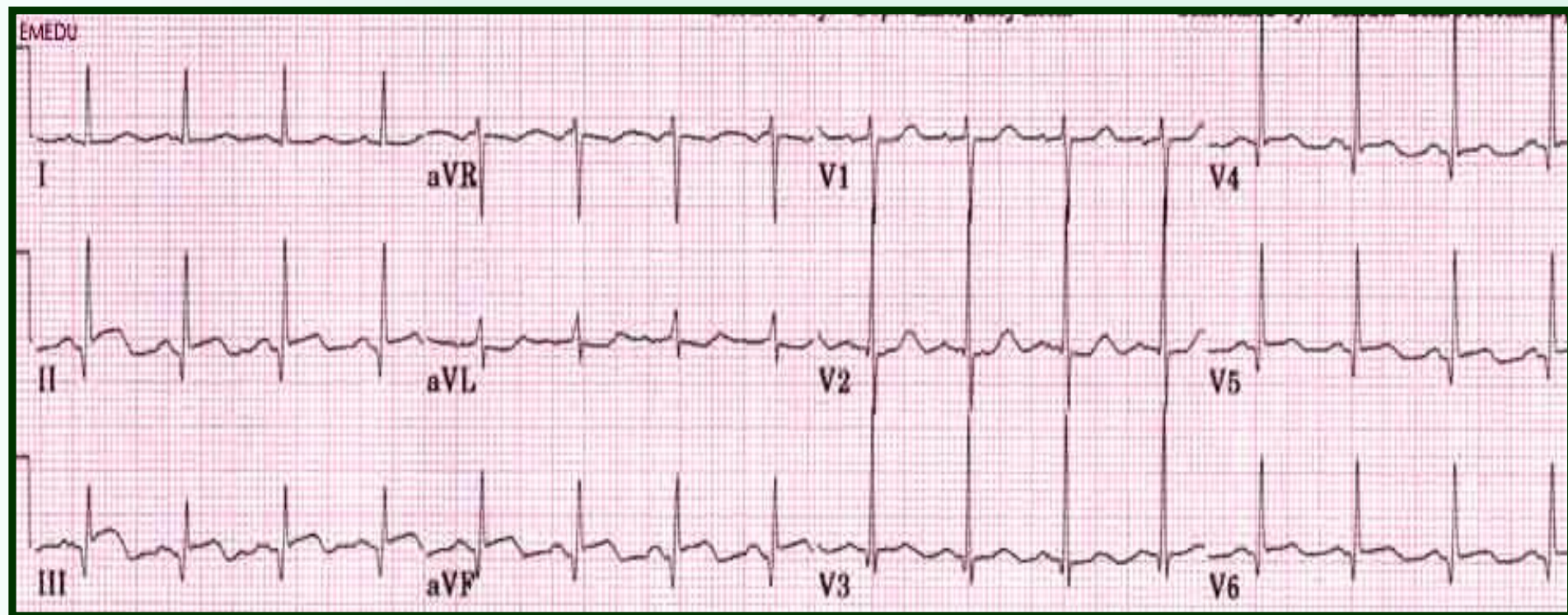


Manifestações Eletrocardiográficas da Necrose Miocárdica

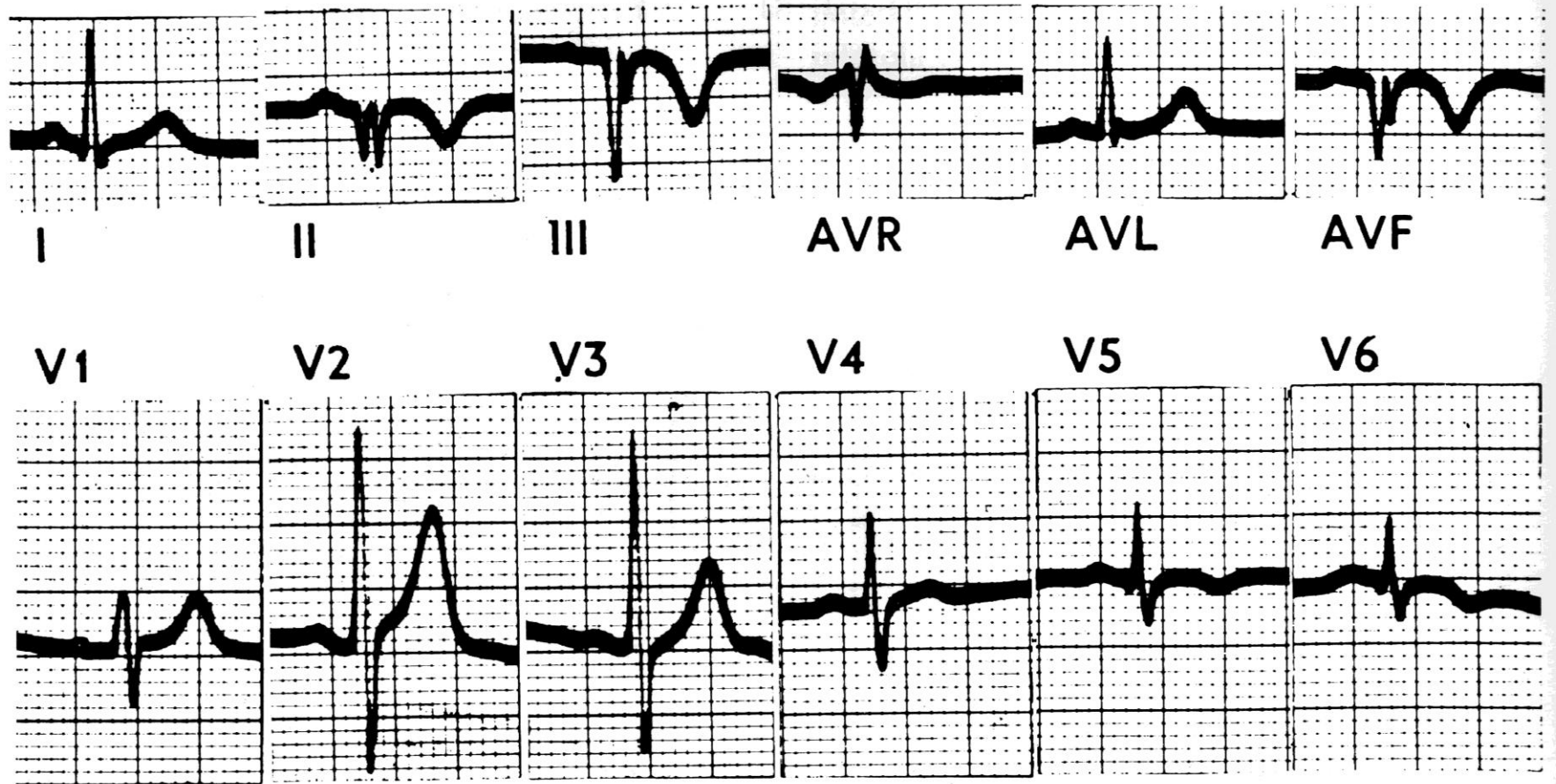




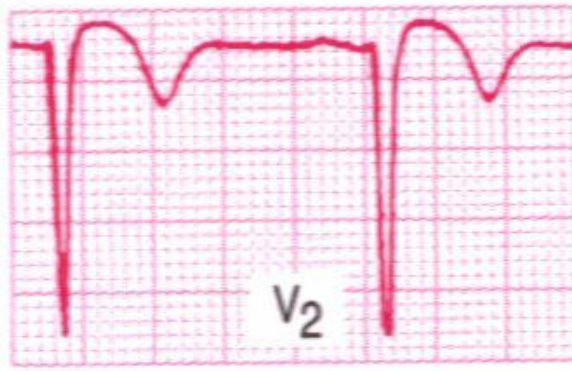
Necrose em Região Inferior

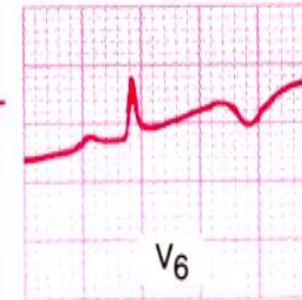
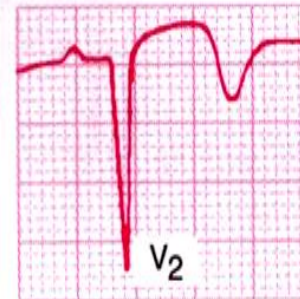
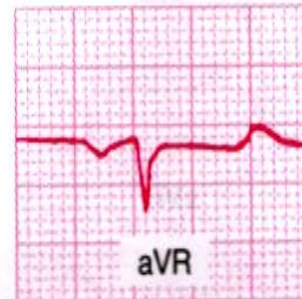


Necrose em Regiões Inferior e Dorsal



Necrose em Regiões Ântero-septal e Anterior





Localização Topográfica da Lesão

- ✓ Ântero-septal - Onda Q patológica em V1, V2, V3, V4
- ✓ Septal média (ou septal) - Onda Q patológica em V1, V2
- ✓ Septal baixa (anterior estrita) - Onda Q patológica em V3, V4
- ✓ Ântero-lateral (ou lateral) - Onda Q patológica em D1, aVL, V4-V6
- ✓ Lateral alta - Onda Q patológica em D1, aVL
- ✓ Anterior extensa - Onda Q patológica em D1, aVL, V1-V6

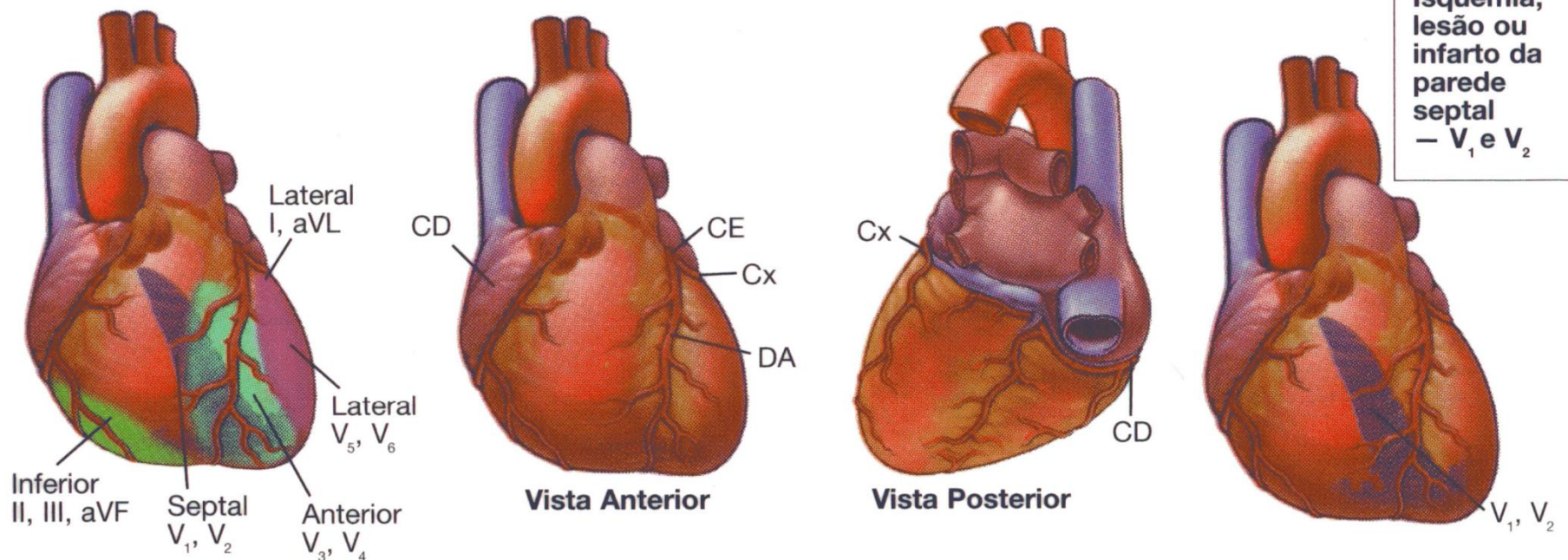


Localização Topográfica da Lesão

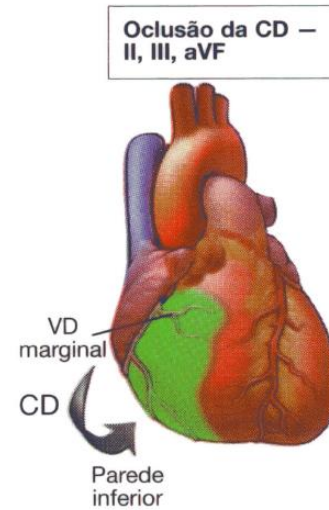
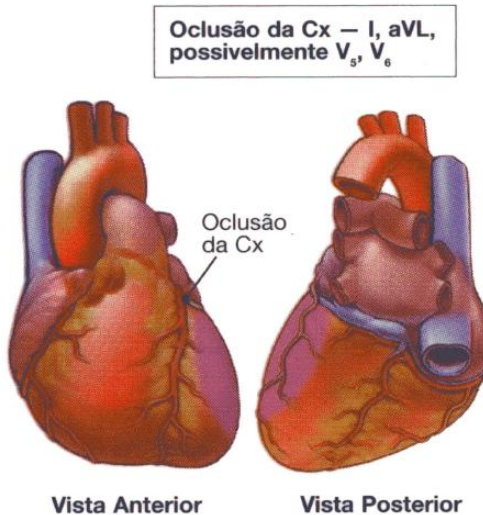
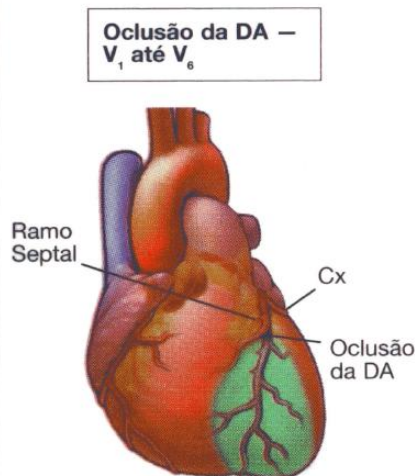
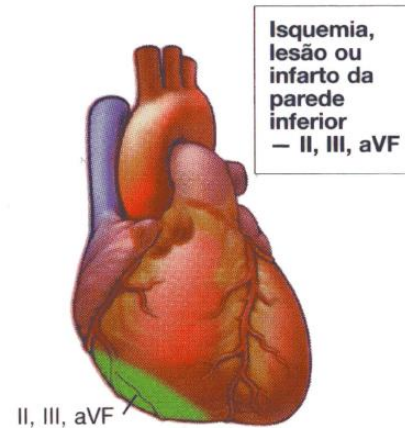
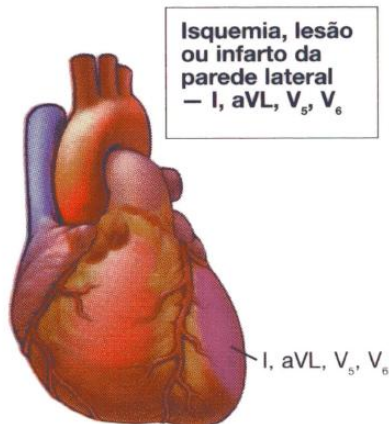
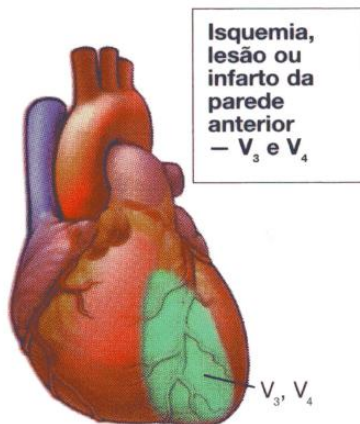
- ✓ Inferior ou diafragmática - Onda Q patológica em D2, D3, aVF
- ✓ Dorsal ou posterior - Onda Q patológica em V7, V8 (espelho V1-V2)
- ✓ Septal profunda - Onda Q patológica em D2, D3, aVF, V1-V3



Relação entre o ECG de 12 Derivações e a Anatomia Coronariana

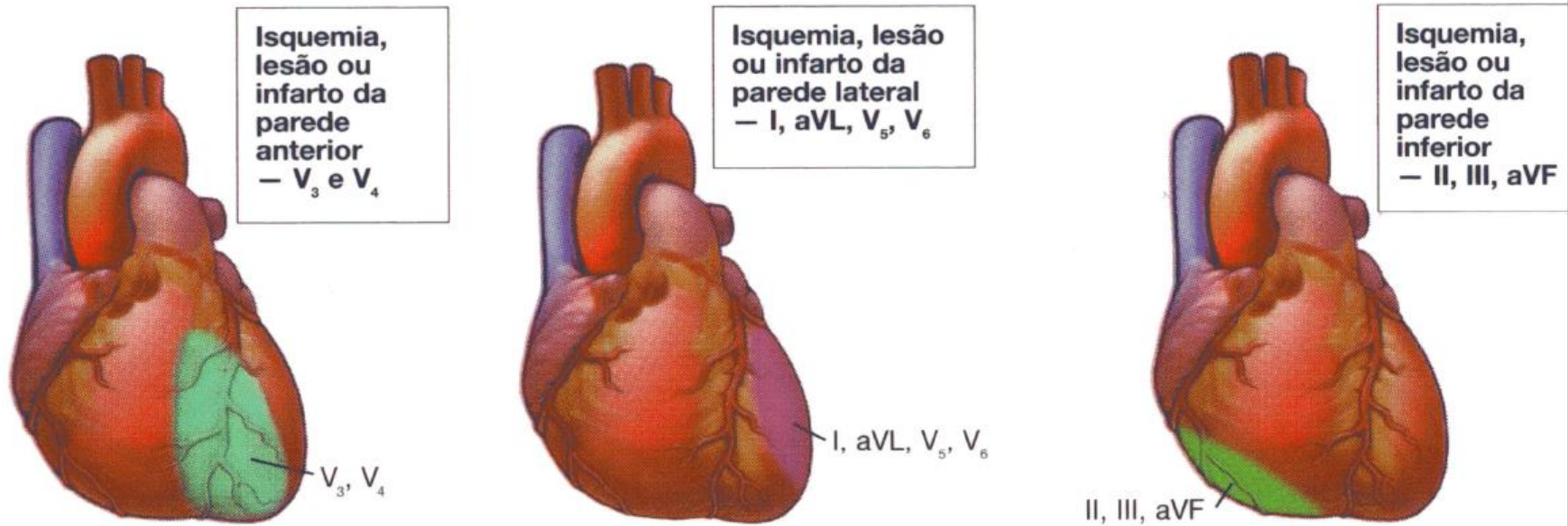


I lateral	aVR	V_1 septal	V_4 anterior
II inferior	aVL lateral	V_2 septal	V_5 lateral
III inferior	aVF inferior	V_3 anterior	V_6 lateral



I lateral	aVR	V ₁ septal	V ₄ anterior
II inferior	aVL lateral	V ₂ septal	V ₅ lateral
III inferior	aVF inferior	V ₃ anterior	V ₆ lateral

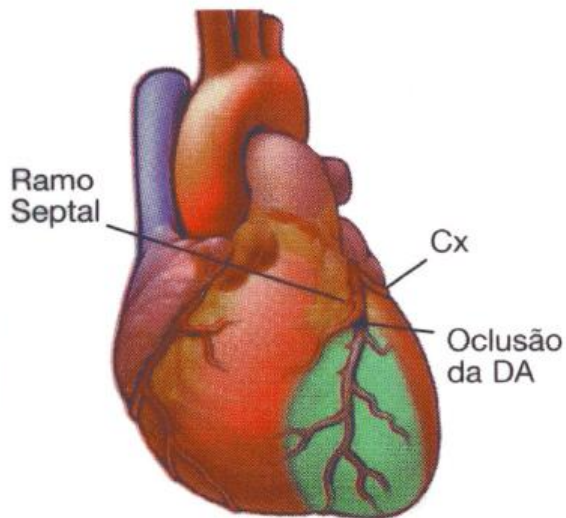
Relação entre o ECG de 12 Derivações e a Anatomia Coronariana



I lateral	aVR	V ₁ septal	V ₄ anterior
II inferior	aVL lateral	V ₂ septal	V ₅ lateral
III inferior	aVF inferior	V ₃ anterior	V ₆ lateral

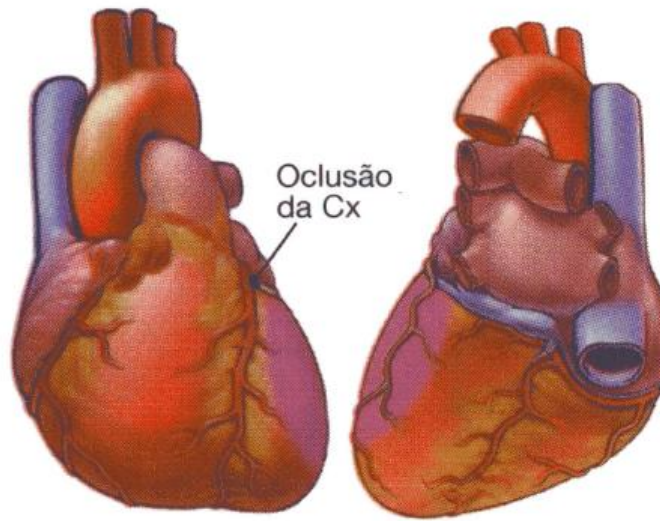
Relação entre o ECG de 12 Derivações e a Anatomia Coronariana

Oclusão da DA —
V₁ até V₆



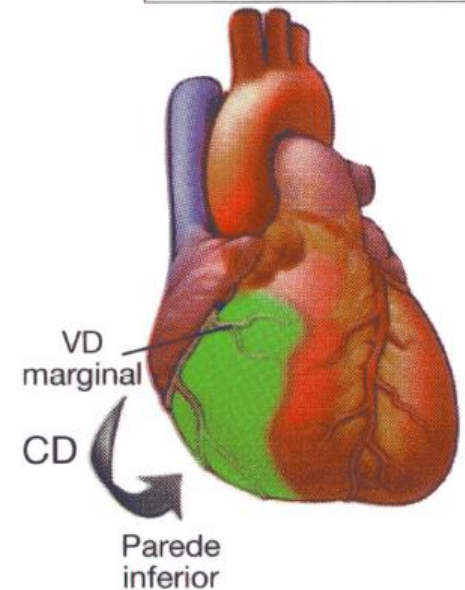
Vista Anterior

Oclusão da Cx — I, aVL,
possivelmente V₅, V₆

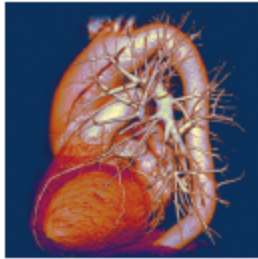


Vista Posterior

Oclusão da CD —
II, III, aVF



I lateral	aVR	V ₁ septal	V ₄ anterior
II inferior	aVL lateral	V ₂ septal	V ₅ lateral
III inferior	aVF inferior	V ₃ anterior	V ₆ lateral



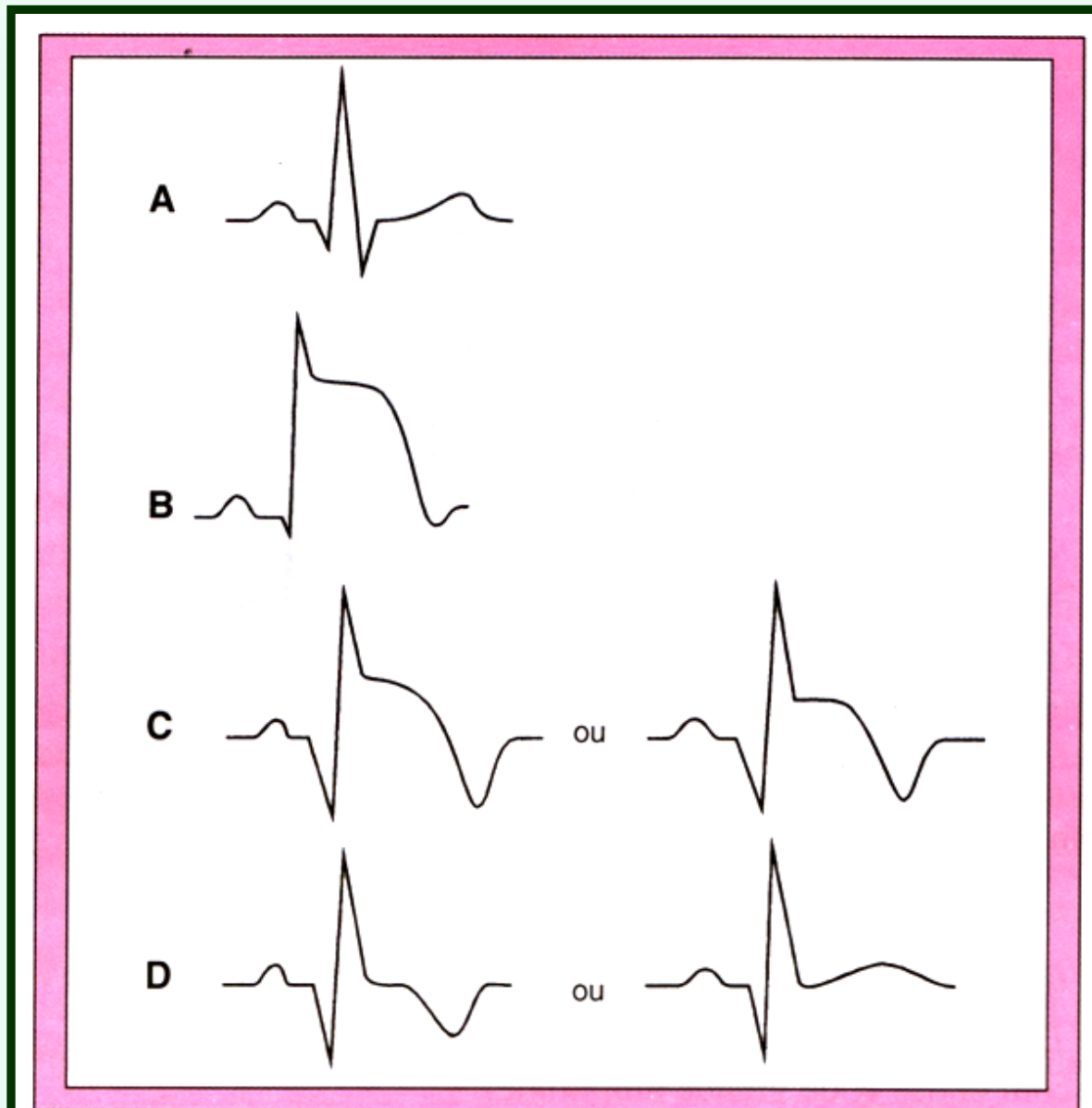
1

The Morphology of the Electrocardiogram

Antoni Bayés de Luna, Velislav N. Batchvarov and Marek Malik

Type of MI	Infarction area (CMR)	ECG pattern	Name given to MI	Most probable place of occlusion
ANTEROSEPTAL ZONE	A1 n=7		Q in V1-2 SE: 86% ES: 98%	Septal LAD
	A2 n=7		Q in V1-2 to V4-V6 SE: 86% ES: 98%	Apical/ anteroseptal LAD
	A3 n=6		Q in V1-2 to V4-V6 I and VL SE: 83% ES: 98%	Extensive anterior LAD
	A4 n=4		Q (qs or r) in VL (I) and sometimes V2-3 SE: 70% ES: 100%	Limited anterior LAD
INFEROLATERAL ZONE	B1 n=6		Q (qr or r) in I, VL, V5-6 and/or RS in V1 SE: 50% ES: 98%	Lateral LCX
	B2 n=8		Q in II, III, VF SE: 87.5% ES: 98%	Inferior RCA LCX
	B3 n=10		Q in II, III, VF (B2) + Q in I, VL, V5, 6 and / or RS in V1 (B1) SE: 70% ES: 100%	Inferolateral RCA LCX

Fases Evolutivas do Infarto



ECG no Diagnóstico do Infarto Agudo do Miocárdio

- ✓ Bloqueio de Ramo Esquerdo
- ✓ Ritmo de Marcapasso Artificial



Infarto em portadores de MP

✓ Estudo GUSTO: 17 pacientes

supra ST $\geq$ 1mm concordante com QRS

S=18%, E=94%

supra ST $\geq$ 5mm discordante com QRS

S=53%, E=88%

infra ST $\geq$ 1mm derivações V1-V3

S=29%, E=88%



Infarto em portadores de BRE

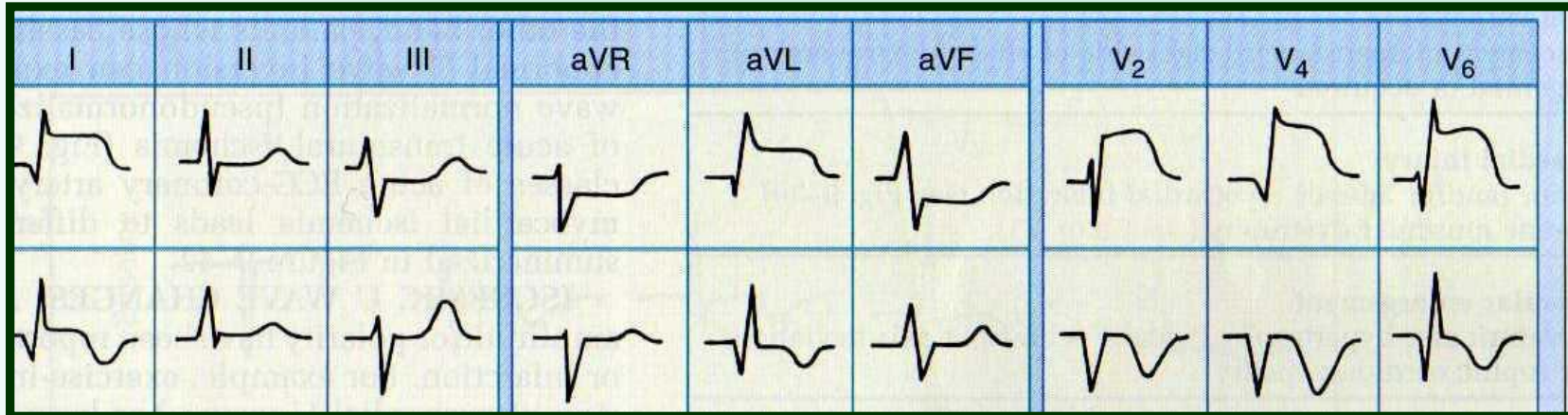
Crítérios	Sensibilidade	Especificidade
Supra ST>1mm (concordante com QRS)	73%	92%
Infra ST>1mm V1,V2 ou V3	25%	96%
Supra ST>5mm (discordante com QRS)	31%	92%
Onda T positiva V5 ou V6	26%	92%
Desvio do eixo E	72%	48%

Critérios	IAM não Q	IAM Q
Oclusão	rara	frequente
Circ colateral	frequente	rara
Pico CKMb	baixo	alto
Mortalidade precoce	baixa	alta
Mortalidade tardia	alta	baixa
Mortalidade total	semelhante	semelhante

Sequência do ECG com infarto antero-lateral com Q

Precoce

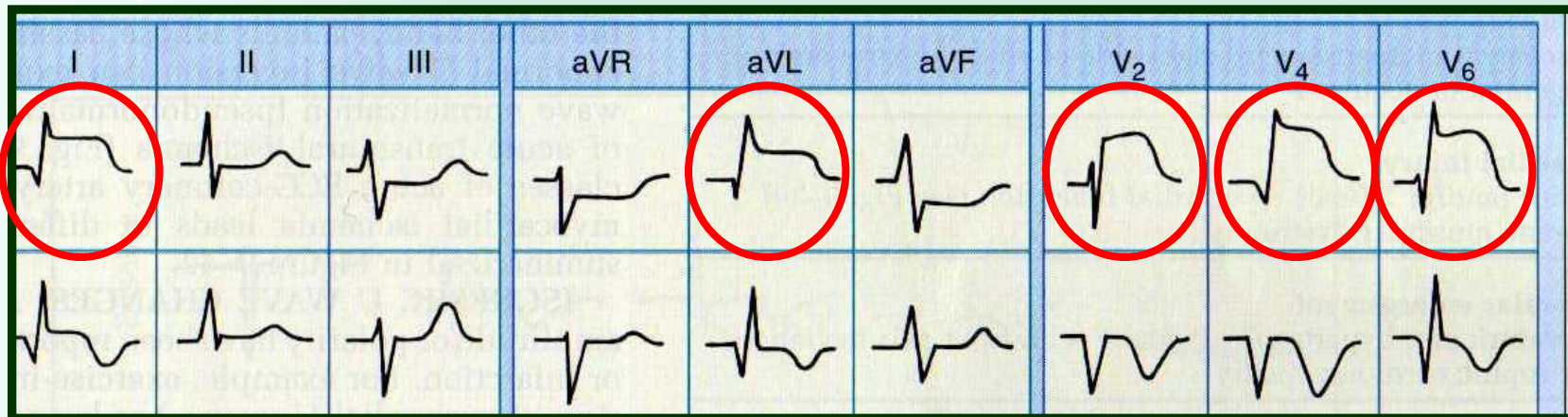
Evolução



Sequência do ECG com infarto antero-lateral com Q

Precoce

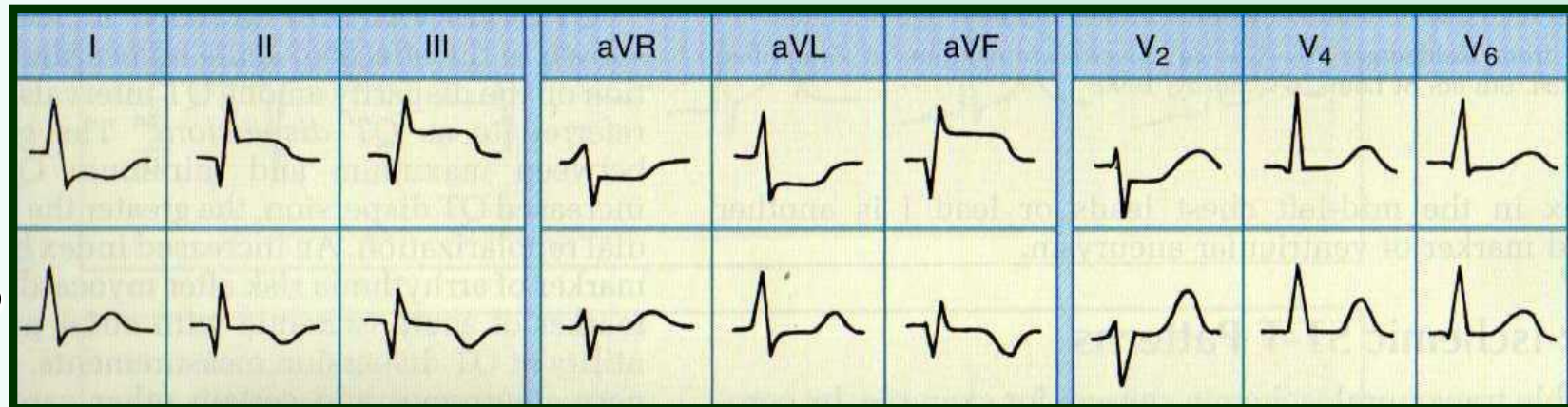
Evolução



Sequência do ECG com infarto inferior com Q

Precoce

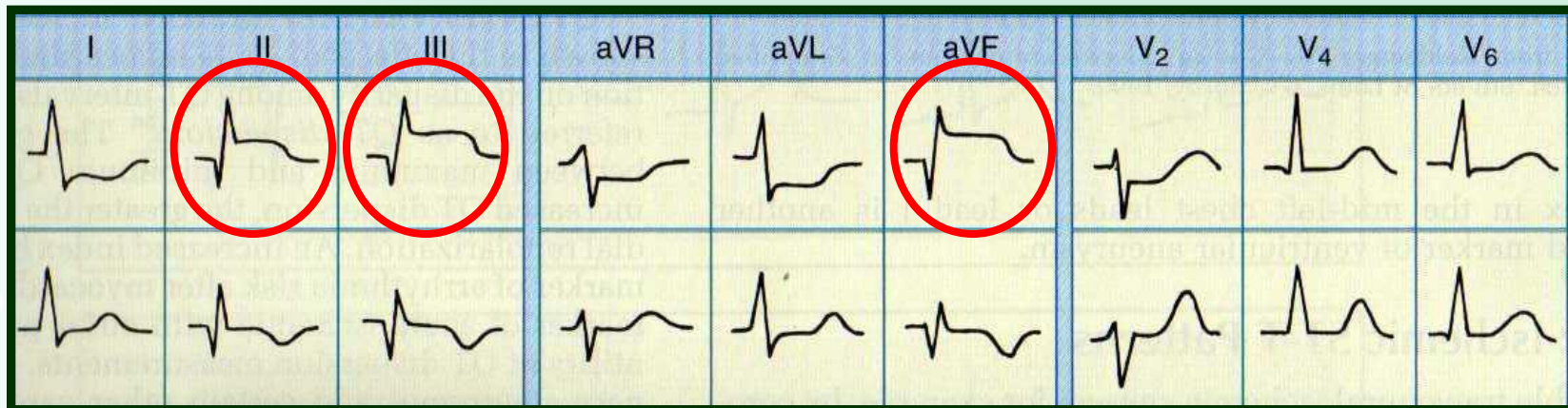
Evolução



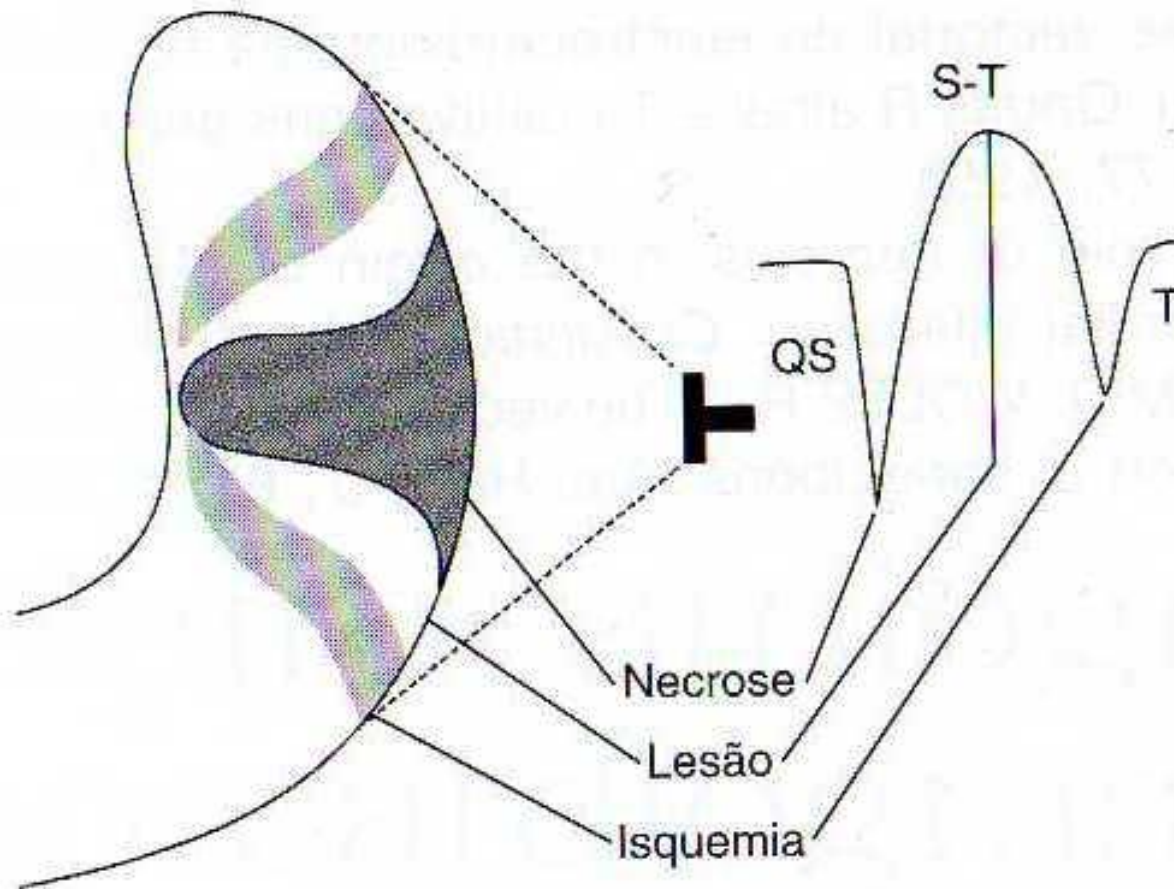
Sequência do ECG com infarto inferior com Q

Precoce

Evolução



Revisão - Isquemia Lesão e Necrose Miocárdica



Algoritmo de Síndromes Coronarianas Agudas

Desconforto torácico sugestivo de isquemia

Avaliação e cuidados pela equipe do serviço de emergência e preparo hospitalar:

- Monitorize e dê suporte ABC. Esteja preparado para realizar RCP e desfibrilação
- Administre **oxigênio**, **ácido acetilsalicílico**, **nitroglicerina** e **morfina**, se necessário
- Se disponível, realize um ECG de 12 derivações; se houver elevação do ST:
 - Notifique o hospital que receberá o paciente, transmita os resultados ou sua interpretação
 - Inicie a lista de checagem para a terapia fibrinolítica
- O hospital notificado deve mobilizar seus recursos para responder ao IAMEST

Avaliação imediata no PS (< 10 min)

- Cheque os sinais vitais; avalie a saturação de oxigênio
- Estabeleça acesso IV
- Faça/revise o ECG de 12 derivações
- Faça história e exame físico breves, dirigidos
- Revise/complete a lista de checagem para fibrinolíticos (Figura 1); cheque as contra-indicações (Tabela 1)
- Determine os níveis iniciais de marcadores cardíacos, além de eletrólitos e provas de coagulação
- Faça uma radiografia de tórax (< 30 min)

Tratamento geral imediato no PS

- Inicie a administração de **oxigênio** a 4 l/min; mantenha a saturação O₂ é subscrito >90%
- **Ácido acetilsalicílico** 160 a 325 mg (se não tiver sido administrada pela equipe do serviço de emergência)
- **Nitroglicerina** sublingual, spray ou IV
- **Morfina IV**, se não houver alívio da dor com nitroglicerina

Revise o ECG inicial de 12 derivações

Revise o ECG inicial de 12 derivações

Elevação do segmento ST ou BRE novo ou presumivelmente novo; forte suspeita de lesão IAM com Elevação do Segmento ST (IAMEST)

Depressão do segmento ST ou inversão dinâmica da onda T; forte suspeita de isquemia
Angina Instável de Alto Risco/IAM Sem Elevação do Segmento ST (AI/IAMSEST)

Normal ou alterações não diagnósticas no segmento ST e na onda T
AI de Risco Intermediário/Baixo

Inicie terapia adjuvante como indicado
Não adie a reperfusão

- Bloqueadores dos receptores β -adrenérgicos
- Clopidogrel
- Heparina (HNF ou HBPM)

Inicie terapia adjuvante como indicado

- Nitroglicerina
- Bloqueadores dos receptores β -adrenérgicos
- Clopidogrel
- Heparina (HNF ou HBPM)
- Inibidor de glicoproteína IIb/IIIa

Desenvolve critérios de risco alto ou intermediário OU troponina - positiva?

Não

Considere encaminhar para unidade de dor torácica no PS ou leito monitorizado. Siga os passos:

- Marcadores cardíacos seriados (inclusive troponina)
- Repita o ECG/monitorização contínua do segmento ST
- Considere teste de estresse

Desenvolve critérios de risco alto ou intermediário OU troponina - positiva?

Não

Se não houver evidência de isquemia ou de infarto, alta + seguimento

Tempo desde o início dos sintomas ≤ 12 horas?

>12 horas

≤ 12 horas

Interne em um leito monitorizado
Avalie a condição de risco

Estratégia de reperfusão:
Terapia definida pelos critérios do paciente e da instituição

- **Tenha em mente os objetivos da reperfusão:**
 - Tempo porta-insufilação do balão (ICP) de 90 min
 - Tempo porta-agulha (fibrinólise) de 30 min
- Mantenha as terapias adjuvantes e:
 - IECAs/bloqueadores do receptor da angiotensina (BRA) nas primeiras 24 horas do início dos sintomas
 - Inibidor da HMG CoA redutase (terapia com estatinas)

Paciente de alto risco:

- Dor torácica isquêmica refratária
- Desvio ST recorrente/persistente
- Taquicardia ventricular
- Instabilidade hemodinâmica
- Sinais de insuficiência cardíaca
- Estratégias invasivas precoces, incluindo cateterização e revascularização por choque até 48 horas após um IAM

Continue a administrar ácido acetilsalicílico, heparina e outras terapias, conforme indicado.

- IECA/BRA
- Inibidor da HMG CoA redutase (terapia com estatinas)

Sem alto risco: cardiologia para estratificação do risco

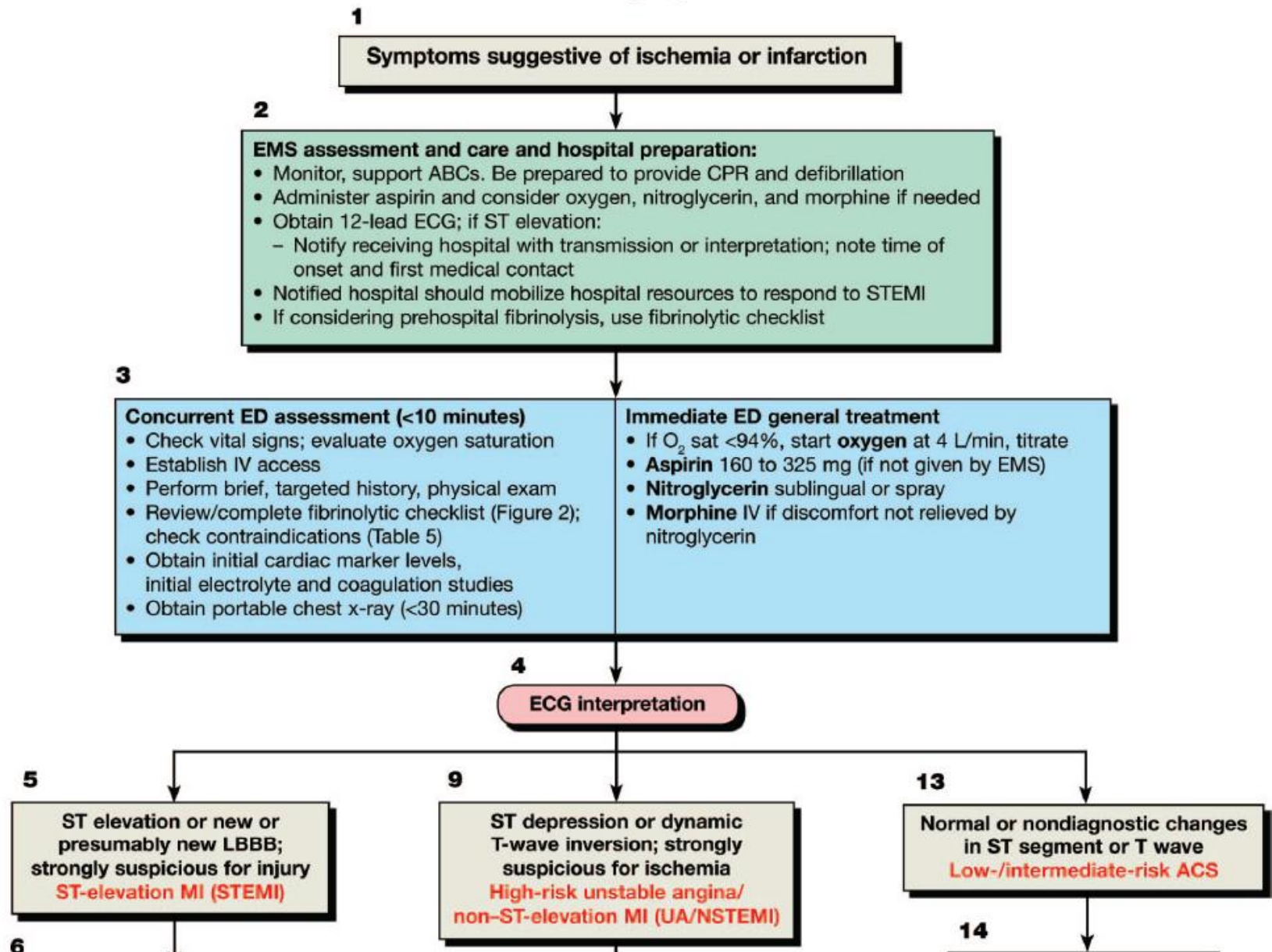


Part 10: Acute Coronary Syndromes

2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care

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Acute Coronary Syndromes



Diretrizes da Sociedade Brasileira de Cardiologia sobre
Análise e Emissão de Laudos Eletrocardiográficos (2009)

Diretrizes



10.1. Análise topográfica das manifestações isquêmicas

- a) *Parede anterosseptal* - Derivações V1, V2, V3;
- b) *Parede anterior* - Derivações V1, V2, V3 e V4;
- c) *Parede anterolateral* - Derivações V4 a V5, V6, D1 e AVL;
- d) *Parede anterior extensa* - V1 a V6 , D1 e aVL;
- e) *Parede lateral alta* - D1 e aVL;
- f) *Parede inferior* - D2, D3 e aVF;
- g) *Parede dorsal* - V7 e V8.

10.2. Infartos de localização especial

10.2.1. *Infarto do miocárdio de ventrículo direito*

Elevação do segmento ST em derivações precordiais direitas (V1, V3R, V4R, V5R e V6R), particularmente com elevação do segmento ST > 1 mm em V4R. A elevação do segmento ST nos infartos do VD aparece por um curto espaço de tempo devido ao baixo consumo de oxigênio da parede do VD. Geralmente, este infarto associa-se ao infarto da parede inferior e/ou lateral do ventrículo esquerdo⁶⁶.

10.2.2. *Infarto atrial*

Visível pela presença de desnivelamentos do segmento PR $> 0,5$ mm. Pode associar-se a arritmias atriais⁶⁷.

10.5. Diagnósticos diferenciais⁶⁹

10.5.1. *Isquemia subepicárdica*

Isquemia subepicárdica deve ser diferenciada das alterações secundárias da repolarização ventricular em SVE ou bloqueios de ramos (aspecto assimétrico da onda T).

10.5.2. *Infarto agudo do miocárdio (IAM) com supra de ST*

O infarto agudo do miocárdio (IAM) com supra de ST deve ser diferenciado das seguintes situações:

- a) Repolarização precoce;
- b) Pericardite e miocardite;
- c) IAM antigo com área discinética e supradesnível persistente;
- d) Quadros abdominais agudos;
- e) Hiperpotassemia;
- f) Síndromes catecolaminérgicas.

10.7. Normas na suspeita clínica de doença isquêmica aguda

a) Rapidez na execução do exame de emergência
- Conforme as diretrizes sobre conduta nas síndromes coronarianas isquêmicas, o paciente deve obter o resultado do ECG nos primeiros 10 minutos de sua admissão no serviço de emergência.

b) Reavaliação do traçado - Até 50% dos portadores de doença isquêmica aguda apresentam seu primeiro traçado normal ou sem características diagnósticas, devendo, portanto, o traçado ser repetido no mínimo uma vez após 2 horas de observação clínica em todo portador de dor torácica.

10.6.2. Infarto do miocárdio na presença de bloqueio de ramo esquerdo (BRE)

A presença de BRE dificulta o reconhecimento de infarto do miocárdio associado. Os desnivelamentos do segmento ST podem permitir a identificação de infarto do miocárdio recente, de acordo com os critérios definidos por Sgarbossa e cols.⁷¹.

a) Elevação do segmento ST $\geq 1,0$ mm em concordância com o QRS/T; depressão do segmento ST $\geq 1,0$ mm em V1, V2 e V3;

b) Elevação do segmento ST $\geq 5,0$ mm em discordância com o QRS/T.