

BİRİNCİ BASAMAK İÇİN TEMEL EKG OKUMA BECERİSİ

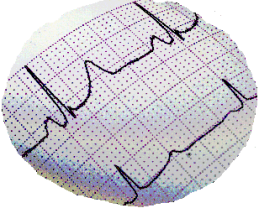


Doç. Dr. Turan SET

E-mail : turanset@yahoo.com

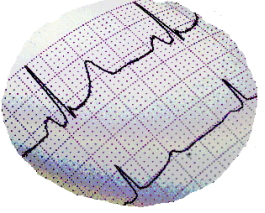
Hiçbir şey basit anlatılamayacak kadar karmaşık değildir

Albert Einstein



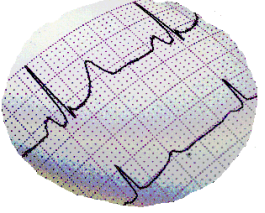
AMAÇ

- Birinci basamakta EKG deęerlendirmede gerekli olan temel becerileri kazanmak.



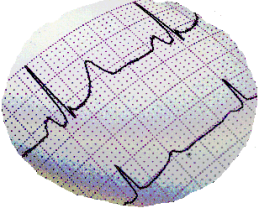
Öğrenim hedefleri

- Normal EKG'yi tanıyabilmek
- Birinci basamakta en sık görülen EKG tanılarını ayırt edebilmek
- Kalbin elektrik iletisi hakkında temel bilgi sahibi olmak
- EKG değerlendirmede sistematik bir yaklaşım kazanmak



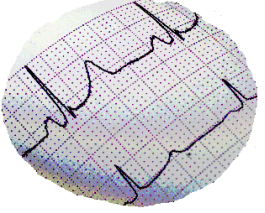
Ne Zaman EKG Çekeriz?

- Göğüs ağrısı (%57.1)
- Bayılma - çarpıntı (%30.2)
- Nefes darlığı (%4.7)
- Hipertansiyon (%3.0)
- Diğer (%5.0)



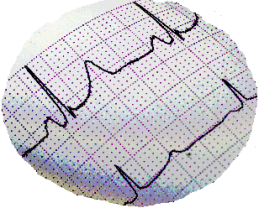
EKG'de Neler Buluruz?

	%
Normal sinüs ritmi	22
Atriyal fibrilasyon	10
Non-spesific ST ve/ veya T dalga değışiklikleri	10
Aritmiler	8,16
Miyokard iskemisi düşündüren ST / T değışiklikleri	7
MI (eski)	6
Ventriküler prematüre atımlar	5
Kalpte Büyüme	5
Erken repolarizasyon	5
Sağ dal bloğu (inkomplet)	3

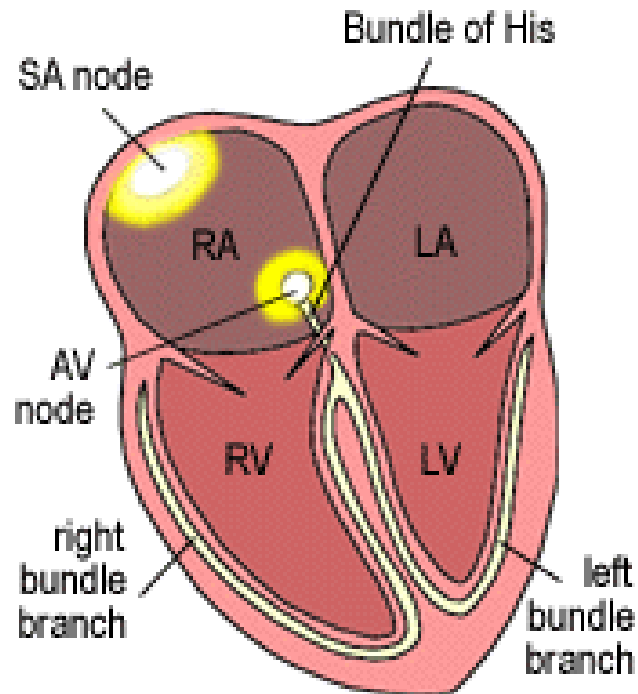


EKG'de Neler Buluruz?

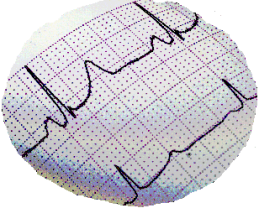
	%
Sol dal bloęu (inkomplet)	3
Birinci derece AV blok	2
Sol ön dalcık bloęu	2
MI (yeni ve yakın)	2
Atrial flutter	1
Saę dal bloęu (komplet)	1
Sol dal bloęu (komplet)	1
Uzamıř QT	0,7
Akut perikardit düřündüren ST / T deęiřiklikleri	0,5
Pacemaker ritmi	0,5



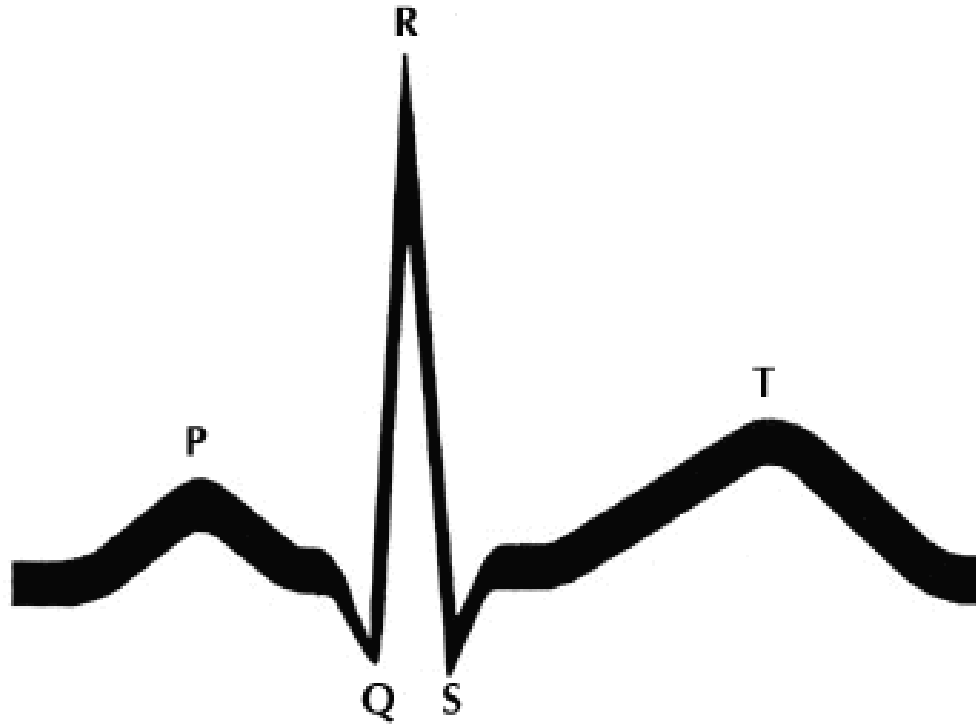
Kalbin uyarı iletimi

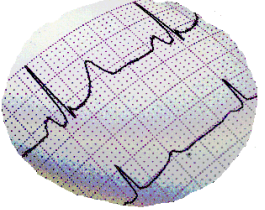


During sinus rhythm, the SA node serves as the heart's pacemaker while the AV node acts as the gatekeeper to the ventricles

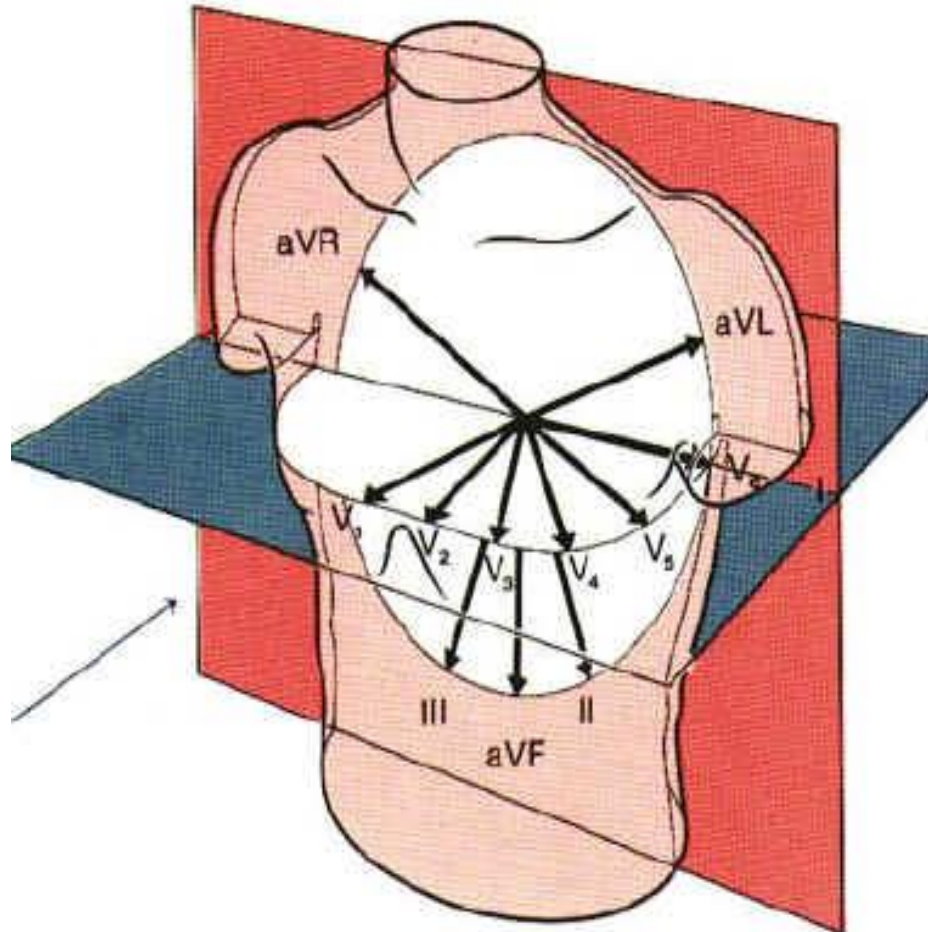


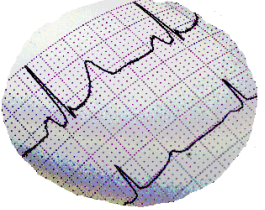
Dalgaların adlandırılması



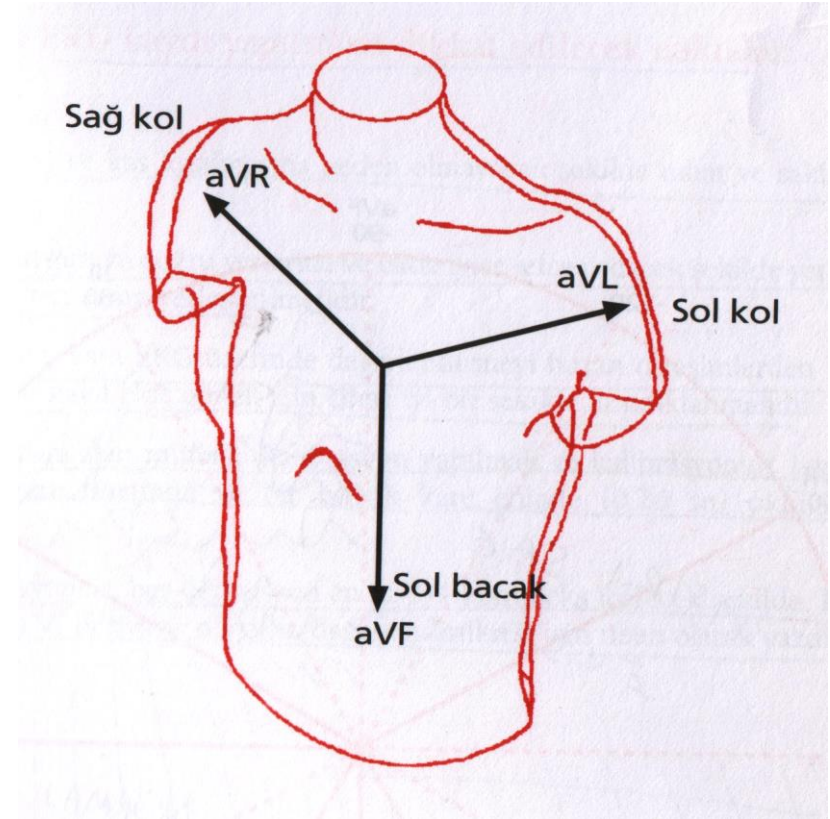
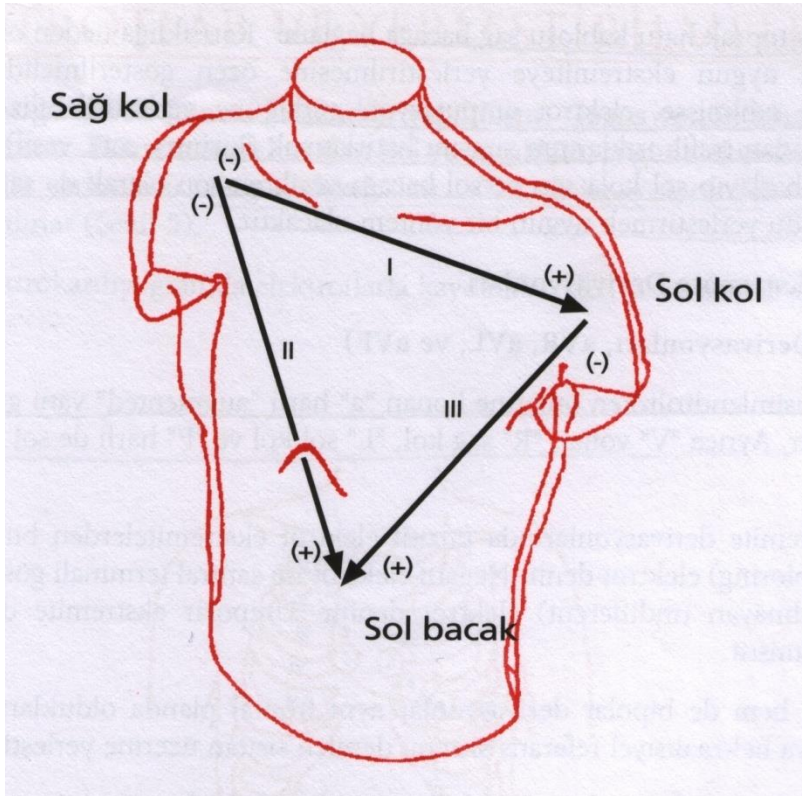


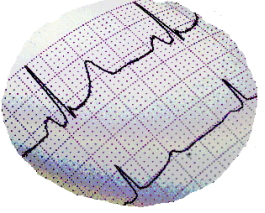
Derivasyonlar



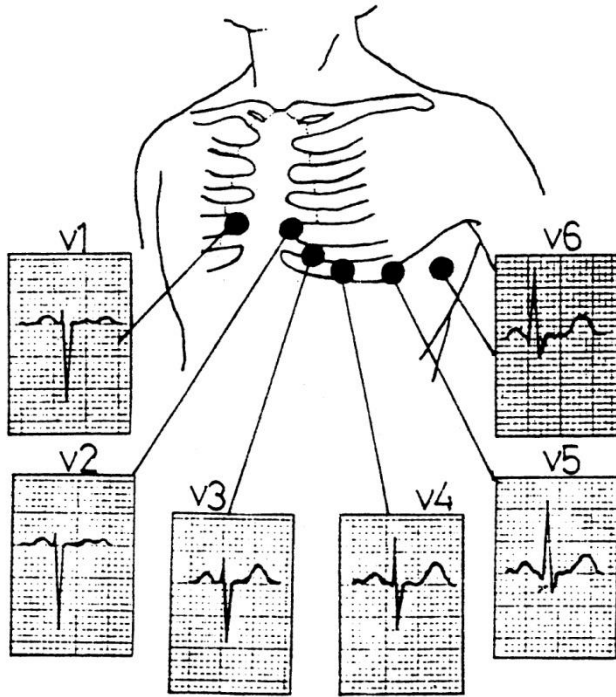


Derivasyonlar

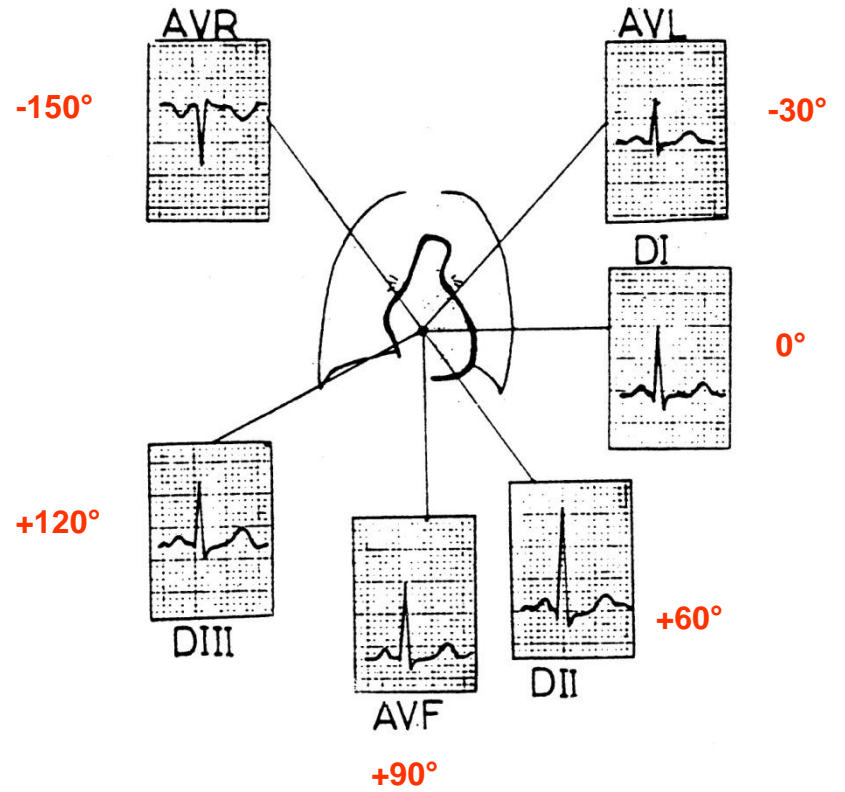


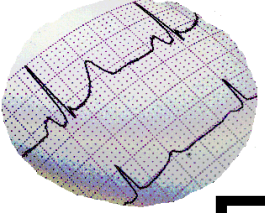


Göğüs derivasyonları

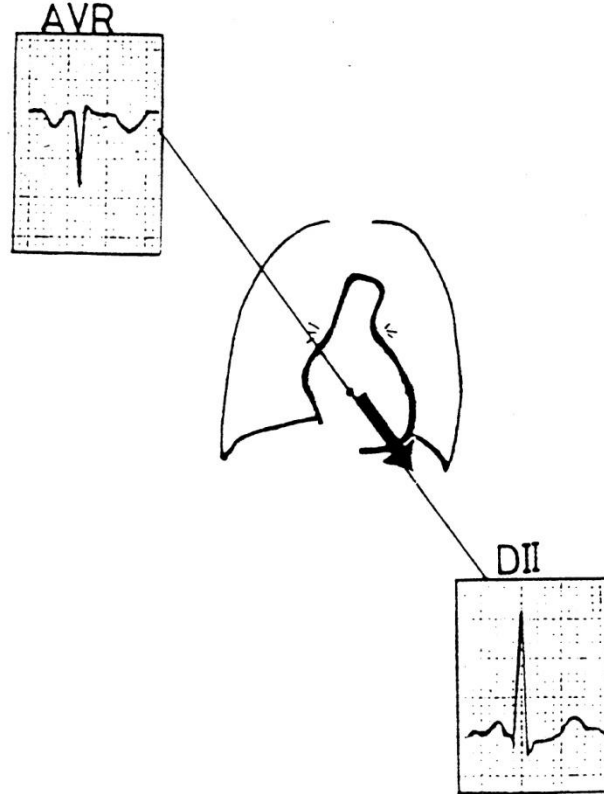


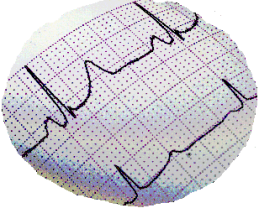
Ekstremité derivasyonları



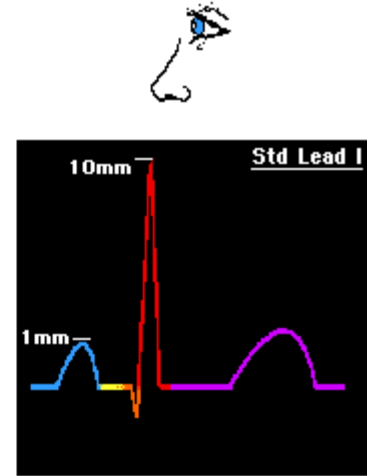
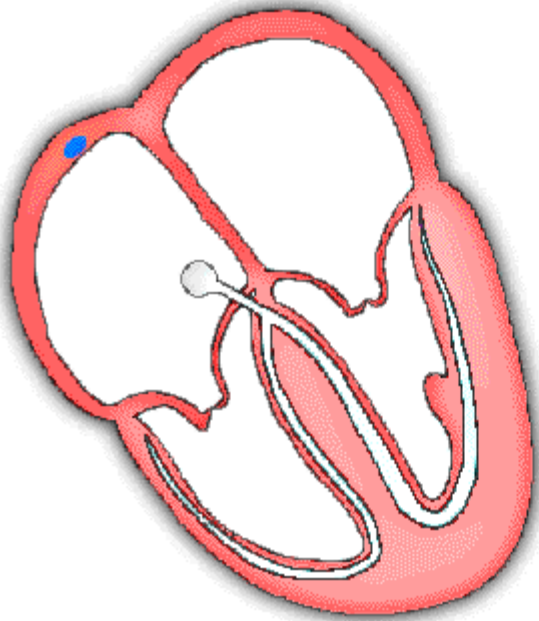
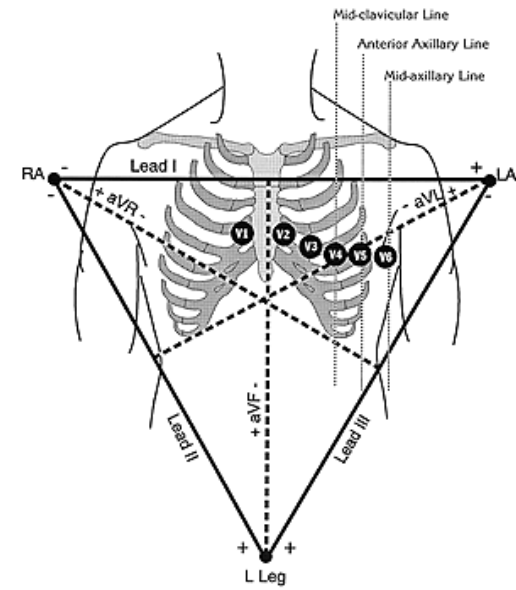


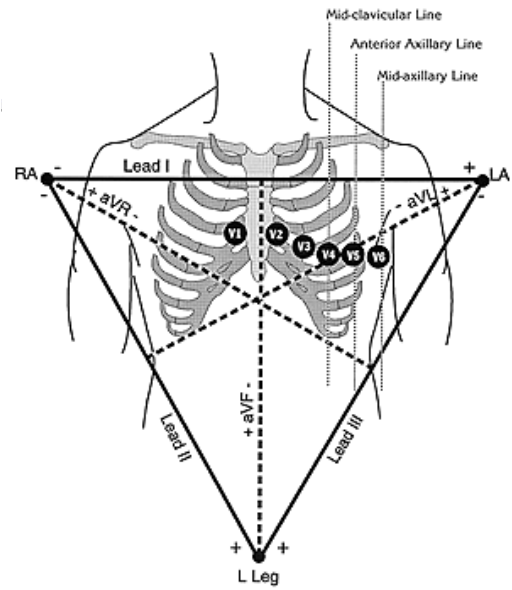
EKG'de dalgalar nasıl oluşur?



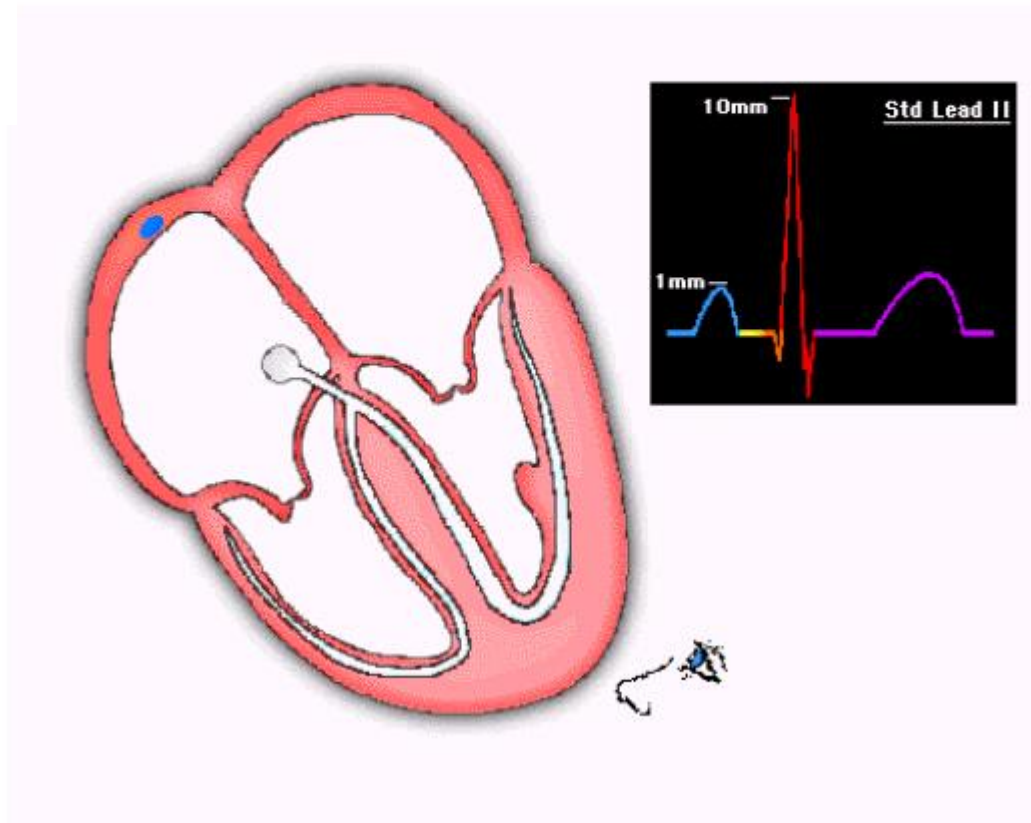


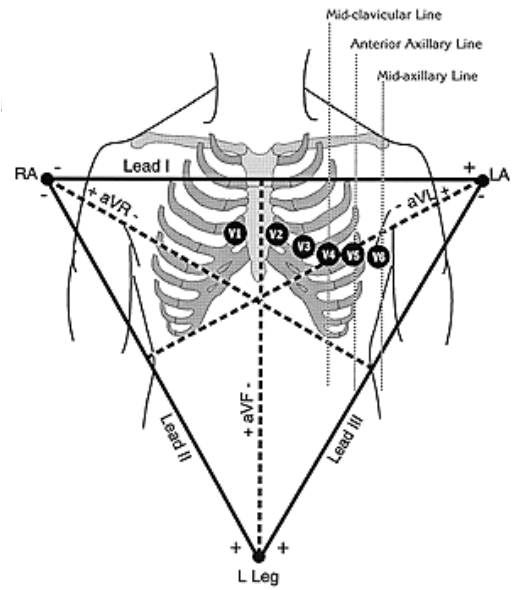
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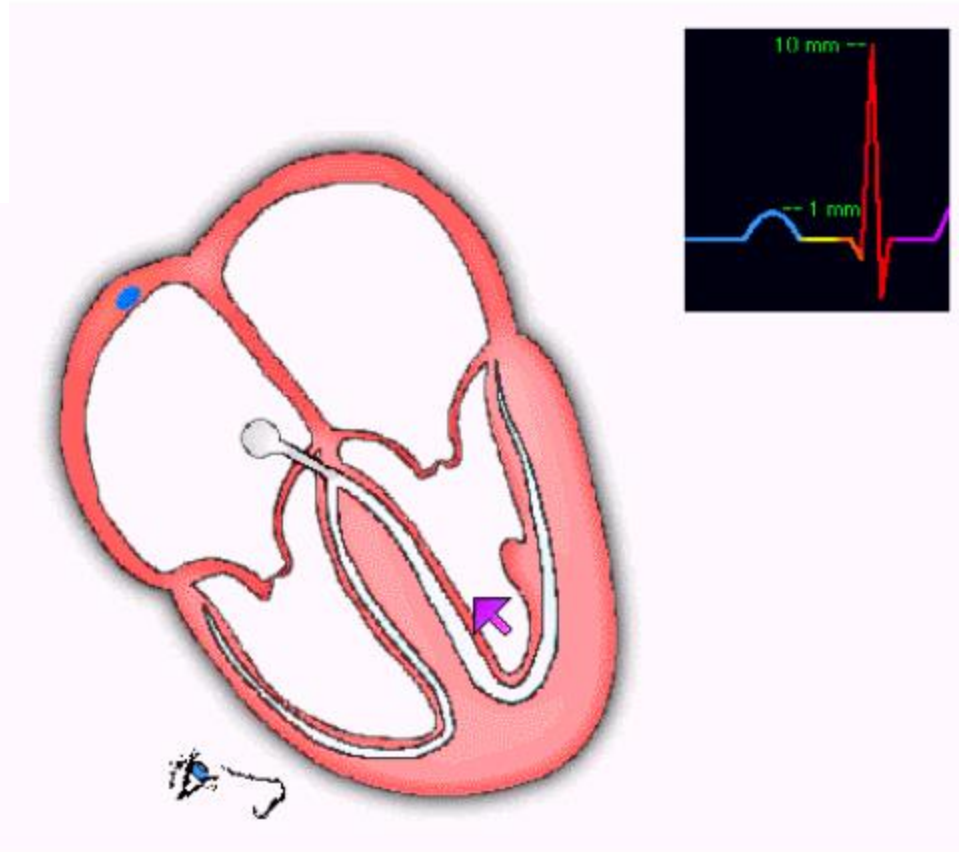


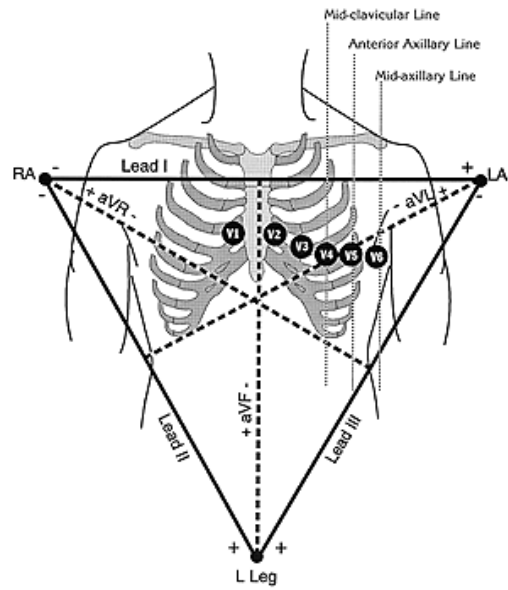
D II



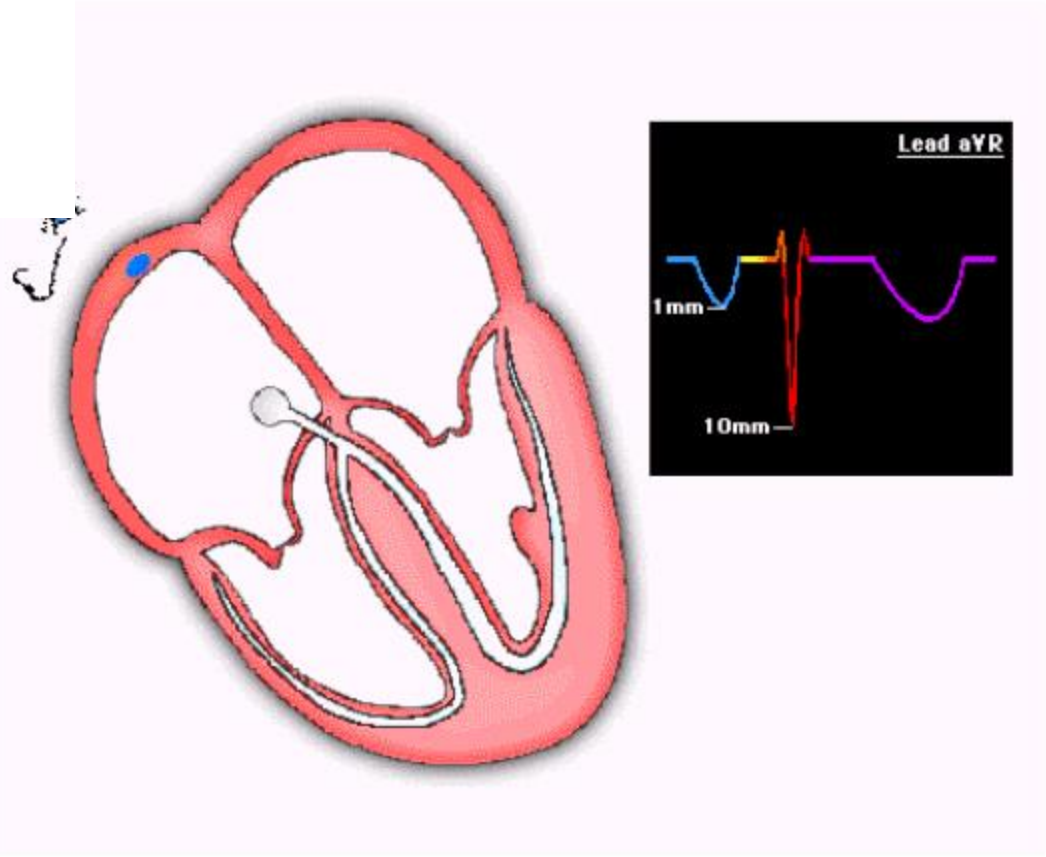


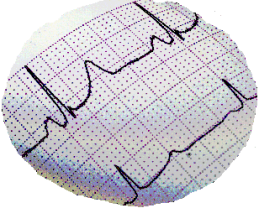
D III



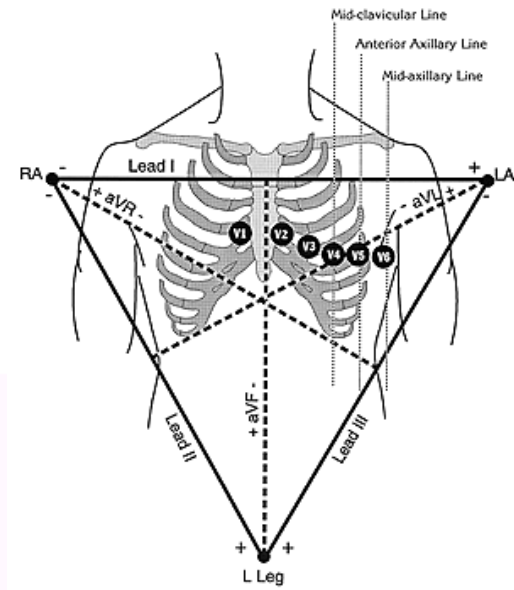


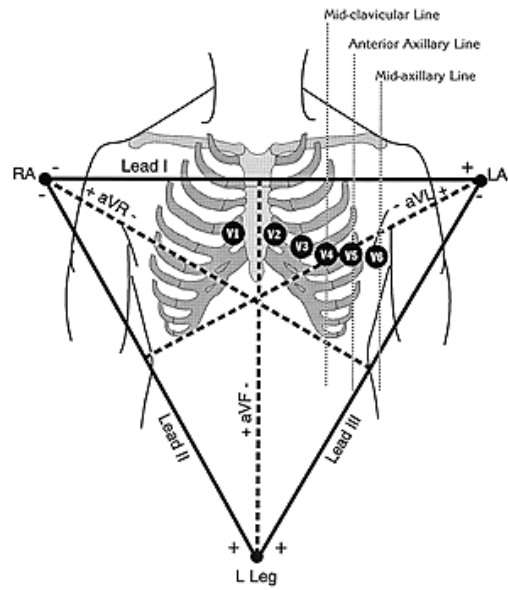
aVR



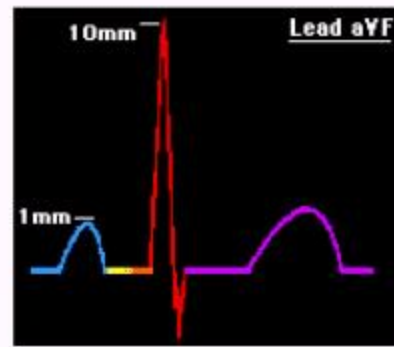
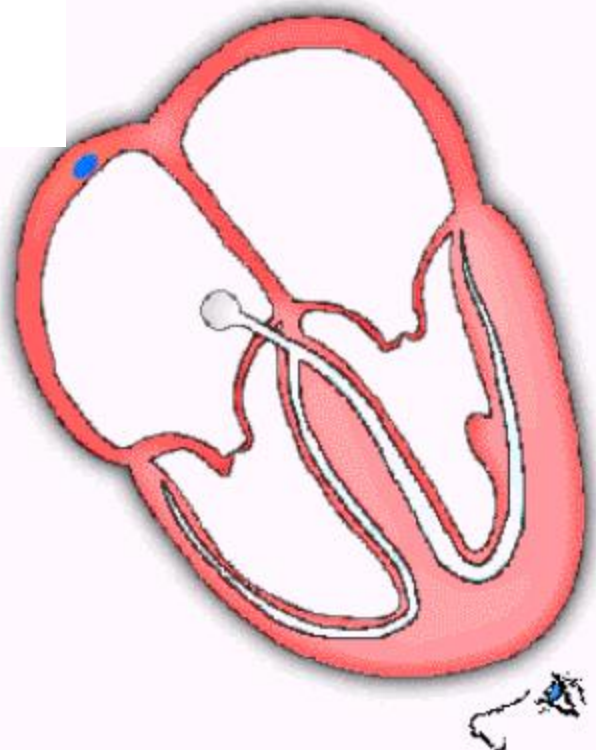


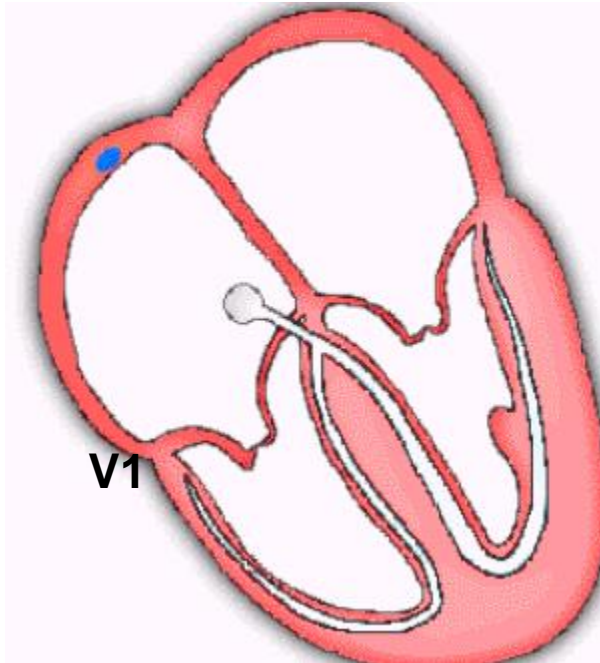
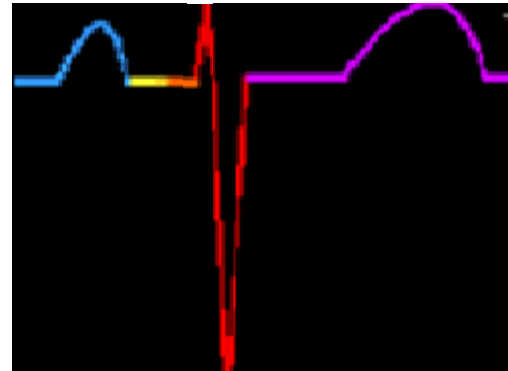
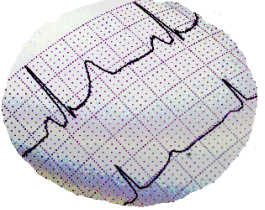
aVL

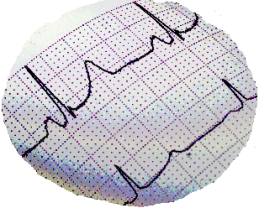




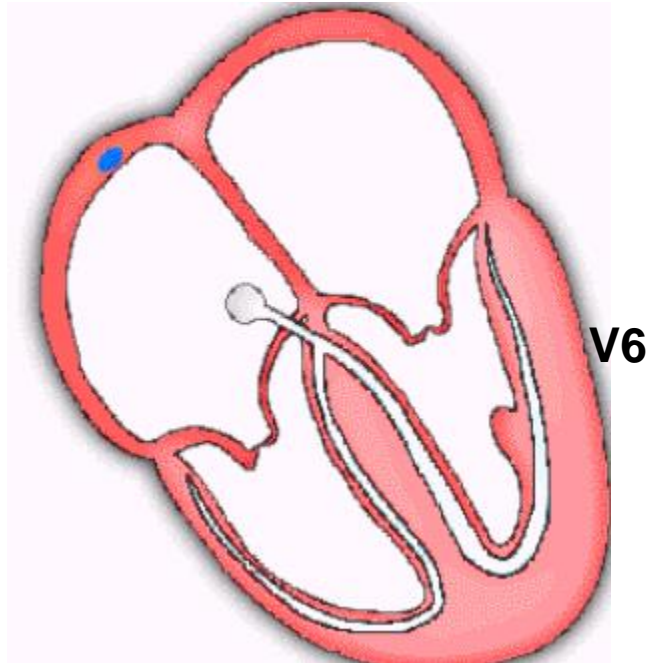
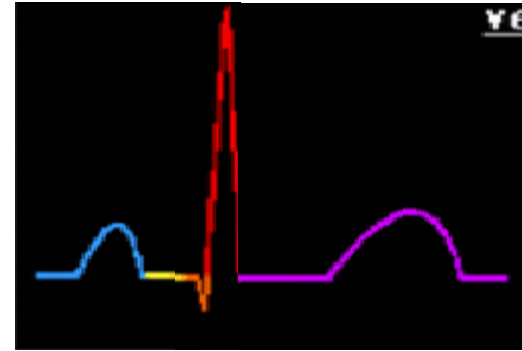
aVF

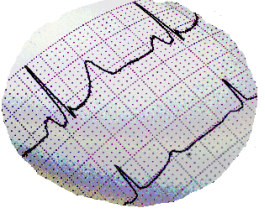




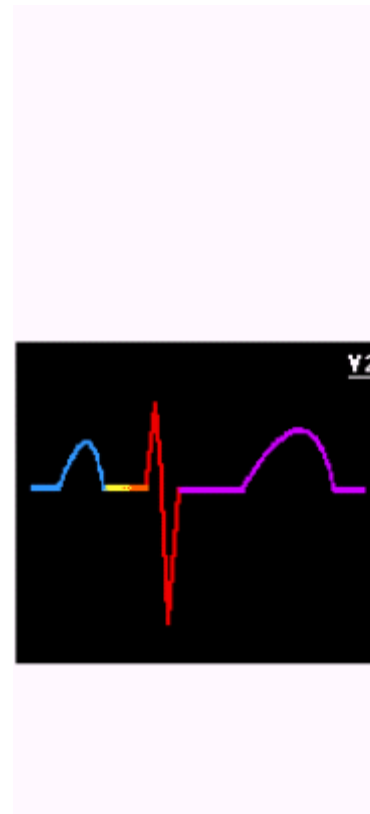
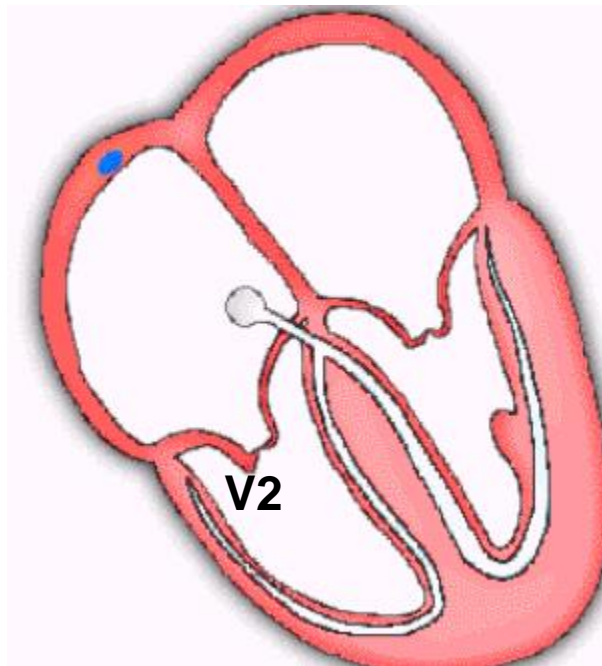


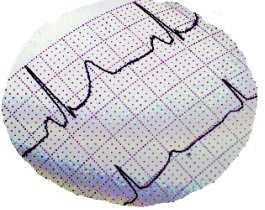
V6



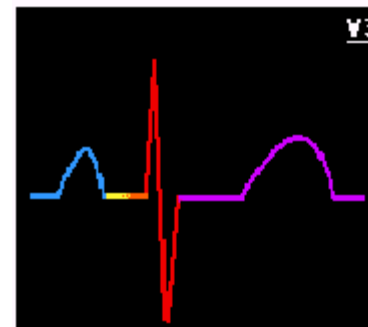
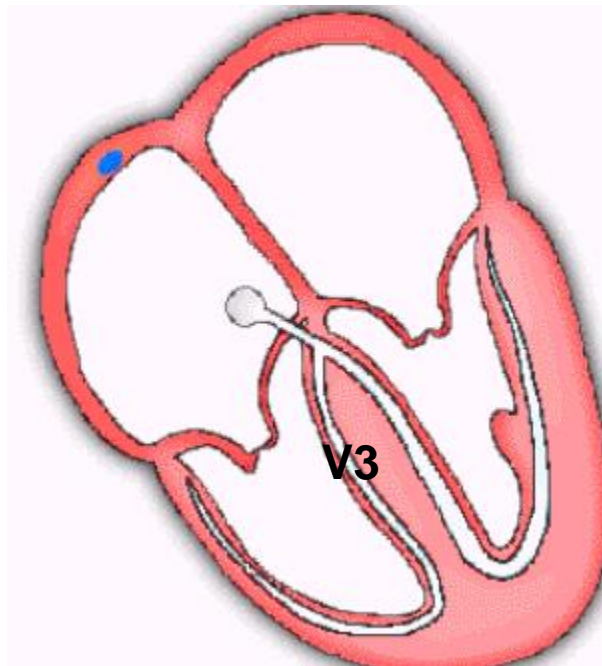


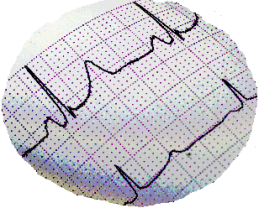
V2



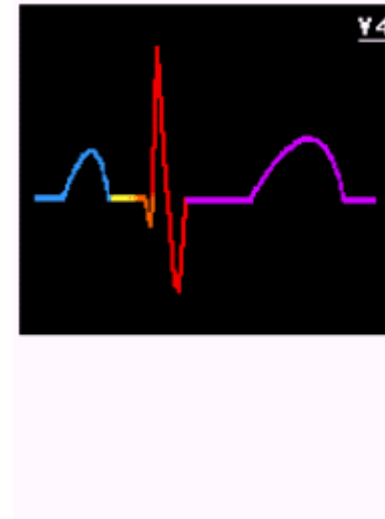
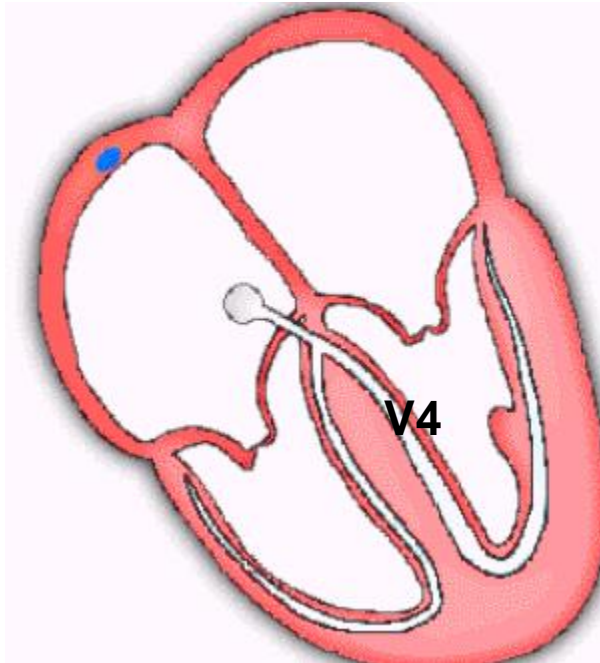


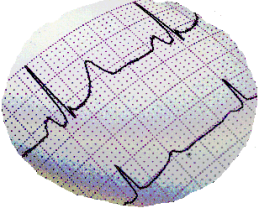
V3



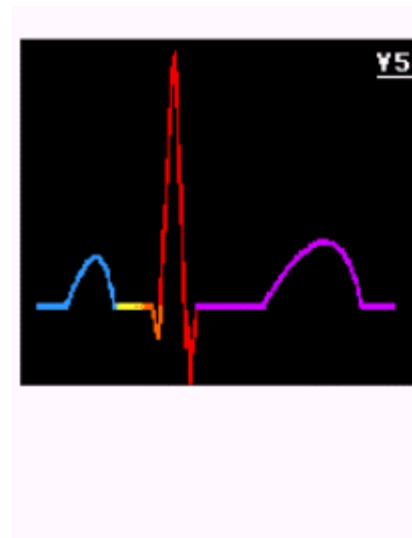
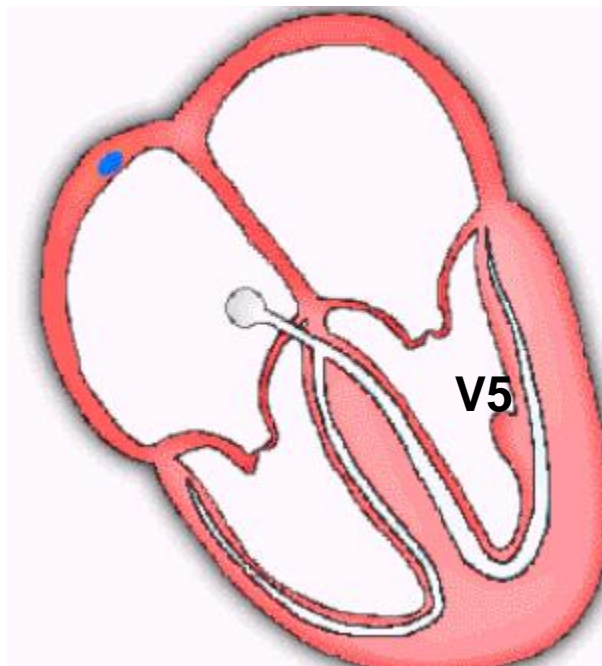


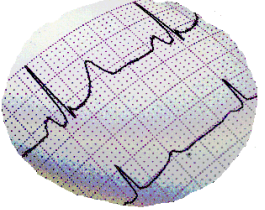
V4



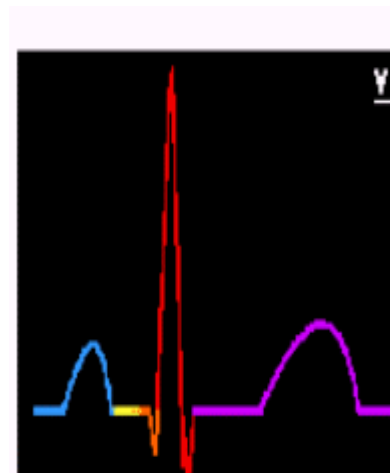
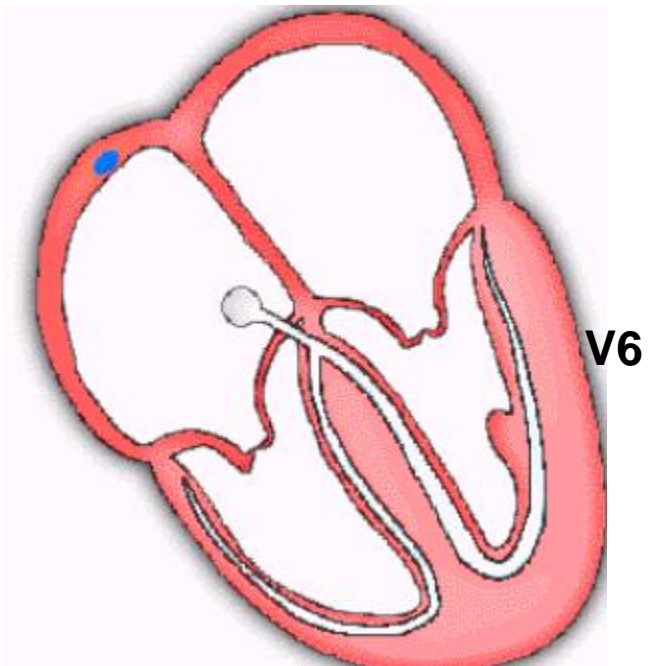


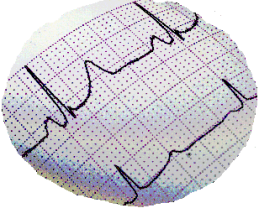
V5





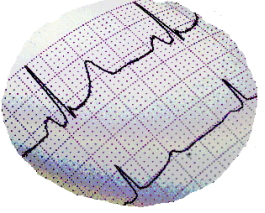
V6





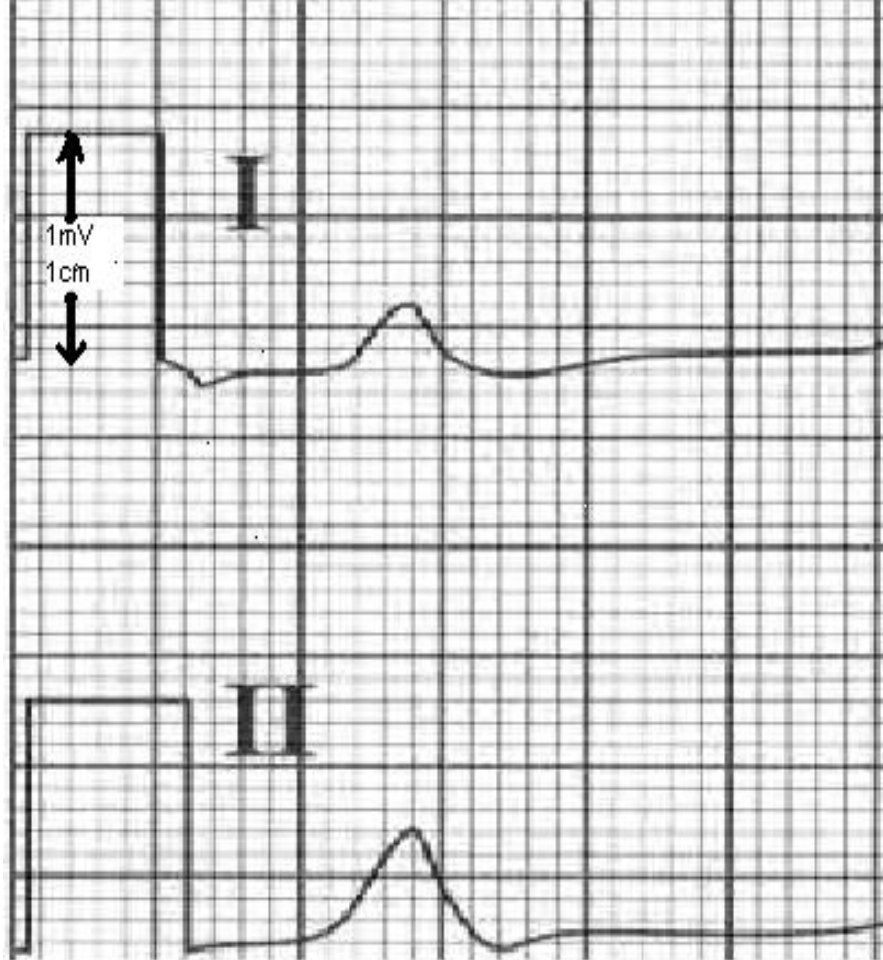
EKG'yi nasıl deęerlendirelim?

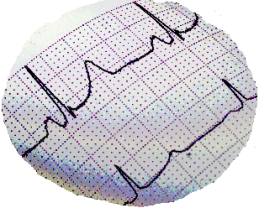
- **Ö**lçümler
- **R**itim analizi
- İletim analizi
- **D**algaların şekli
- **EKG** yorumu
- Önceki EKG ile karşılaştırma



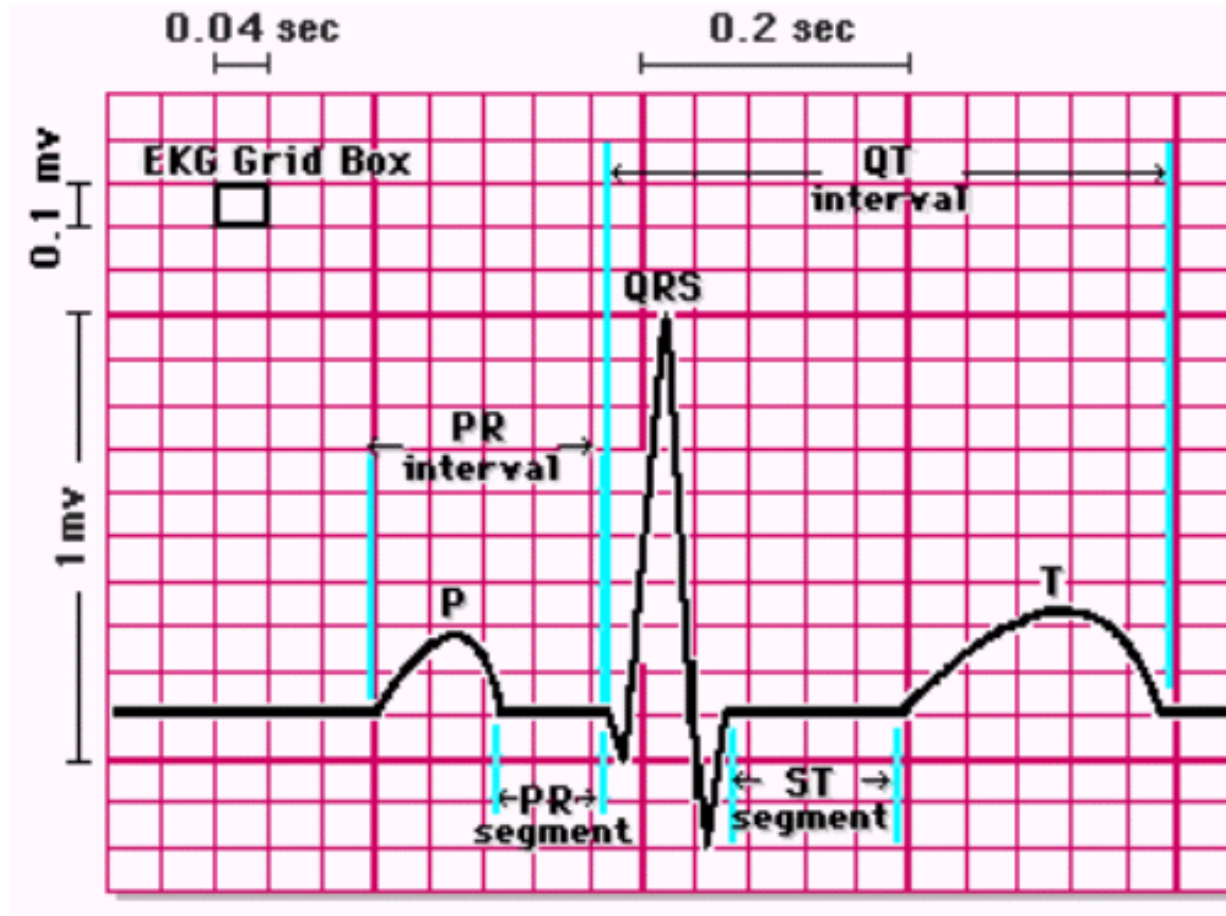
Ölçümler

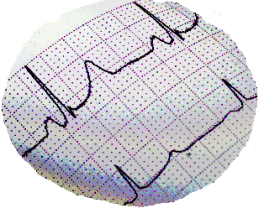
Kalibrasyon





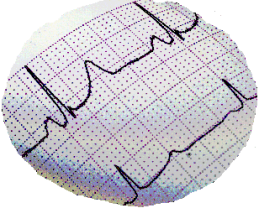
Ölçümler



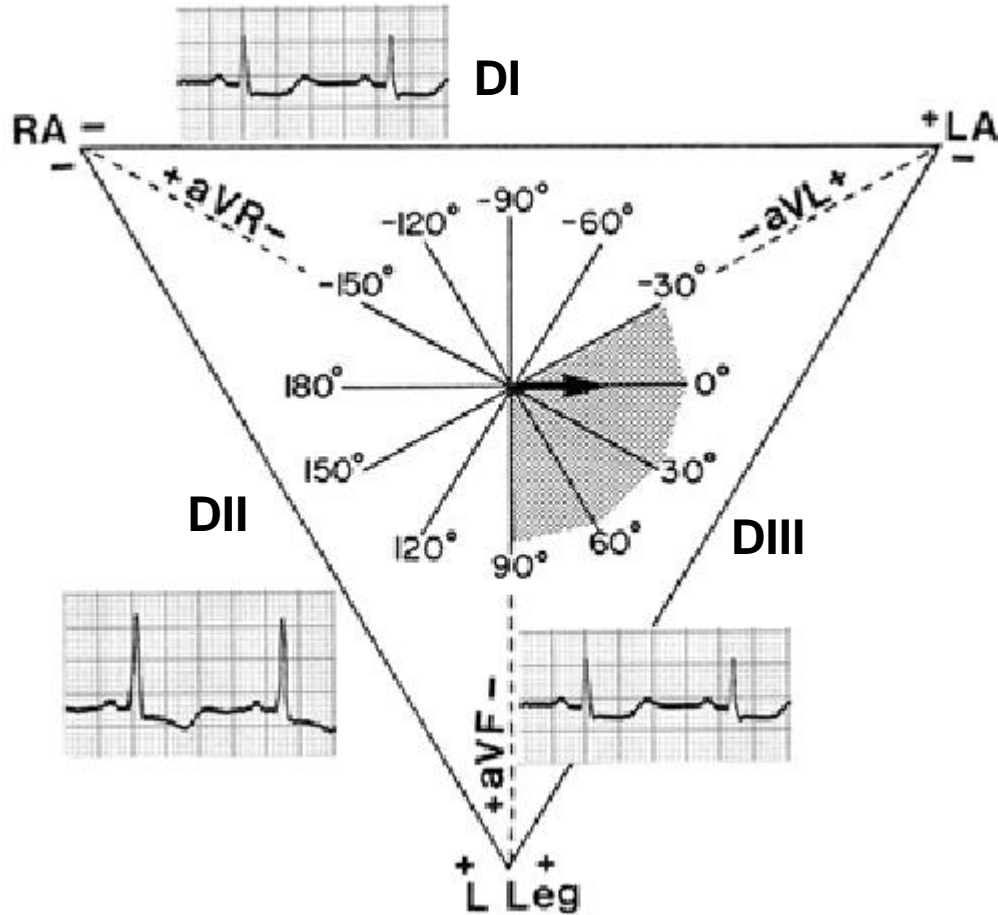


Normal EKG

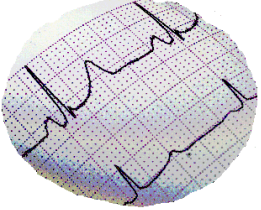
- Kalp hızı 60 – 100 / dakika
- PR: 0.12 - 0.20 sn
- QRS: 0.06 - 0.12 sn
- QT \leq 0.42 sn
- Ritim : NSR
- Vertikal plan QRS aksı (+90°) – (-30°)
- İleti : SA – AV – IV



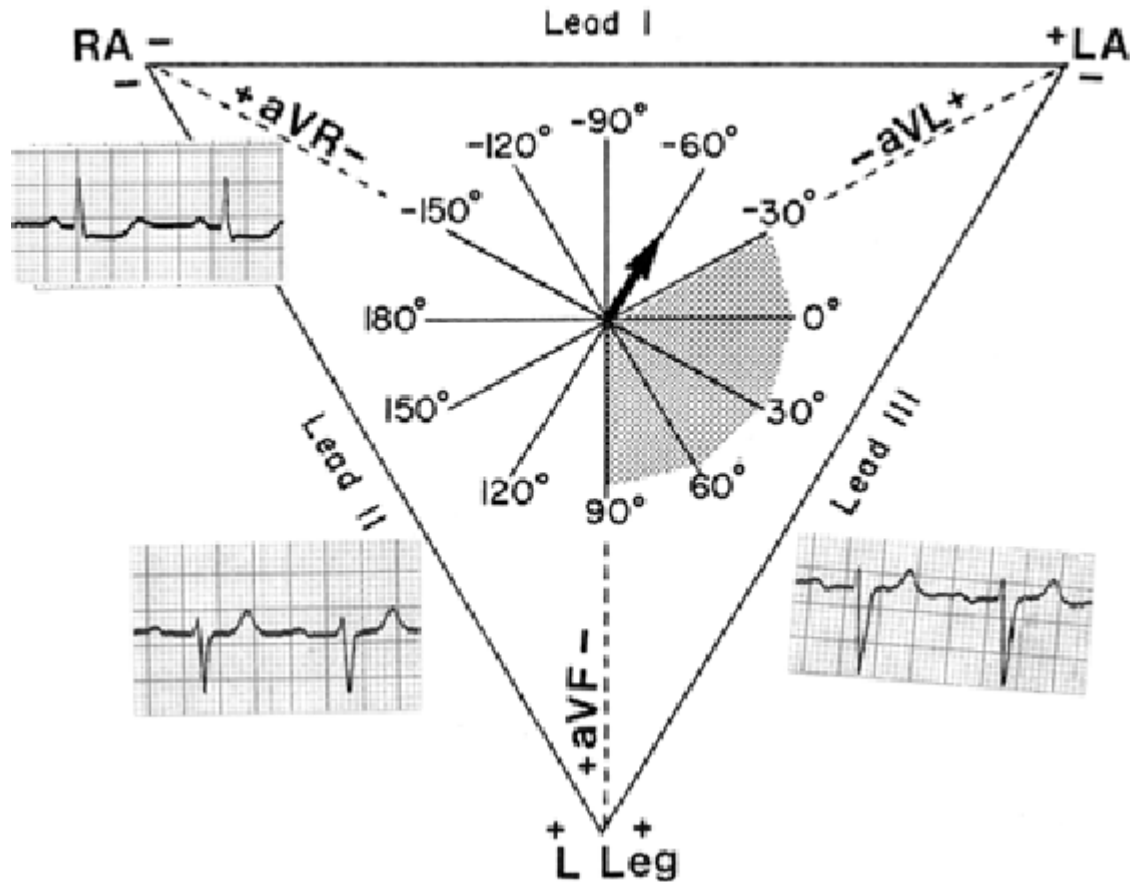
Normal aks



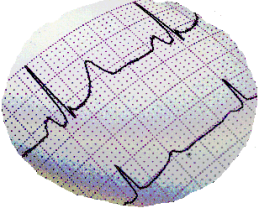
DII > DI ve DIII



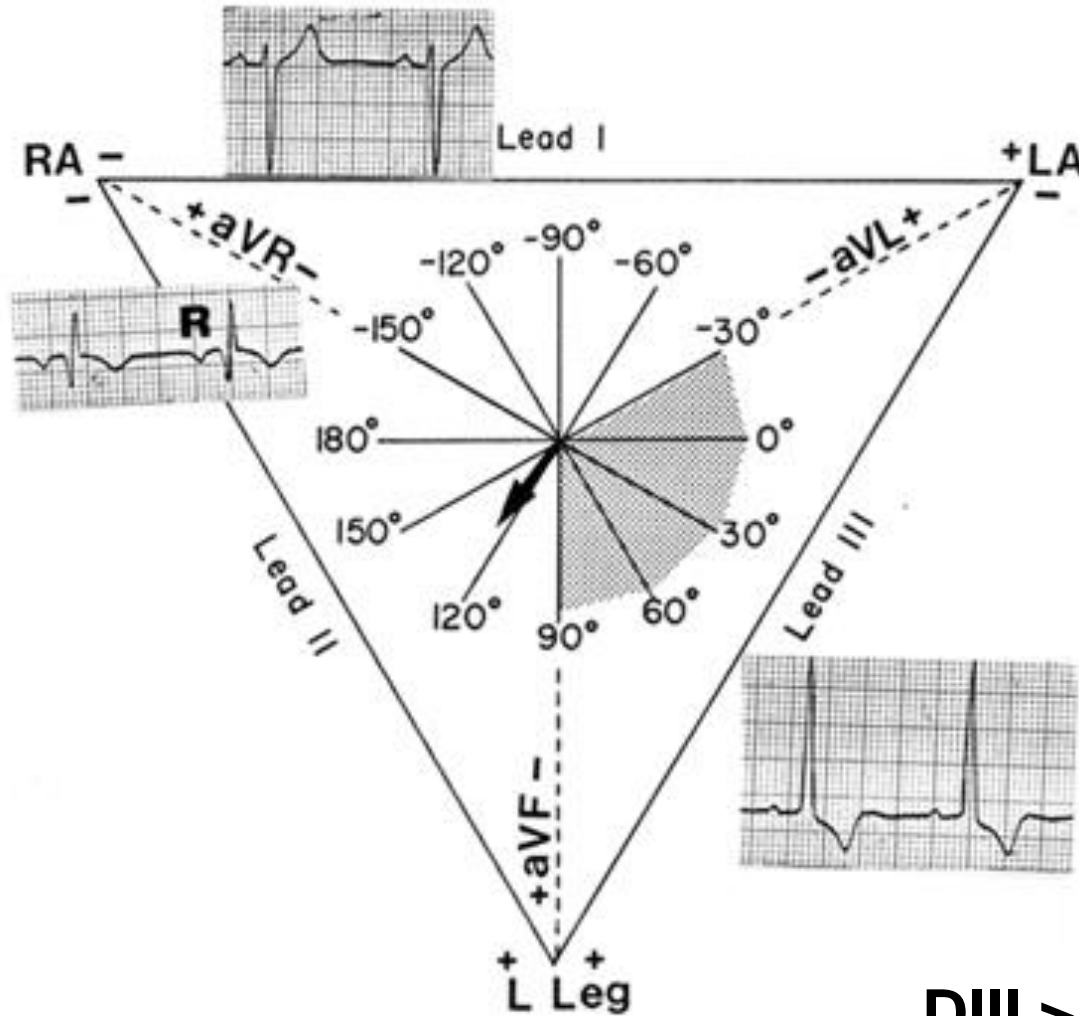
Sol aks deviasyonu



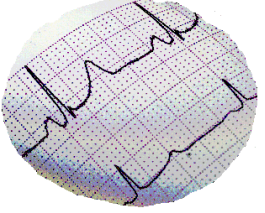
DI > DII > DIII



Sağ aks deviasyonu

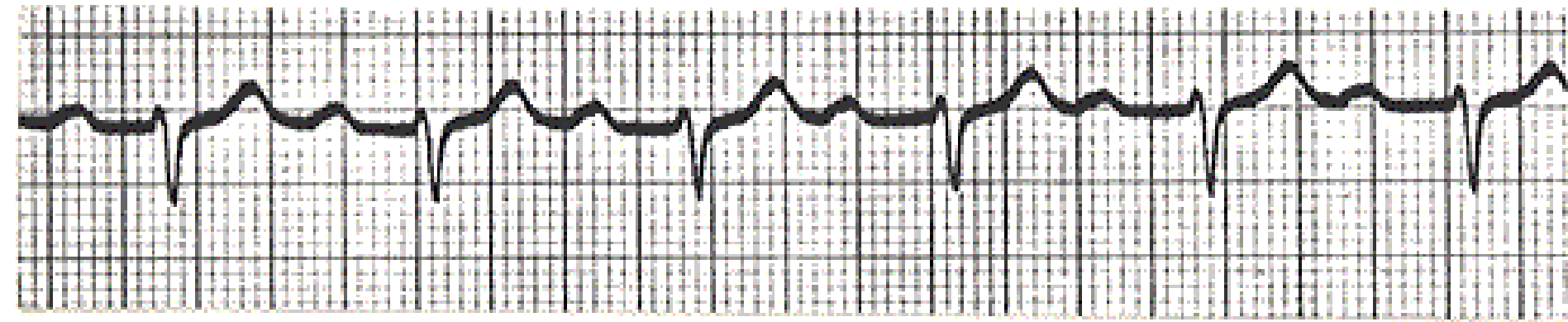


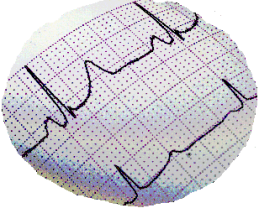
DIII > DII > DI



P-R aralıđını ölçelim

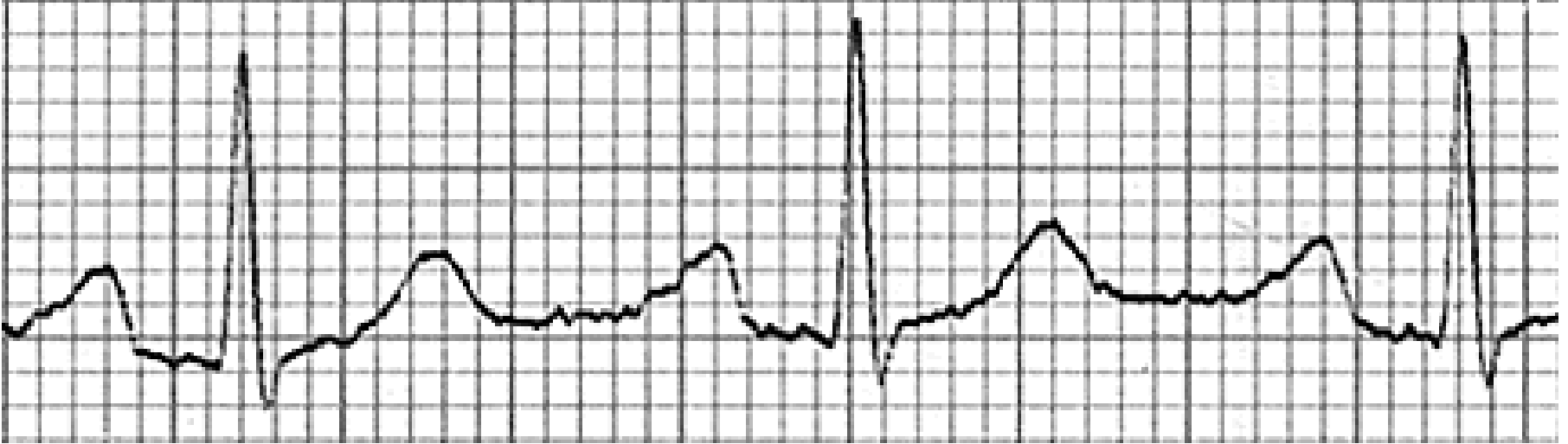
- 0.28 sn

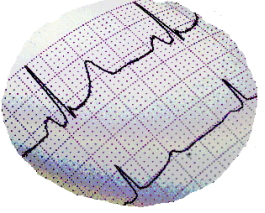




QRS aralığını ölçelim

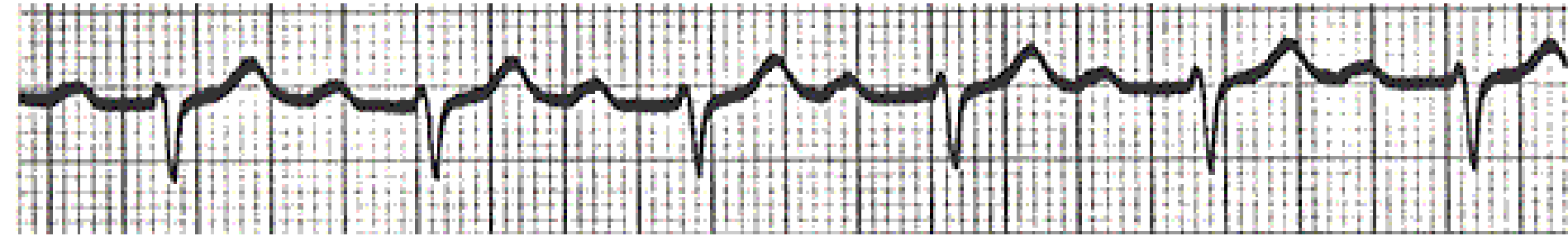
- 0.08 sn

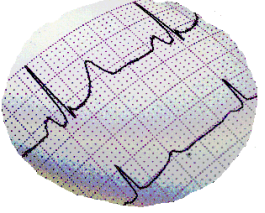




Kalp hızını hesaplayalım

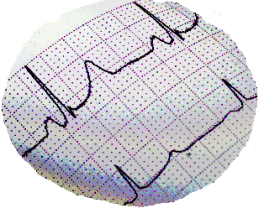
- 90/dk



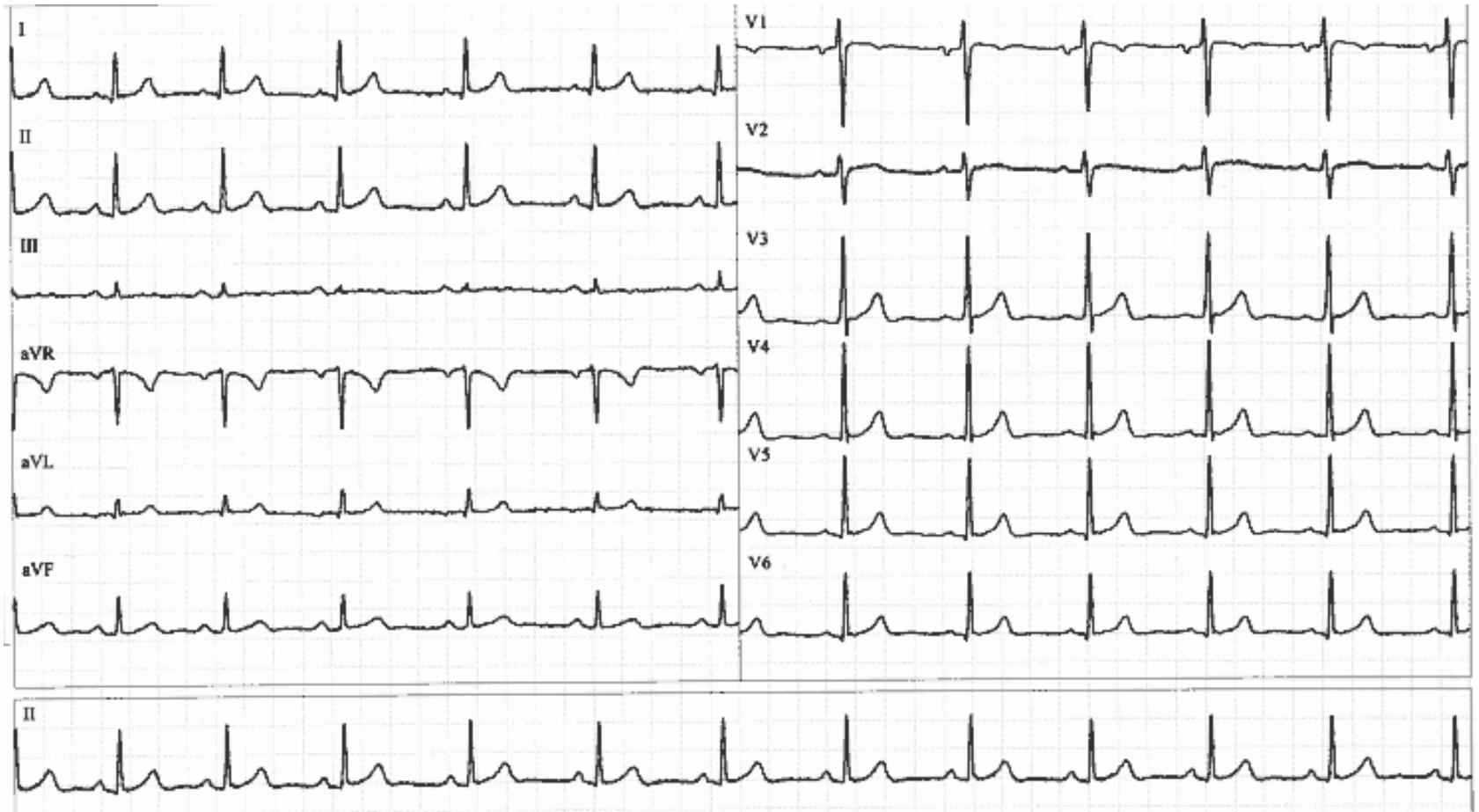


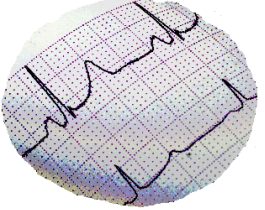
Normal sinüs ritmi



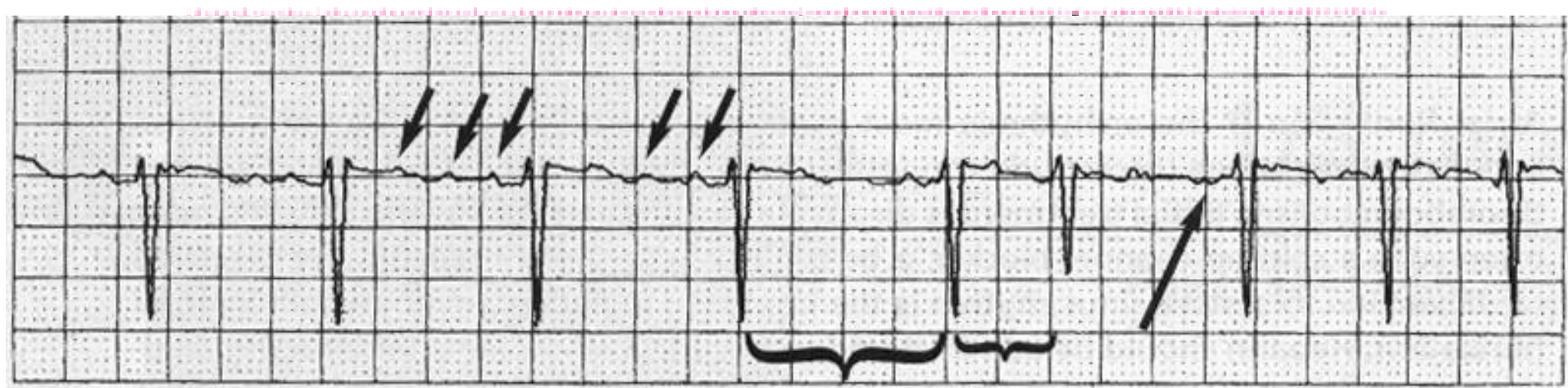


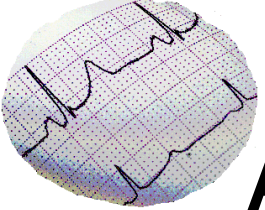
Normal EKG



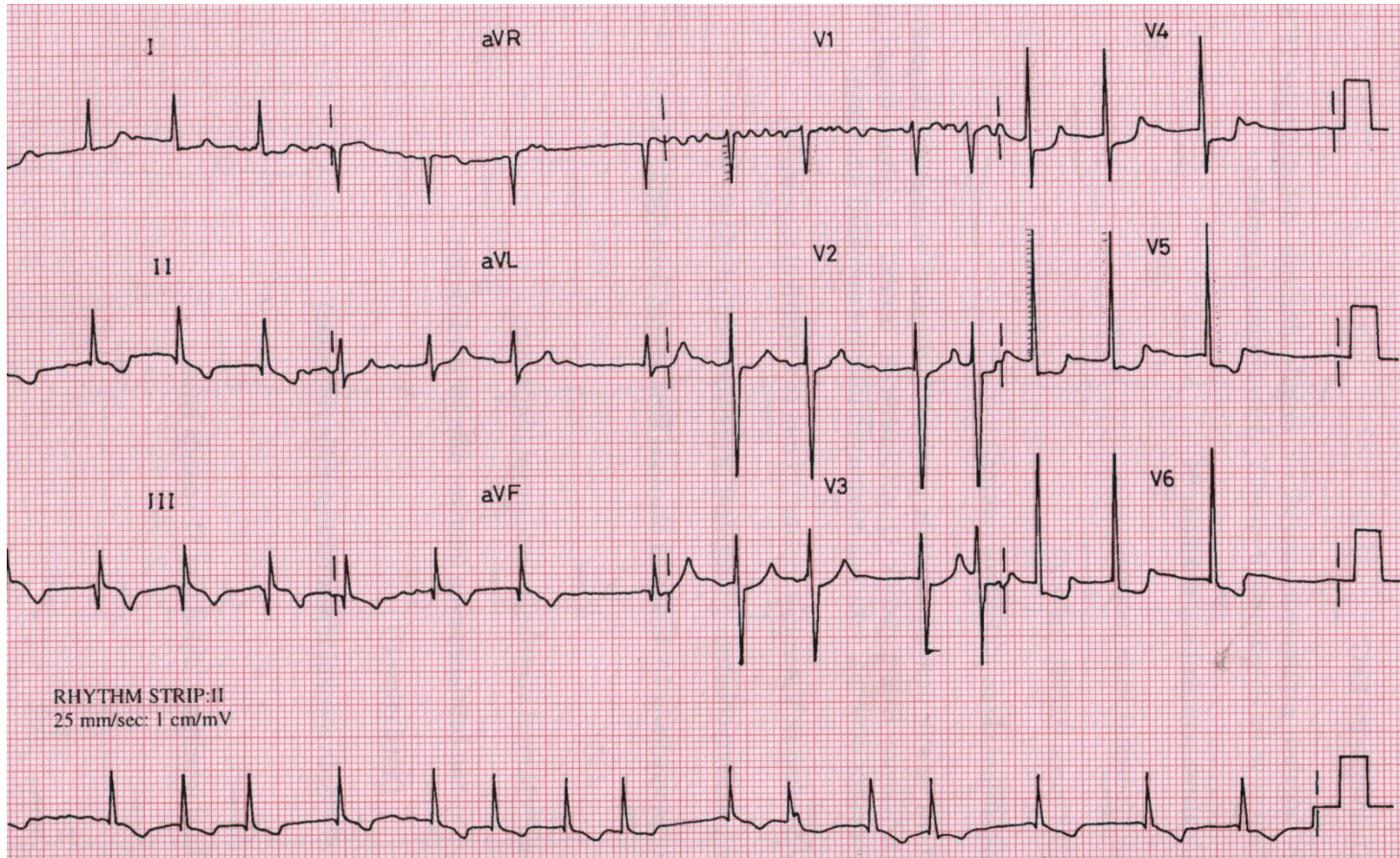


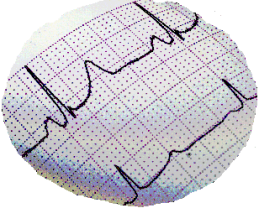
Atrial fibrilasyon



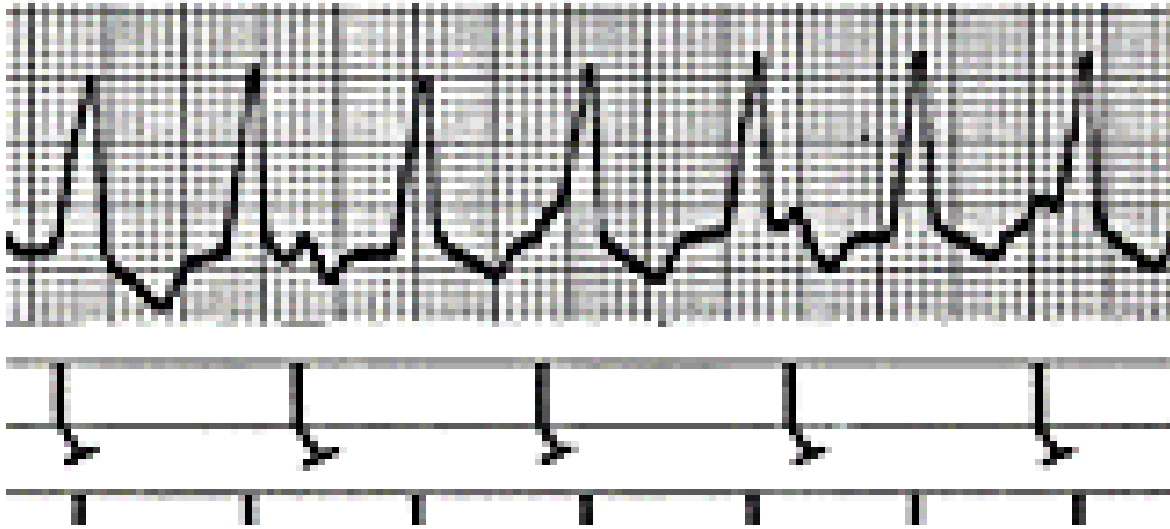


Atrial fibrilasyon, iskemi

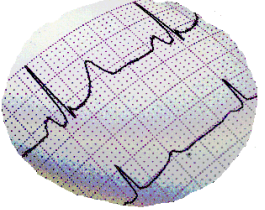




Ventriküler taşikardi

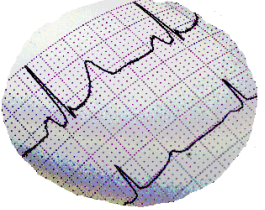


Supraventriküler ritimler → QRS normal
Ventriküler ritimler → QRS geniş

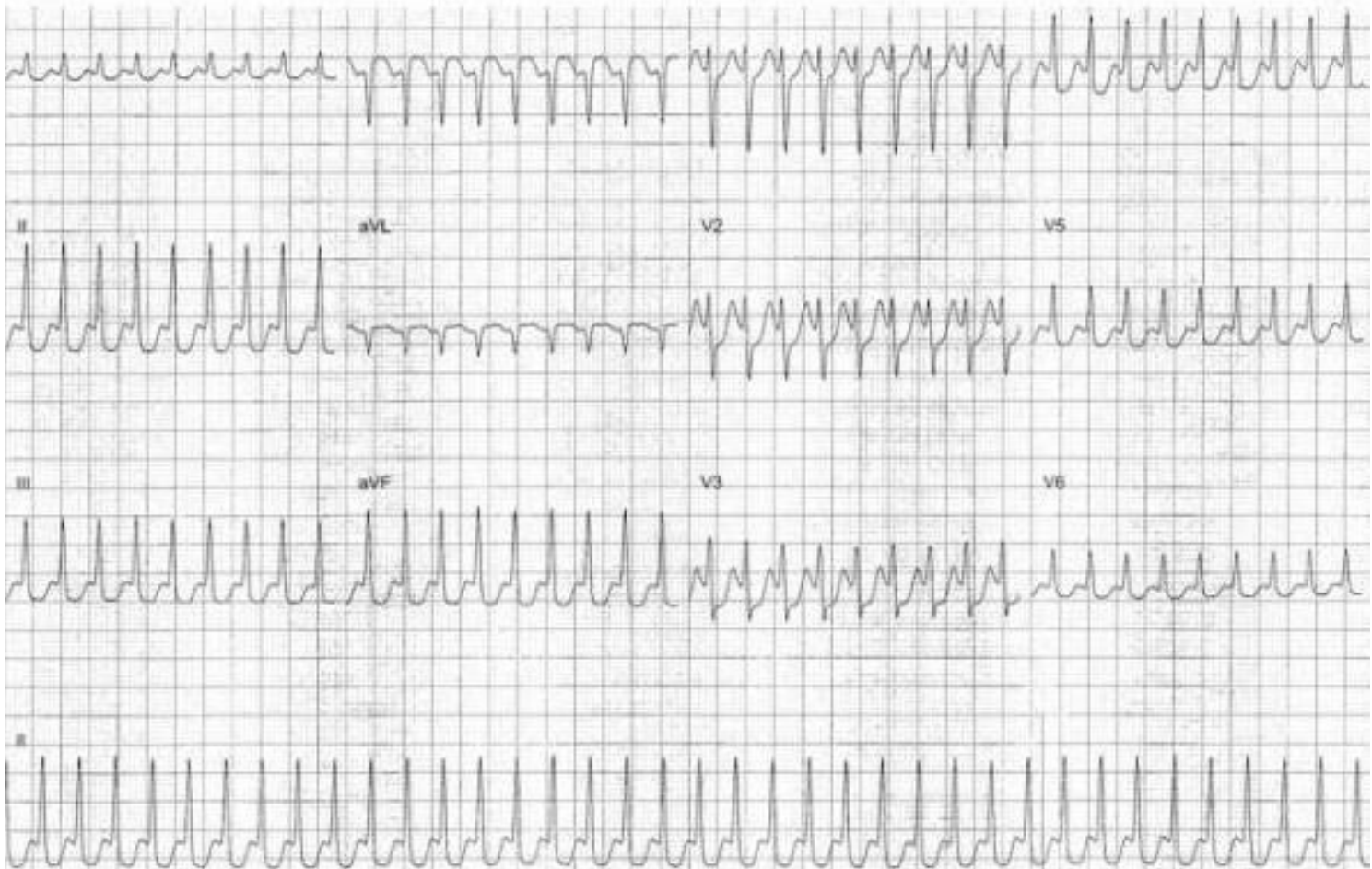


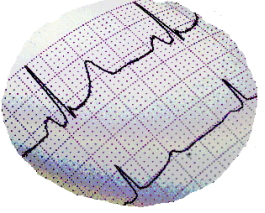
Geçici VT





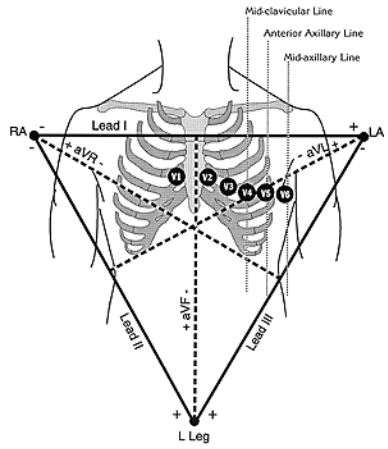
SVT, İskemi





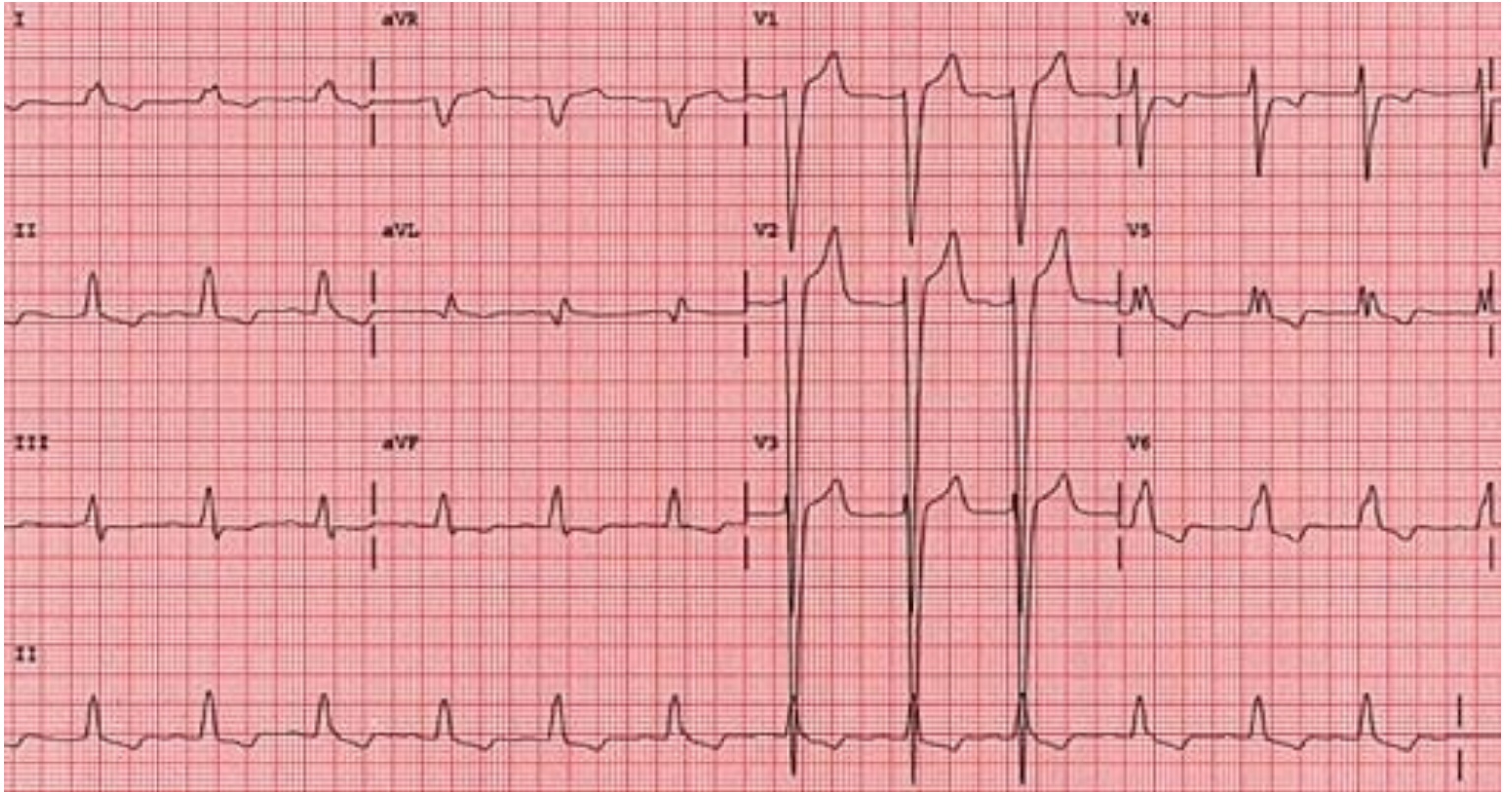
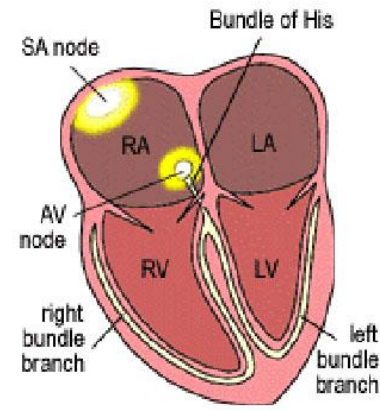
Ventriküler fibrilasyon

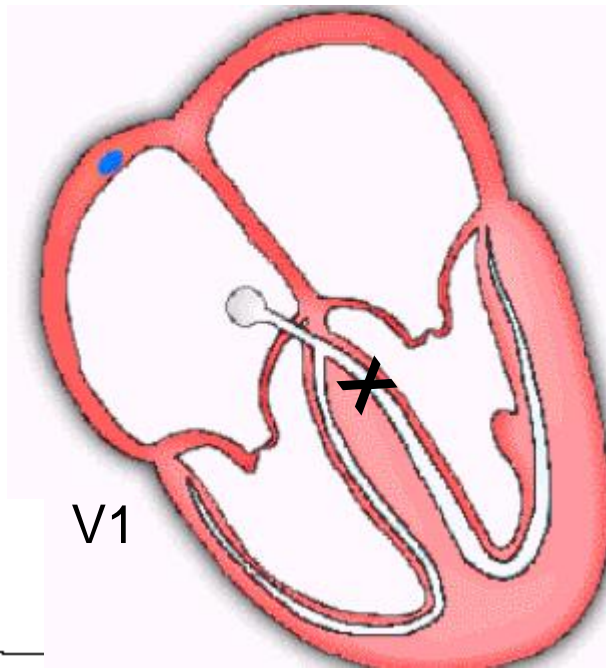
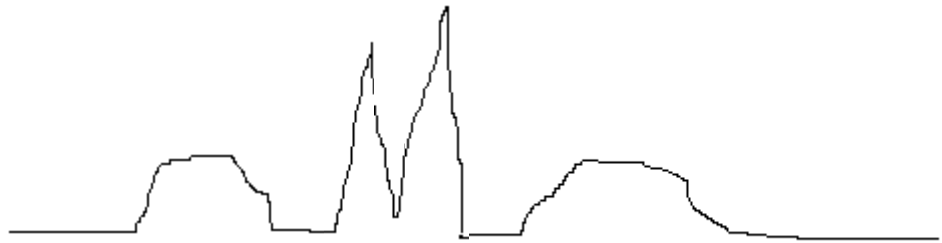
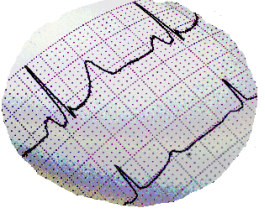




Sol dal bloğu

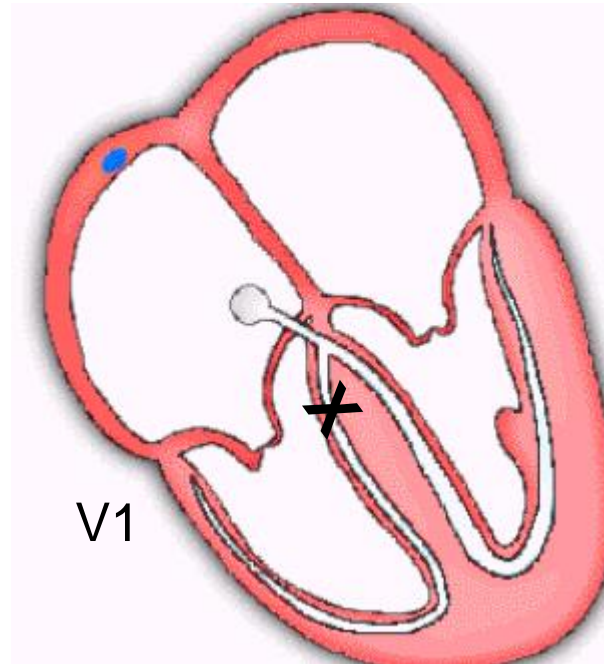
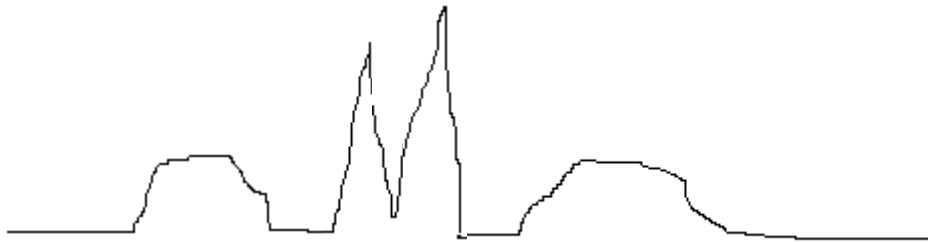
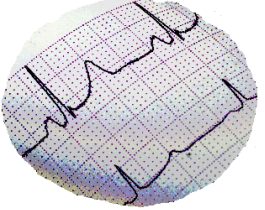
- QRS geniş,
- V5 ve V6'da M paterni

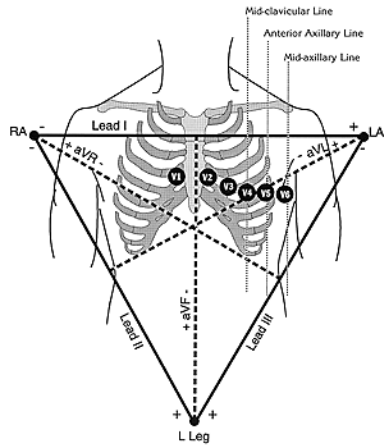




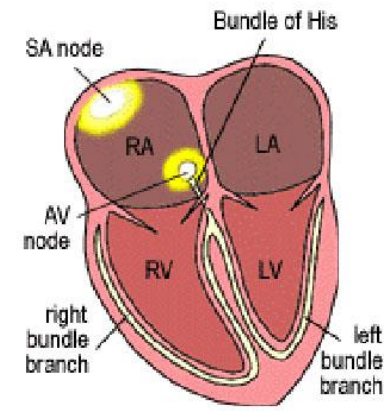
V6

V1

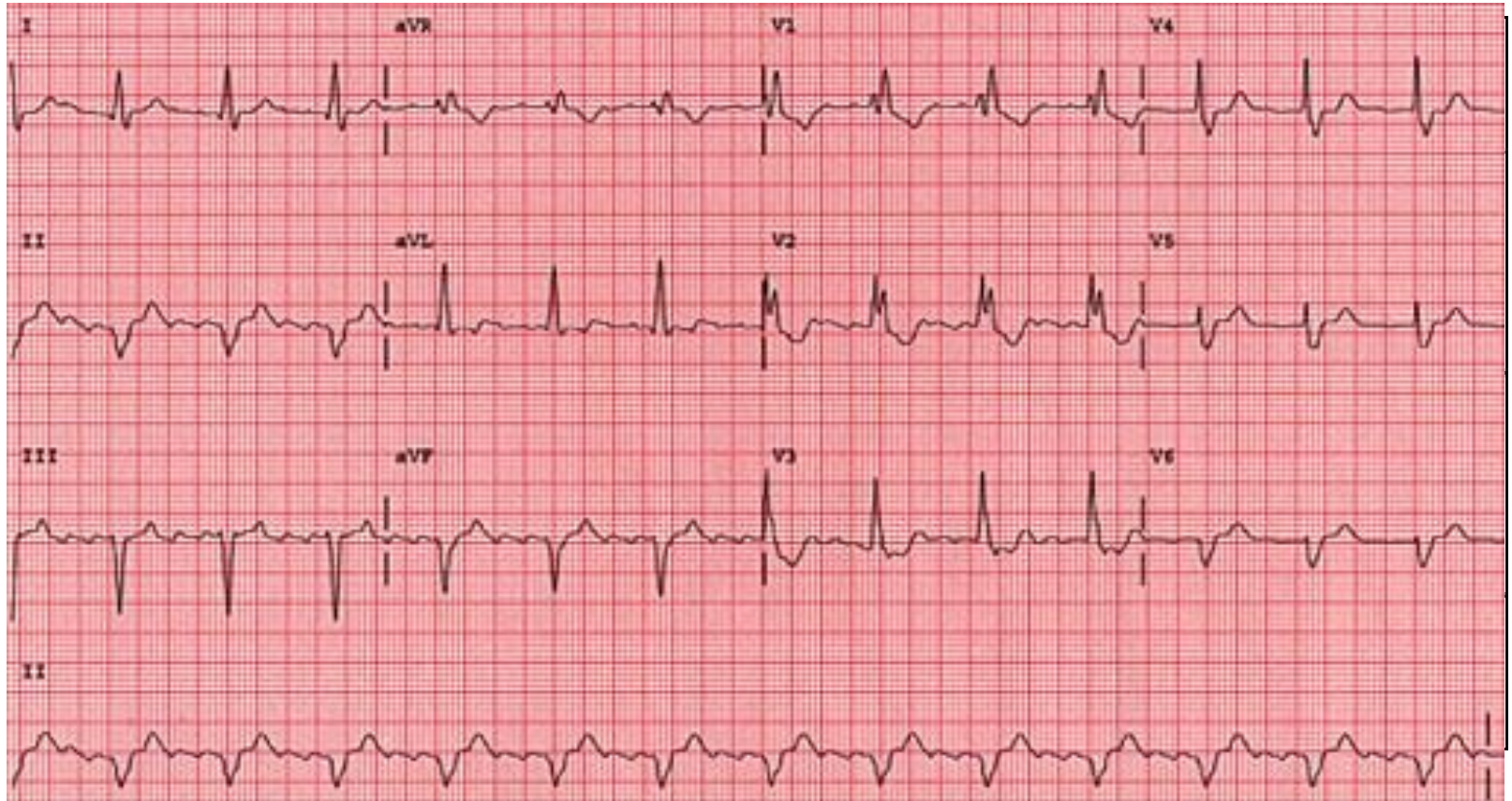


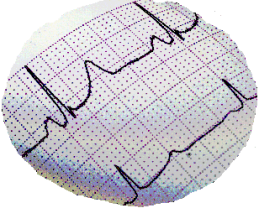


Sağ dal bloğu



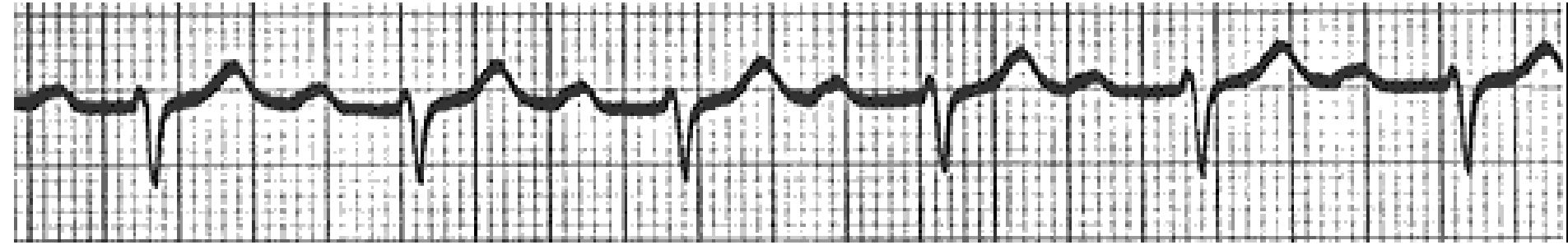
- QRS geniş, V1'de rSR'

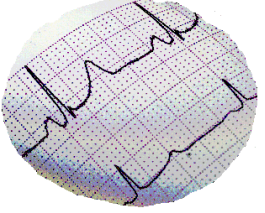




1. Derece AV blok

- $PR > 0.20$ sn. Bütün P uyarıları ventriküllere geçer.

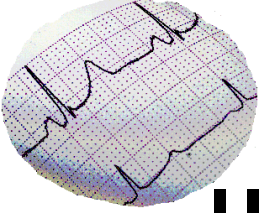




II. Derece AV Blok (Wenckebach)

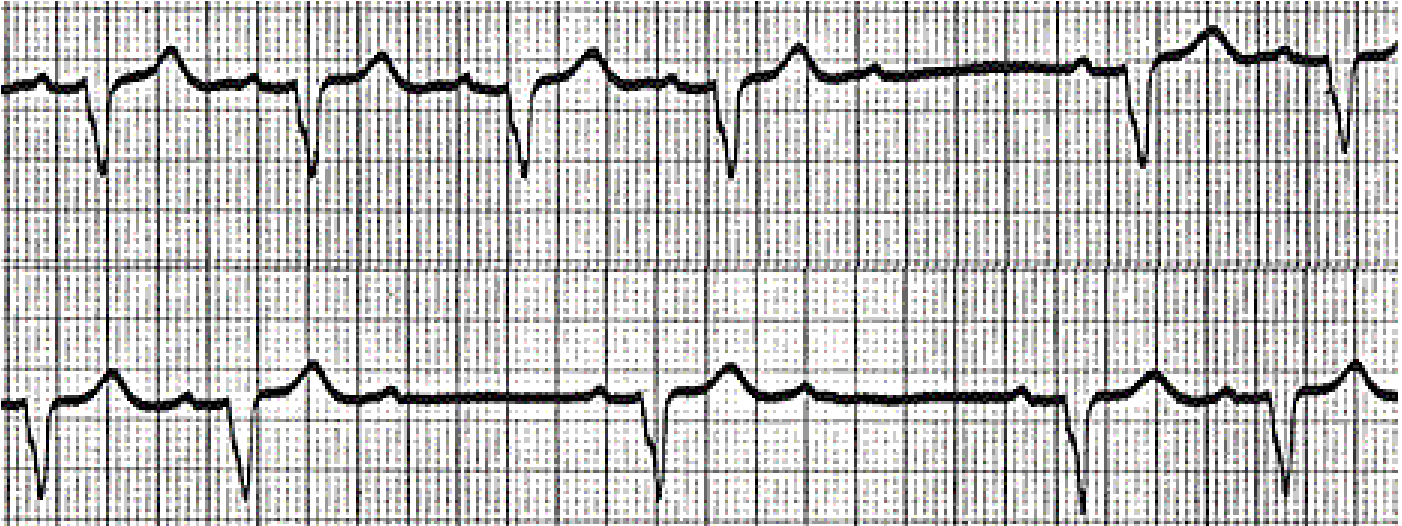
1) PR aralığı giderek uzar, QRS kaybı olur

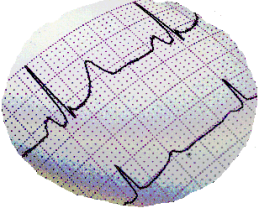




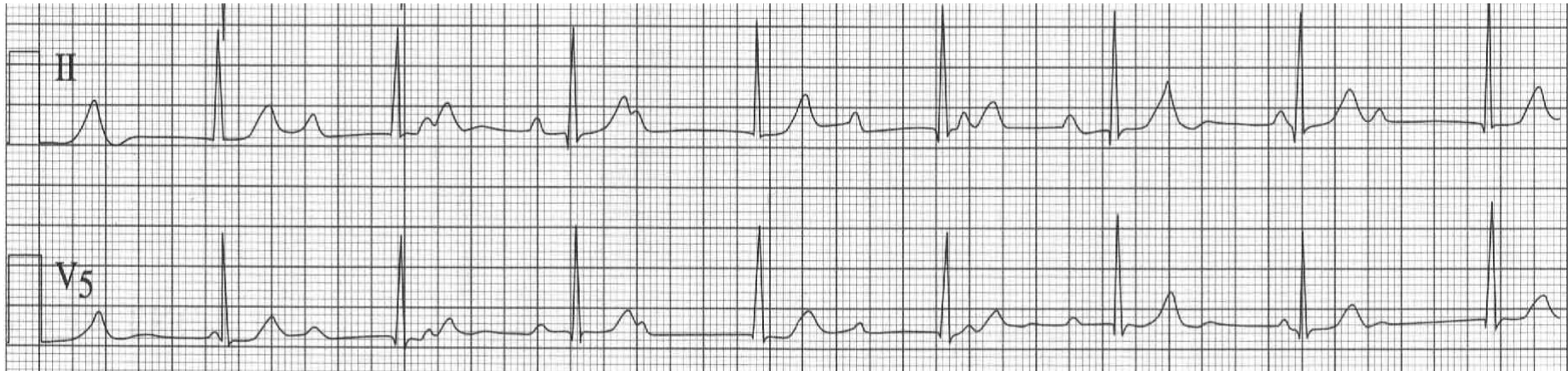
II. Derece AV blok (Mobitz II)

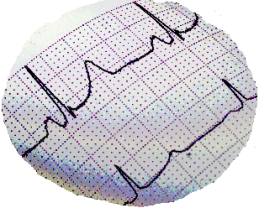
- PR aralığı sabit, uyarı ventriküllere normal iletilmektedir
- Fakat zaman zaman bir uyarı ventriküllere geçemez



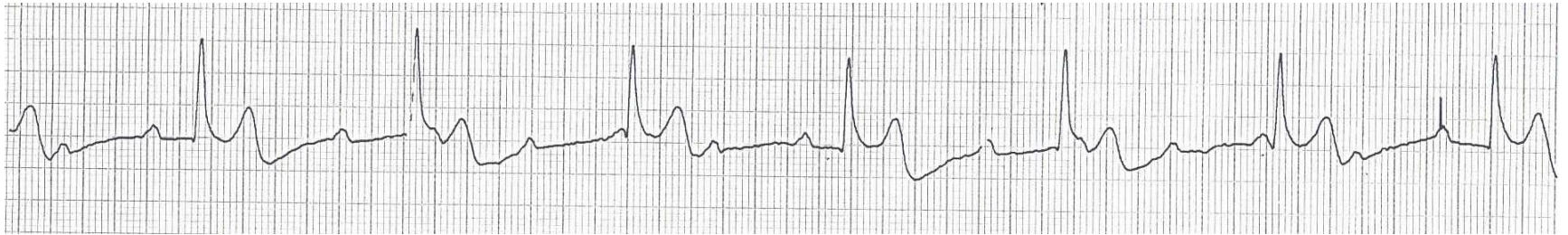


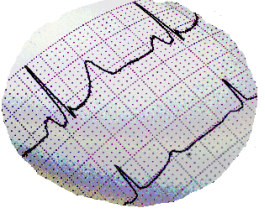
Tam A-V blok





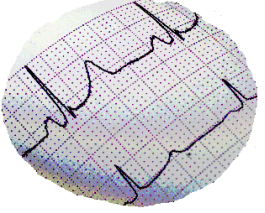
Tam A-V Blok





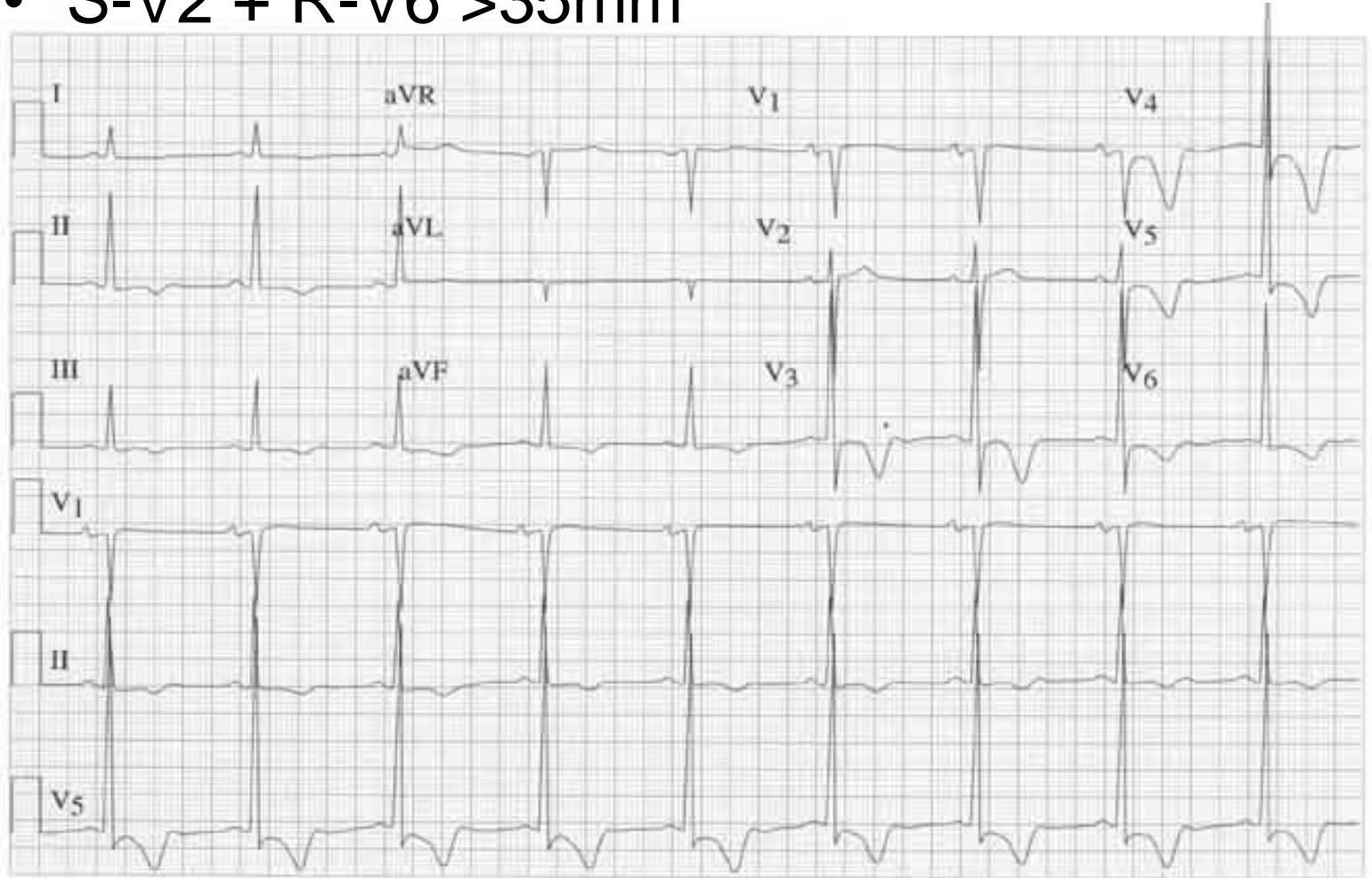
1. Derece AV Blok

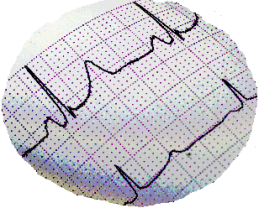




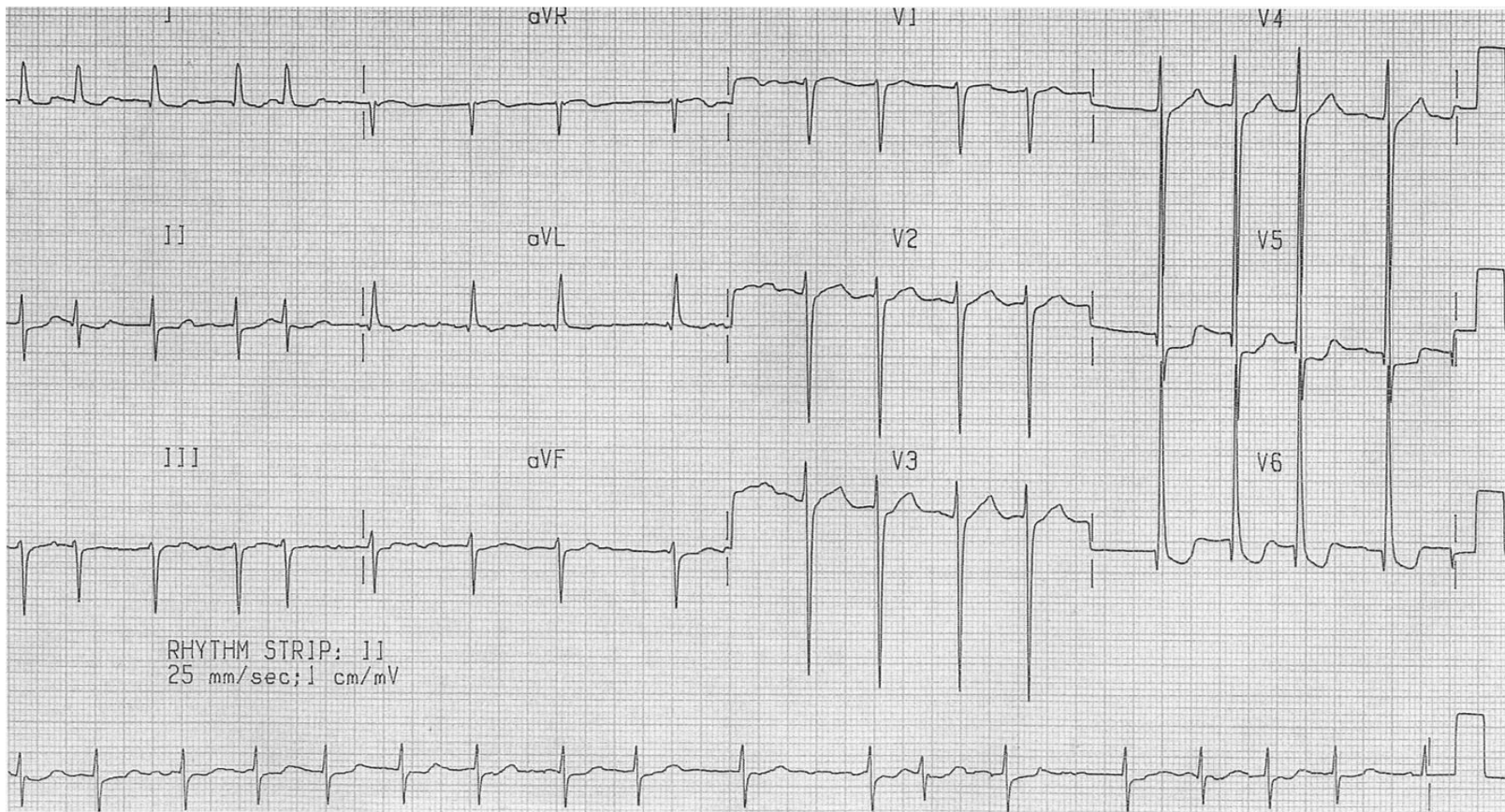
Sol ventrikül hipertrofisi

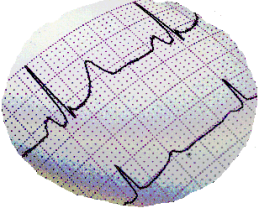
- $S-V2 + R-V6 > 35\text{mm}$



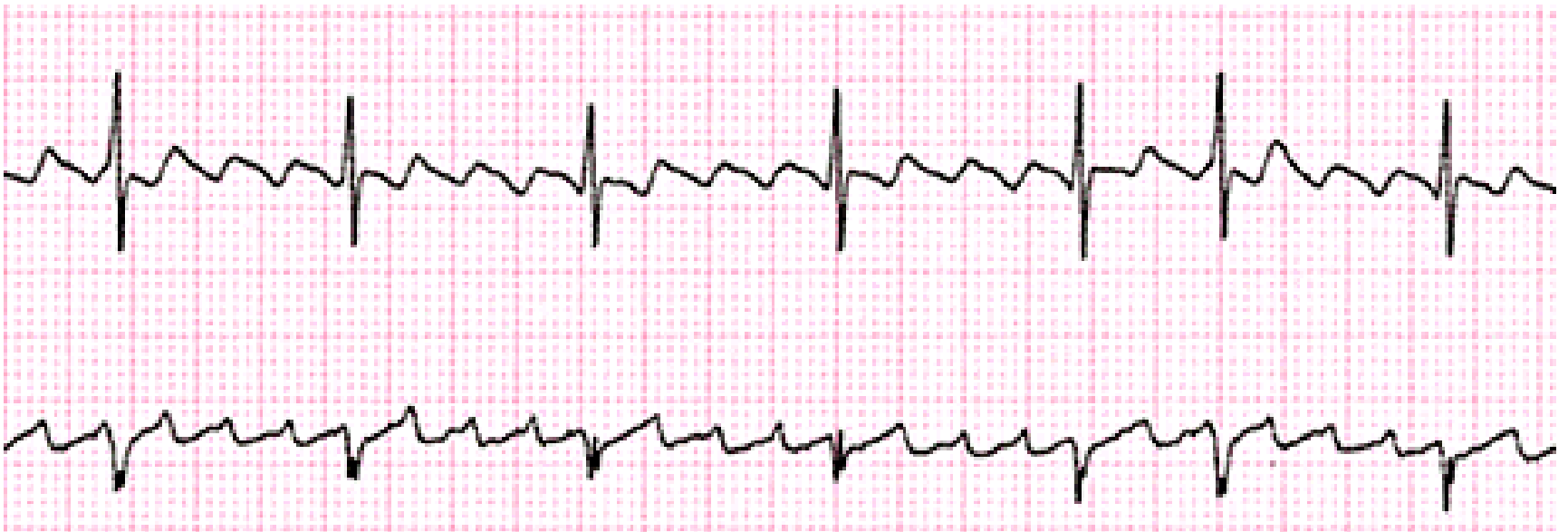


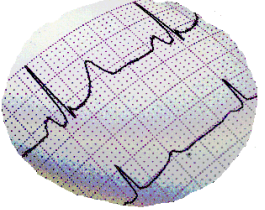
Atrial fibrilasyon, LVH



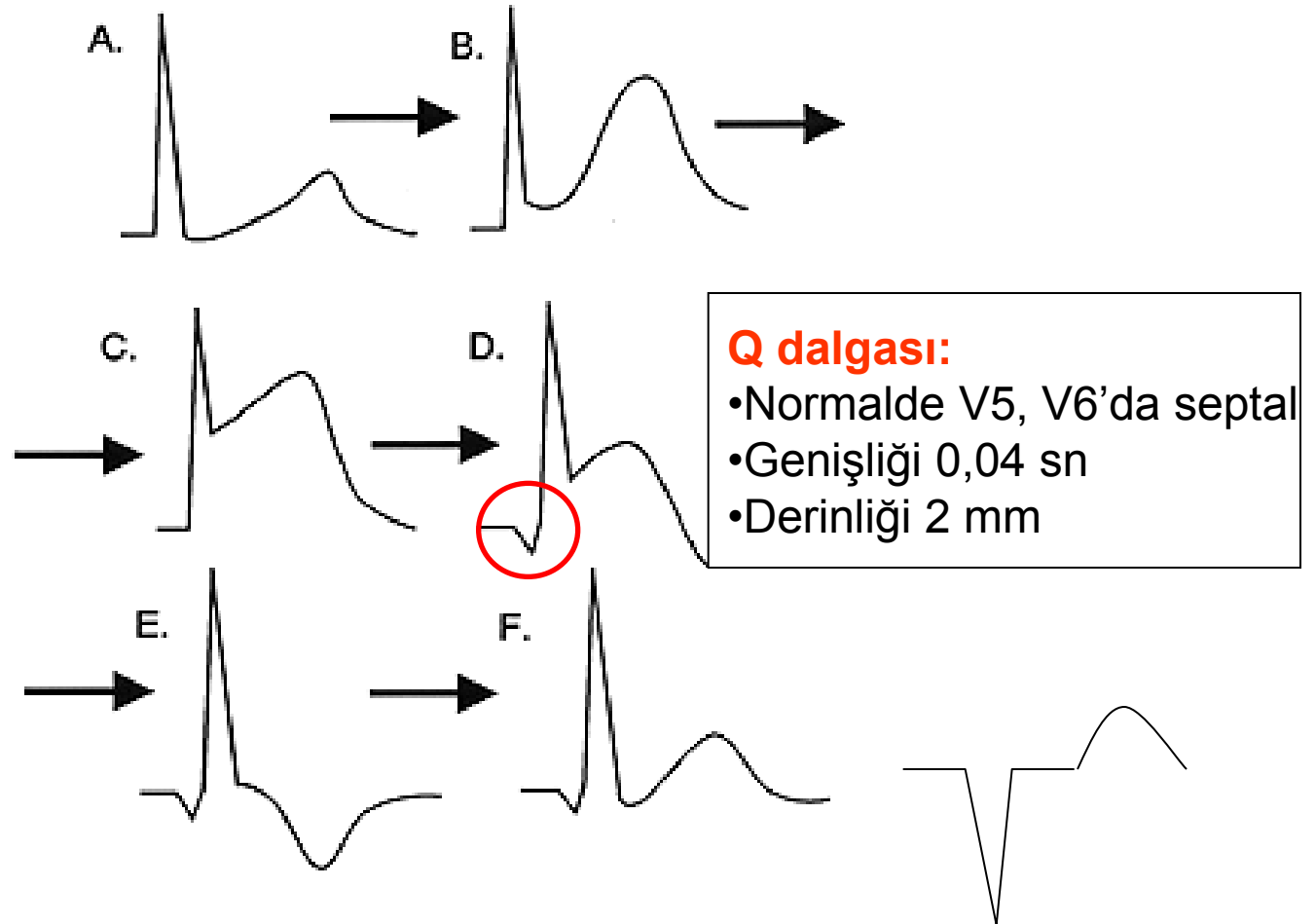


Atrial flutter

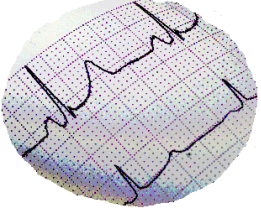




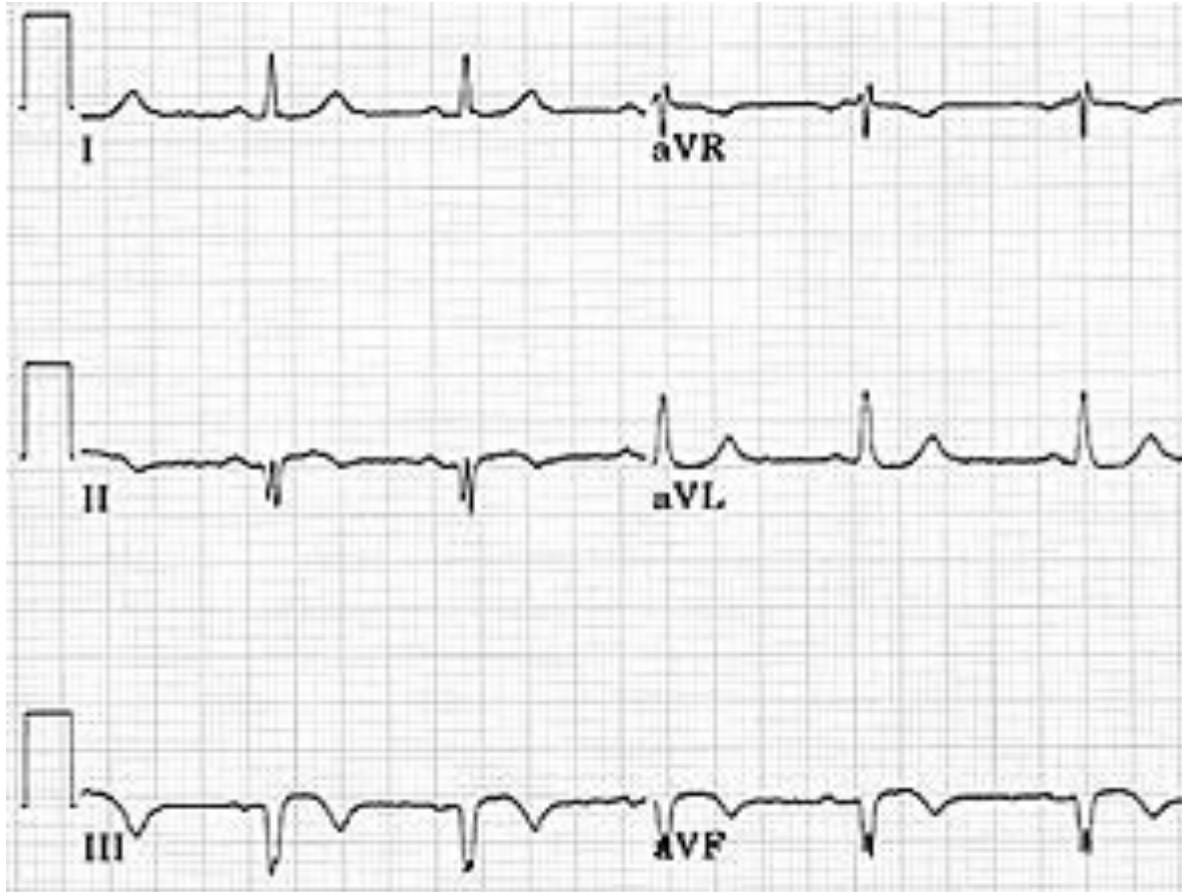
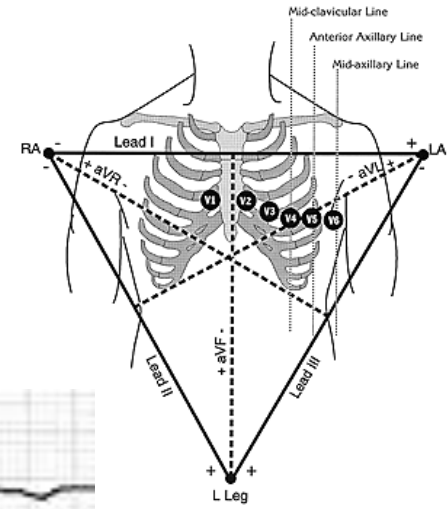
MI

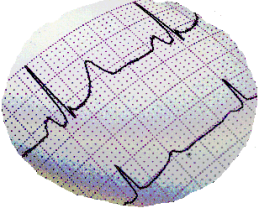


Evolution of Acute MI

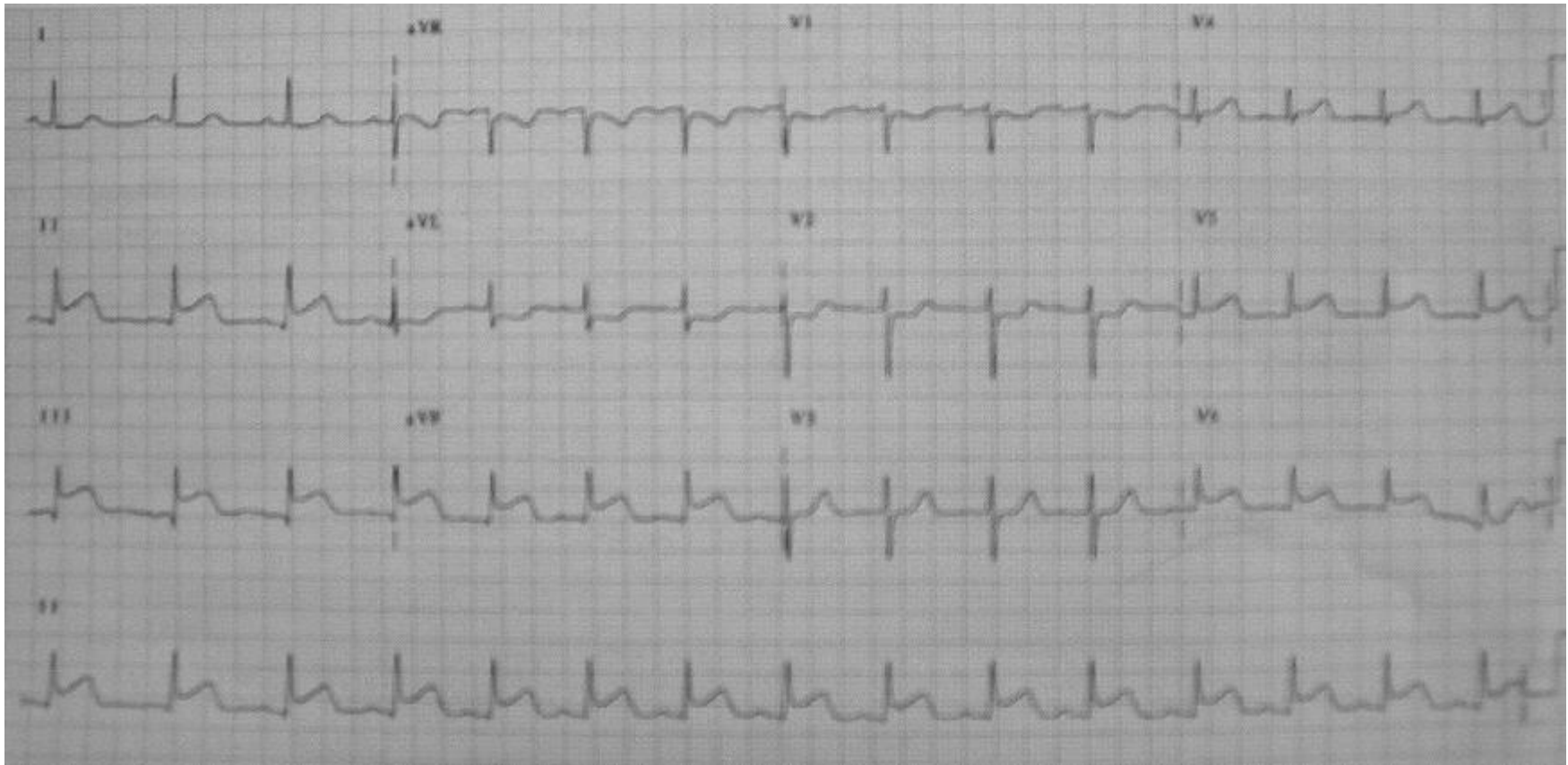


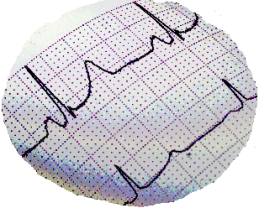
Inferior MI



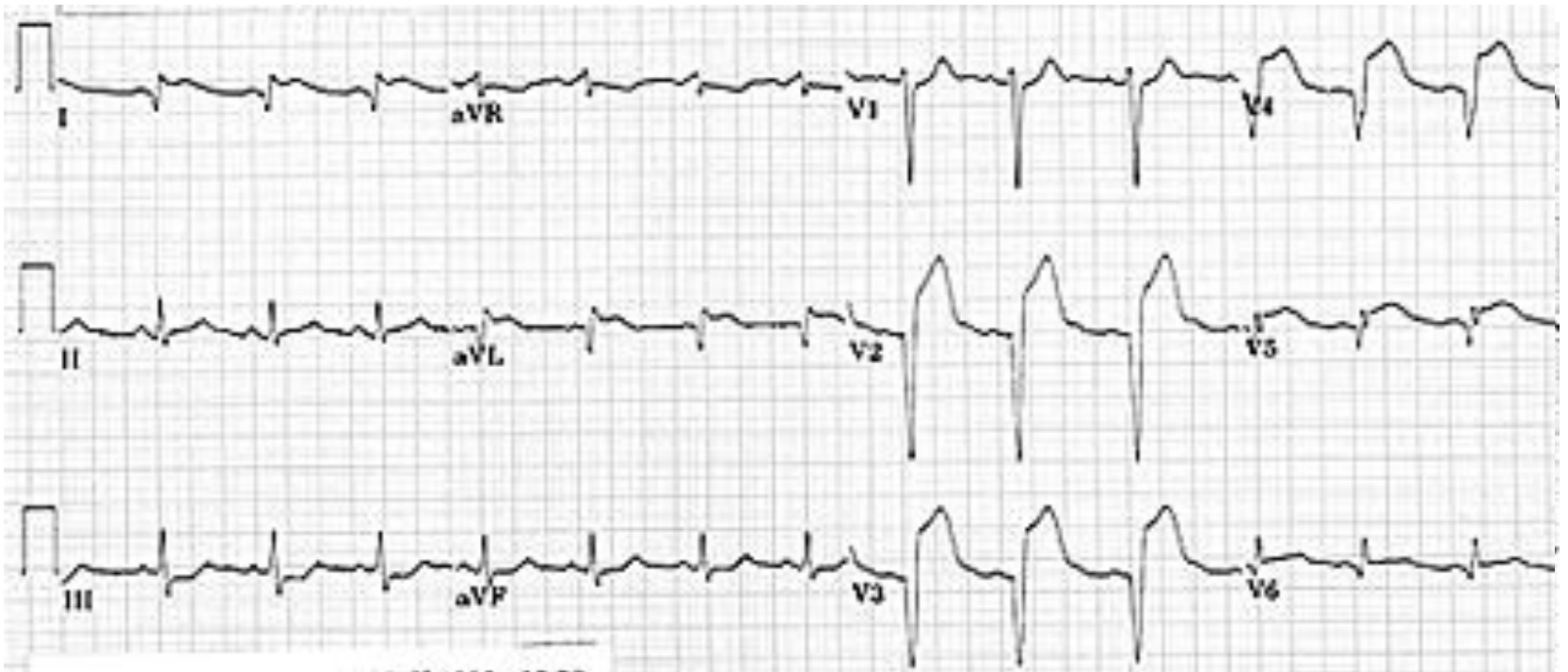


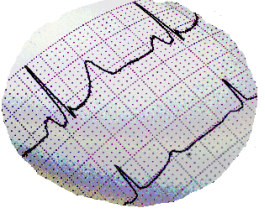
Inferolateral MI



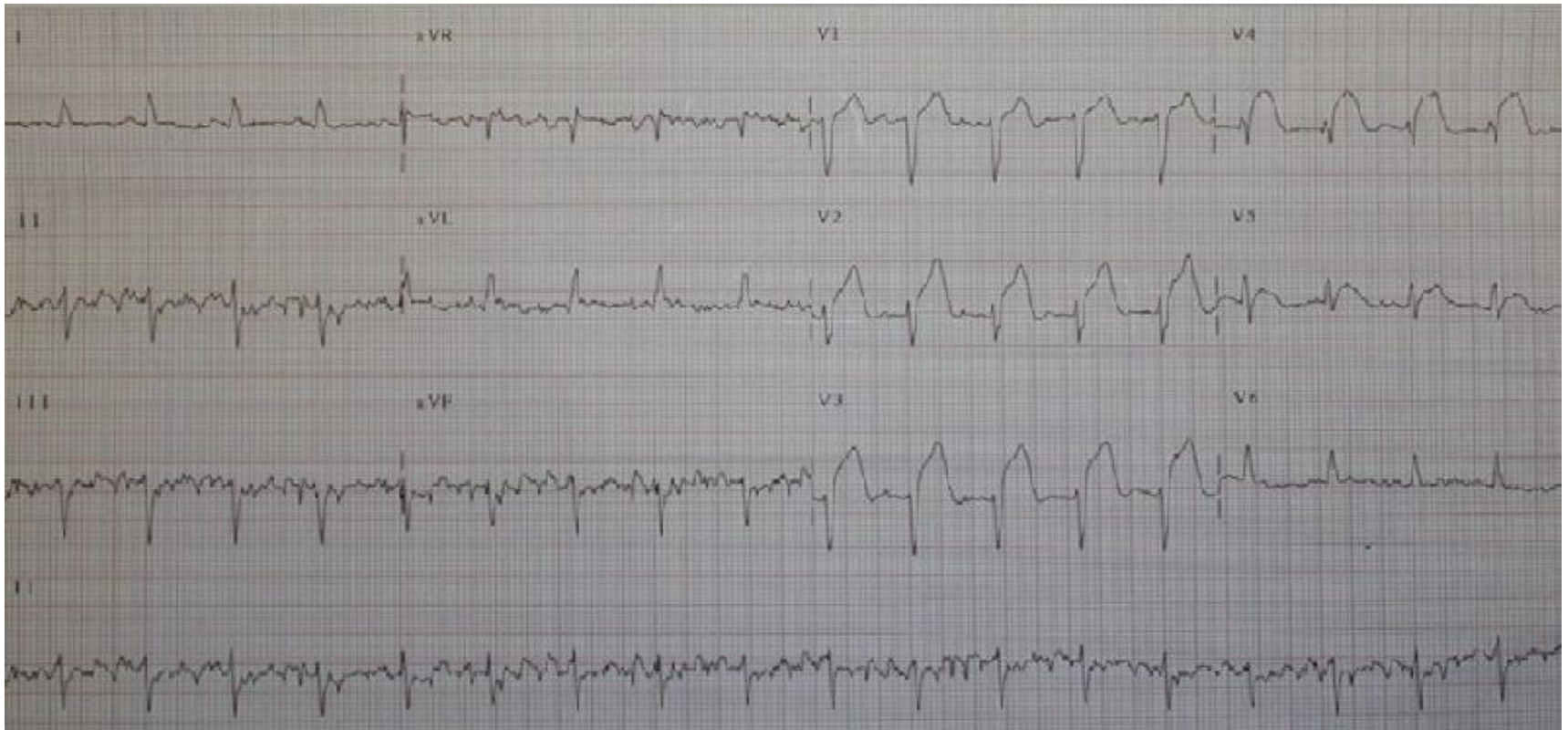


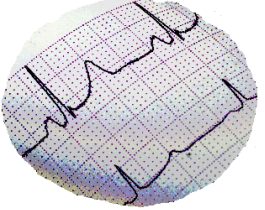
Anterior MI



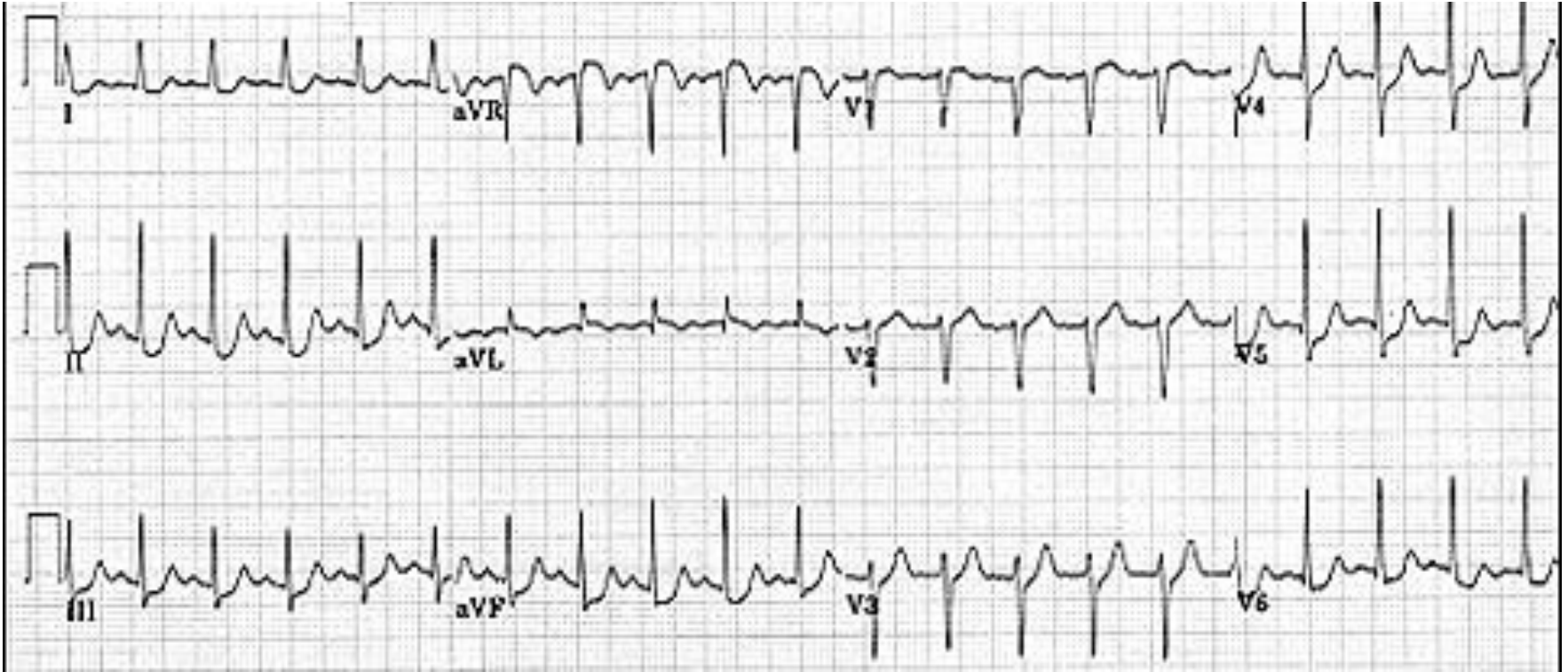


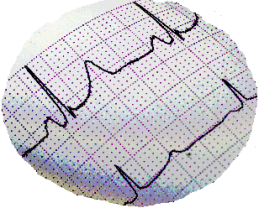
Akut anteroseptal MI



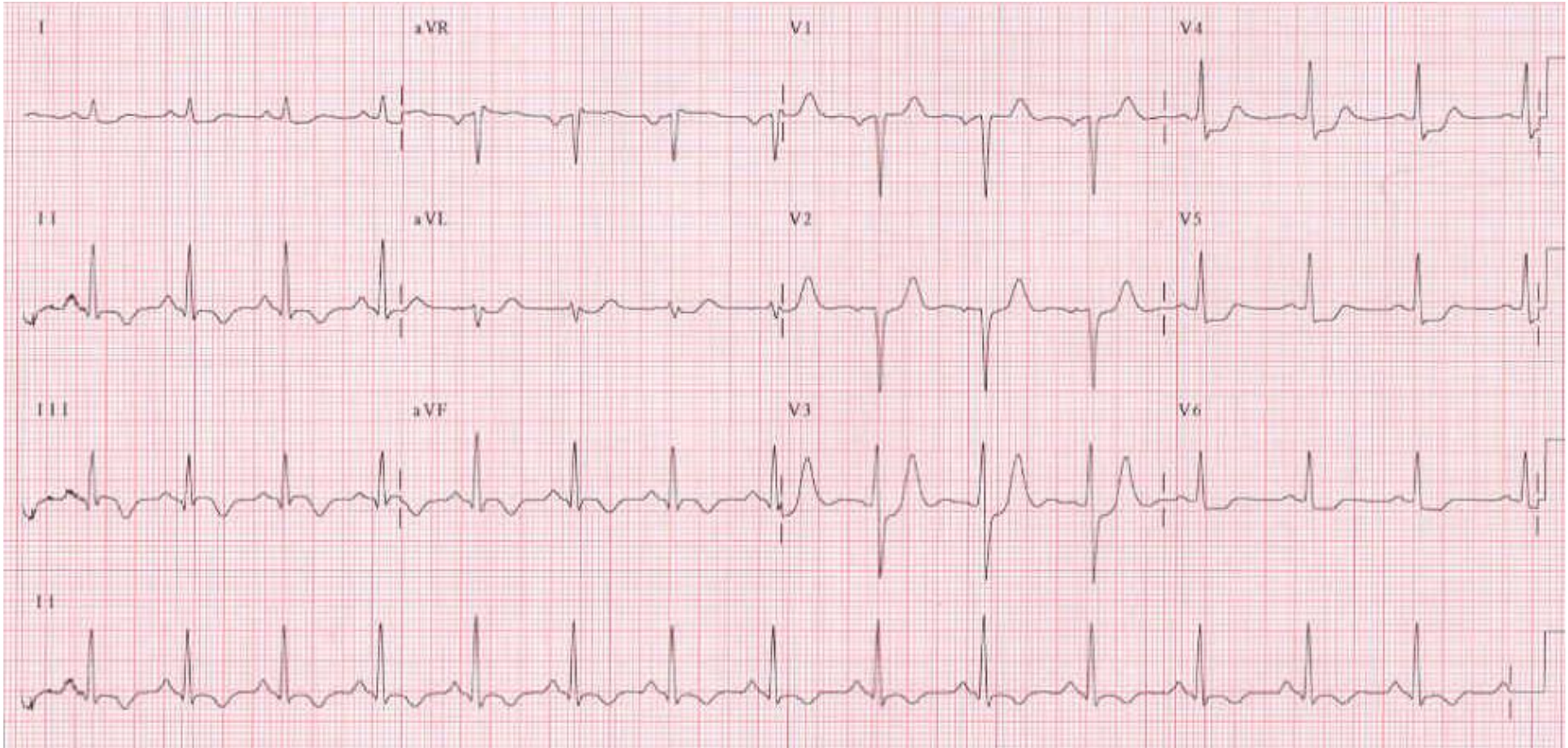


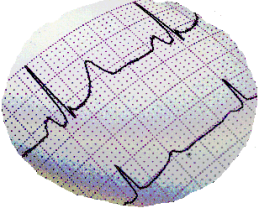
İskemi, SVT



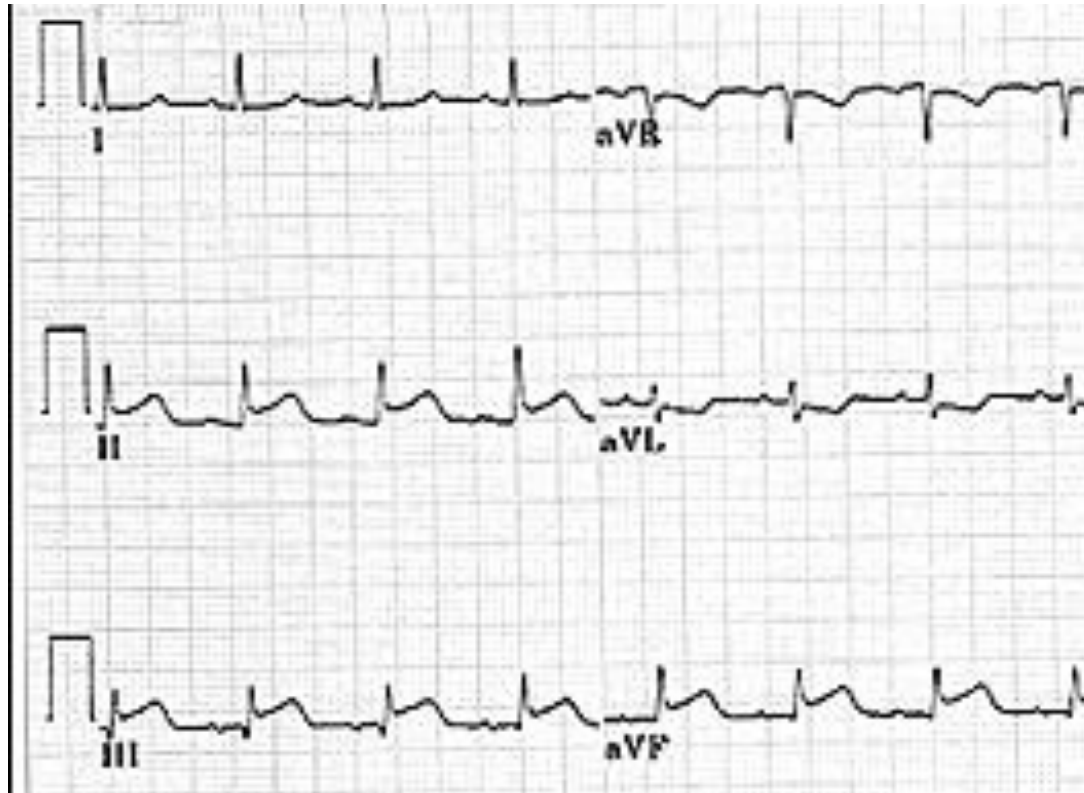


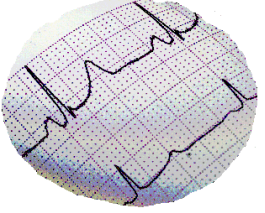
Inferolateral iskemi



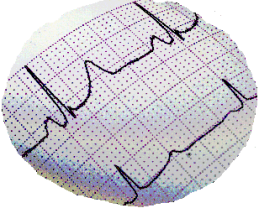


Akut inferior MI





ÖZET



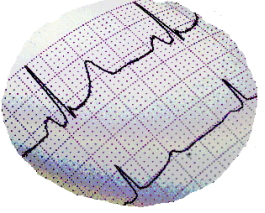
1. Akut Q-dalgalı MI da hangi EKG bulgusu önce oluşur?

A. Q dalgası

B. Hiperakut T dalgası

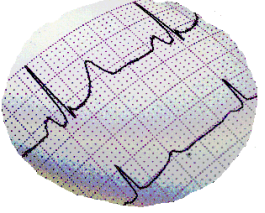
C. T dalga inversiyonu

D. ST segment elevasyonu



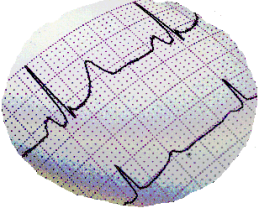
2. Normal septal Q dalgası ile patolojik Q dalgasını ayırmada hangisi yardımcı olabilir?

- A. Genişlik
- B. Yükseklik
- C. Genişlik ve yükseklik
- D. QRS genişliği

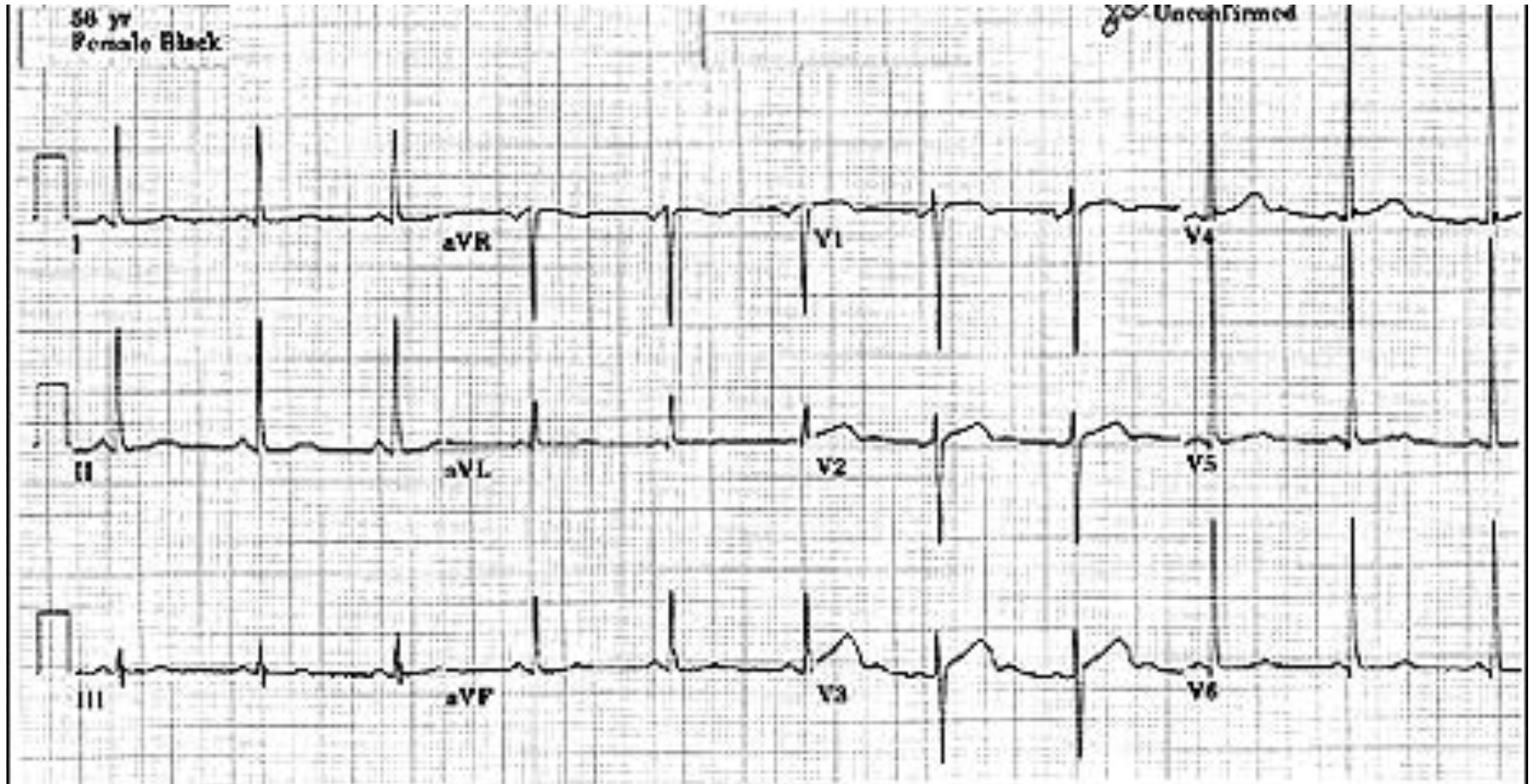


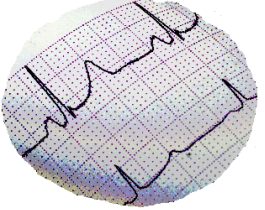
3. EKG ile ilgili aşağıdakilerden hangisi doğrudur?

- A. Ekstremitte derivasyonları kalbi horizontal planda görür
- B. PR mesafesi normalde 0.12 - 0.20 sn'dir ve Tam A-V blokta giderek uzar
- C. Birinci derece A-V blokta, P dalgasına zaman zaman QRS cevabı oluşmaz
- D. Ventriküler ritimlerde QRS kompleksi genişlemiştir.**

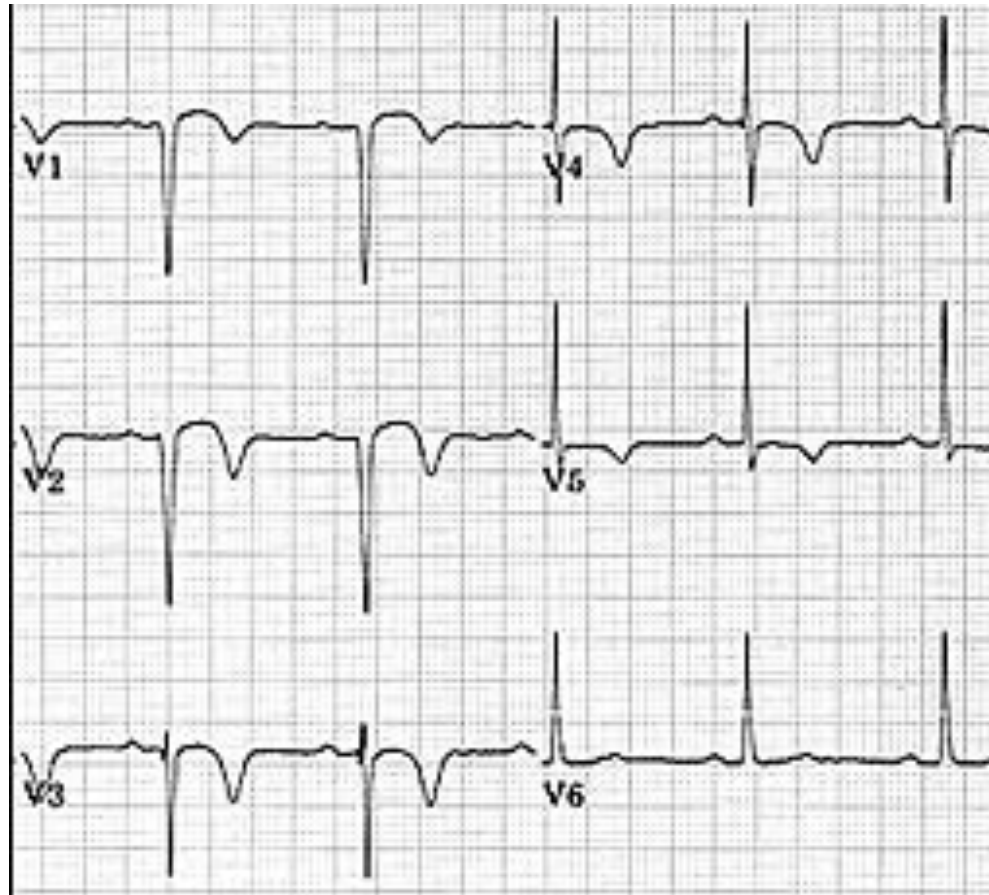


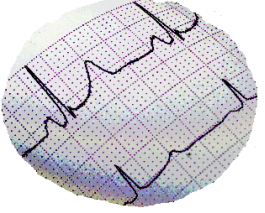
Sol Ventrikül Hipertrofisi





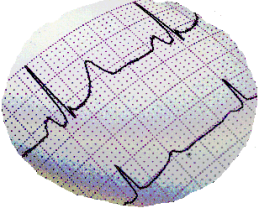
Oturmuş anteroseptal MI



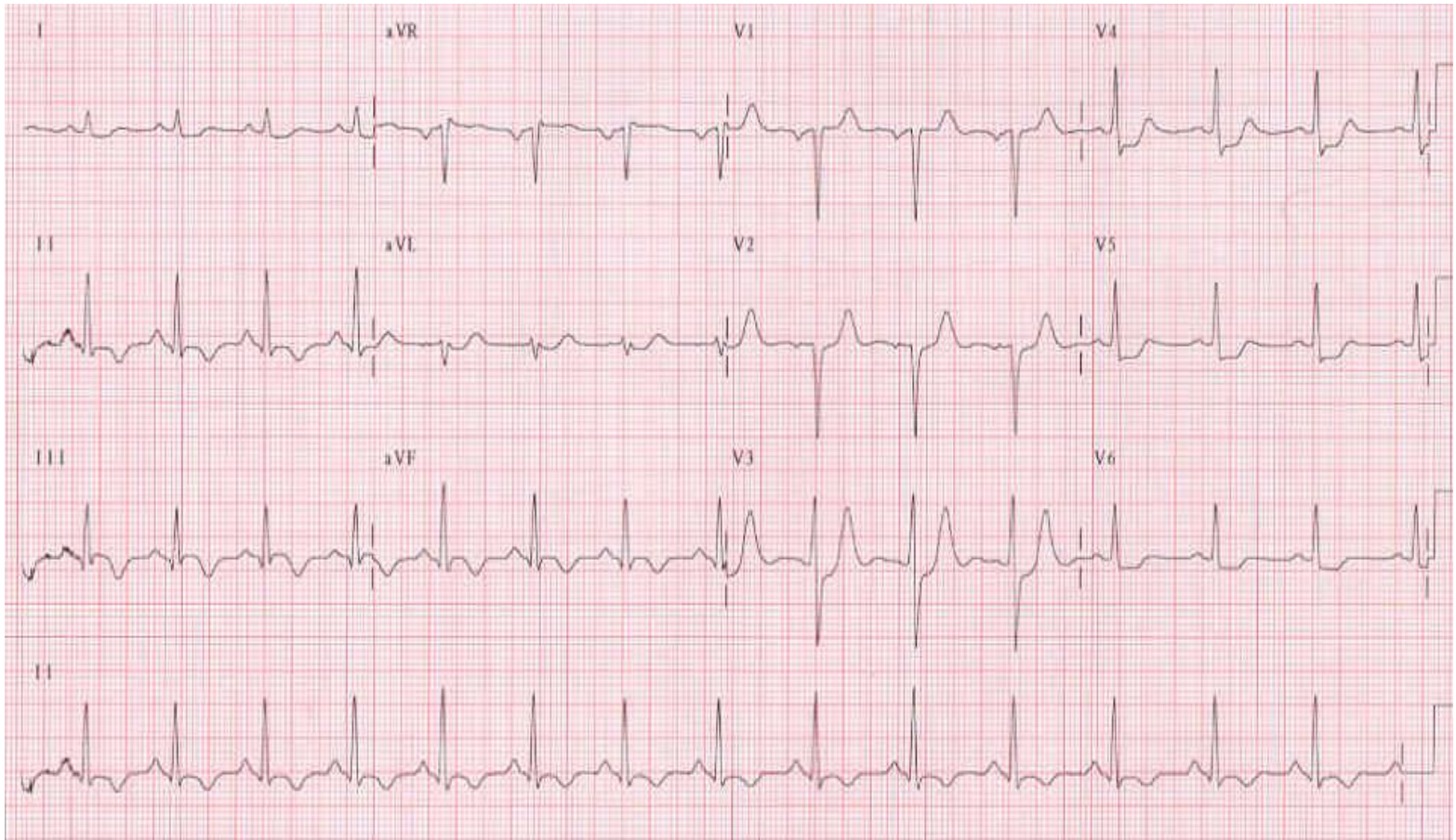


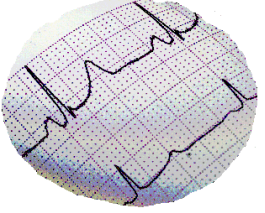
6. Hangisi ST segment depresyonuna yol açar?

- A. İskemi
- B. Hiperventilasyon
- C. Ventriküler Hipertrofi
- D. Hipokalemi
- E. Hepsi



Inferolateral iskemi





P-R aralığını ölçelim

- 0.28 sn

