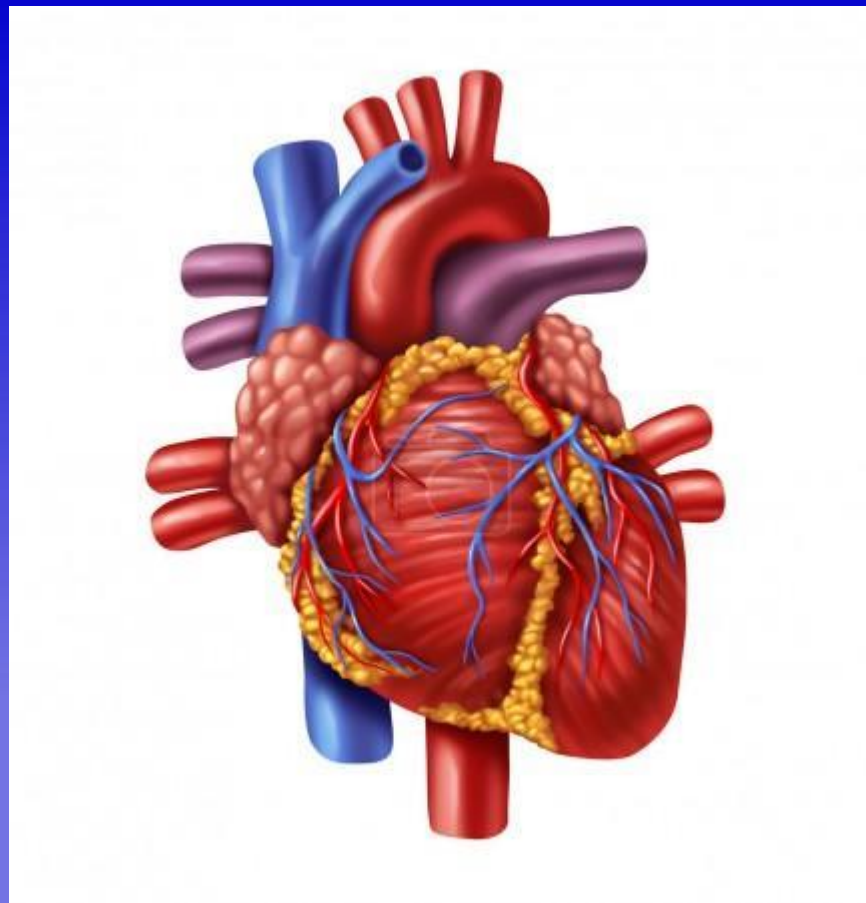


# Vyšetřovací metody v kardiologii

L.Křivan



# Anamnéza

- **Srdeční onemocnění**
- **RA**
- **Rizikové faktory**
- **Fyzická zátěž**
- **Synkopa**
- **Arytmie**
- **Medikace**



# Celkový vzhled pacienta

- **Cyanóza**

Children with Tetralogy of Fallot exhibit bluish skin during episodes of crying or feeding.

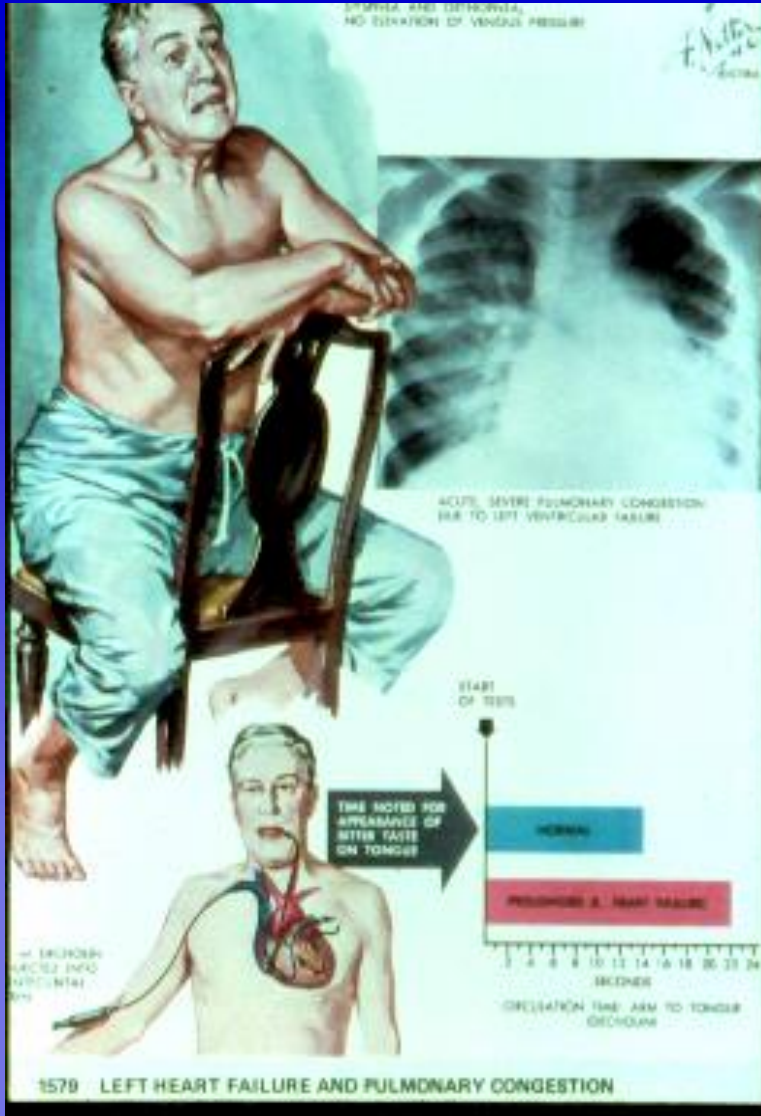


ADAM



Redukovaný Hb v kapilární krvi  $> 50\text{g/l}$

# Celkový vzhled pacienta



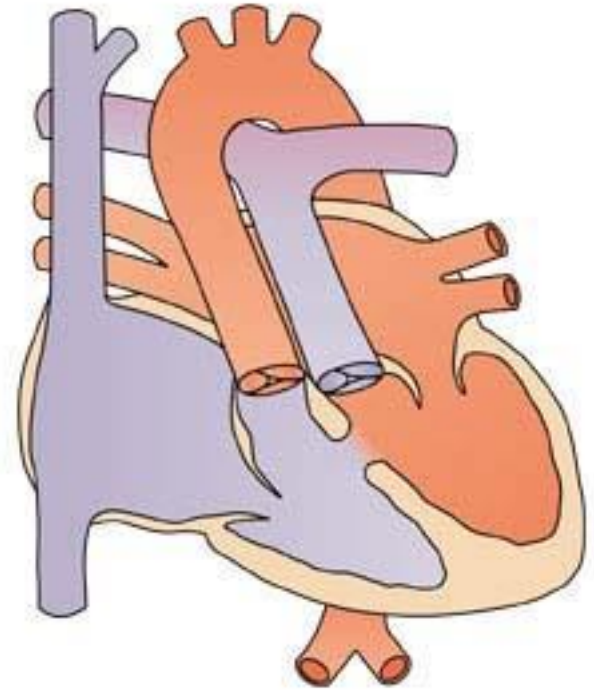
## Celkový vzhled pacienta



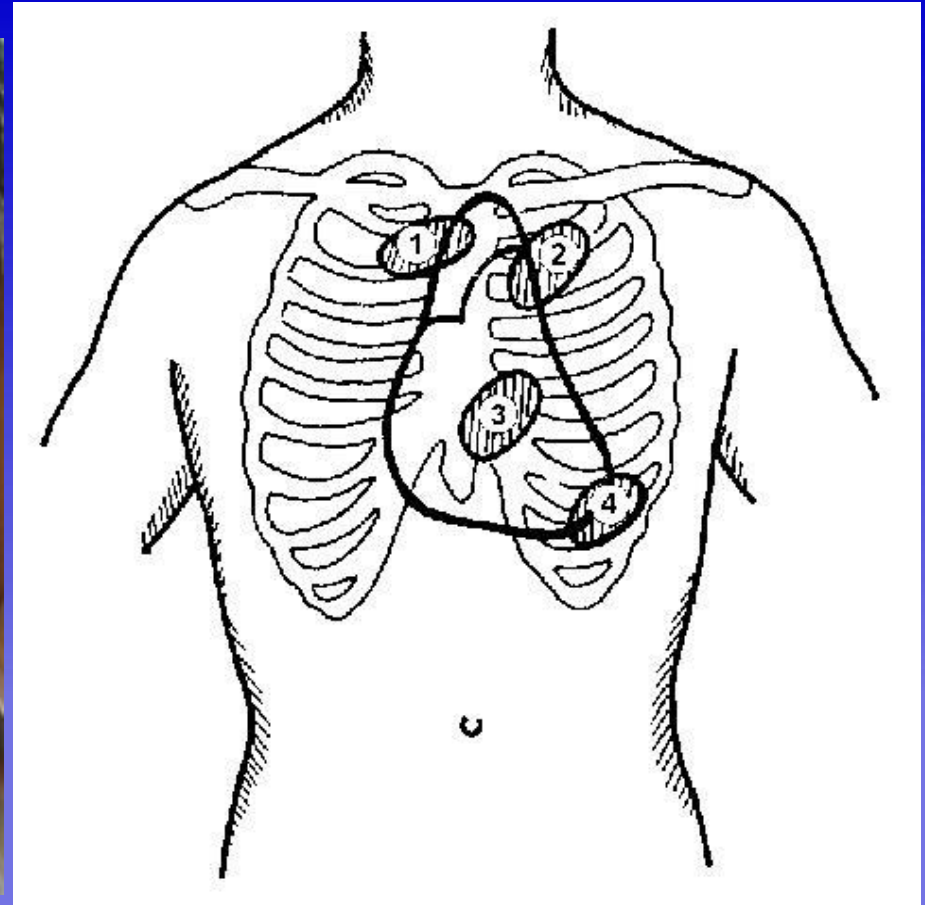
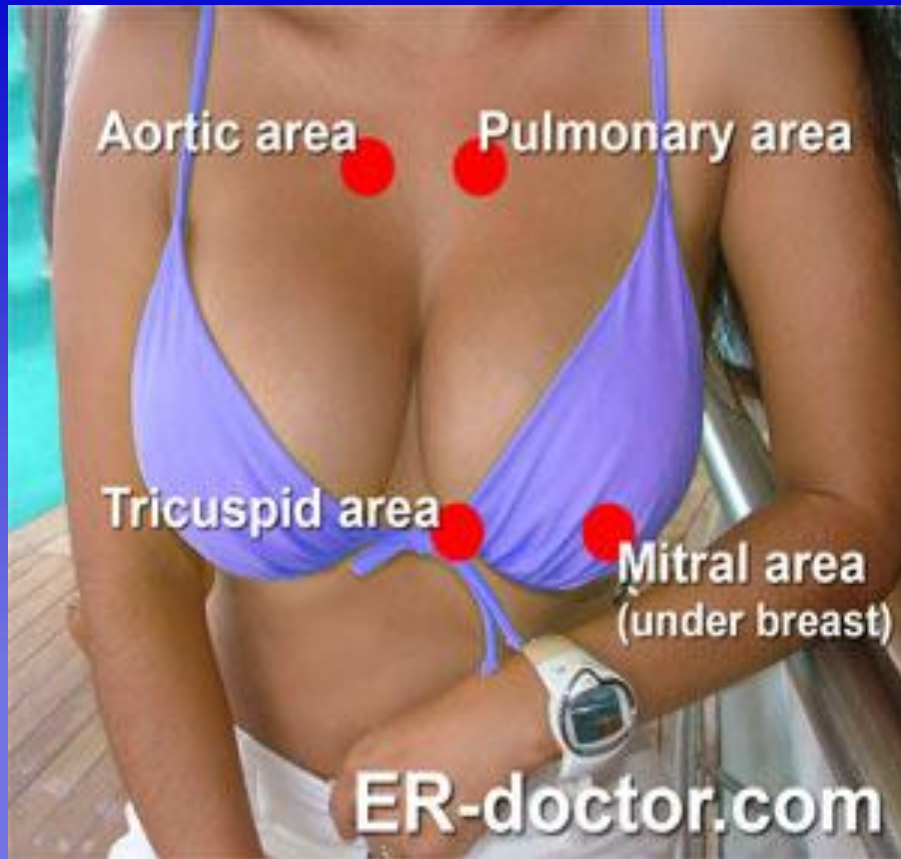
## Celkový vzhled pacienta



Transposition of the Great Arteries

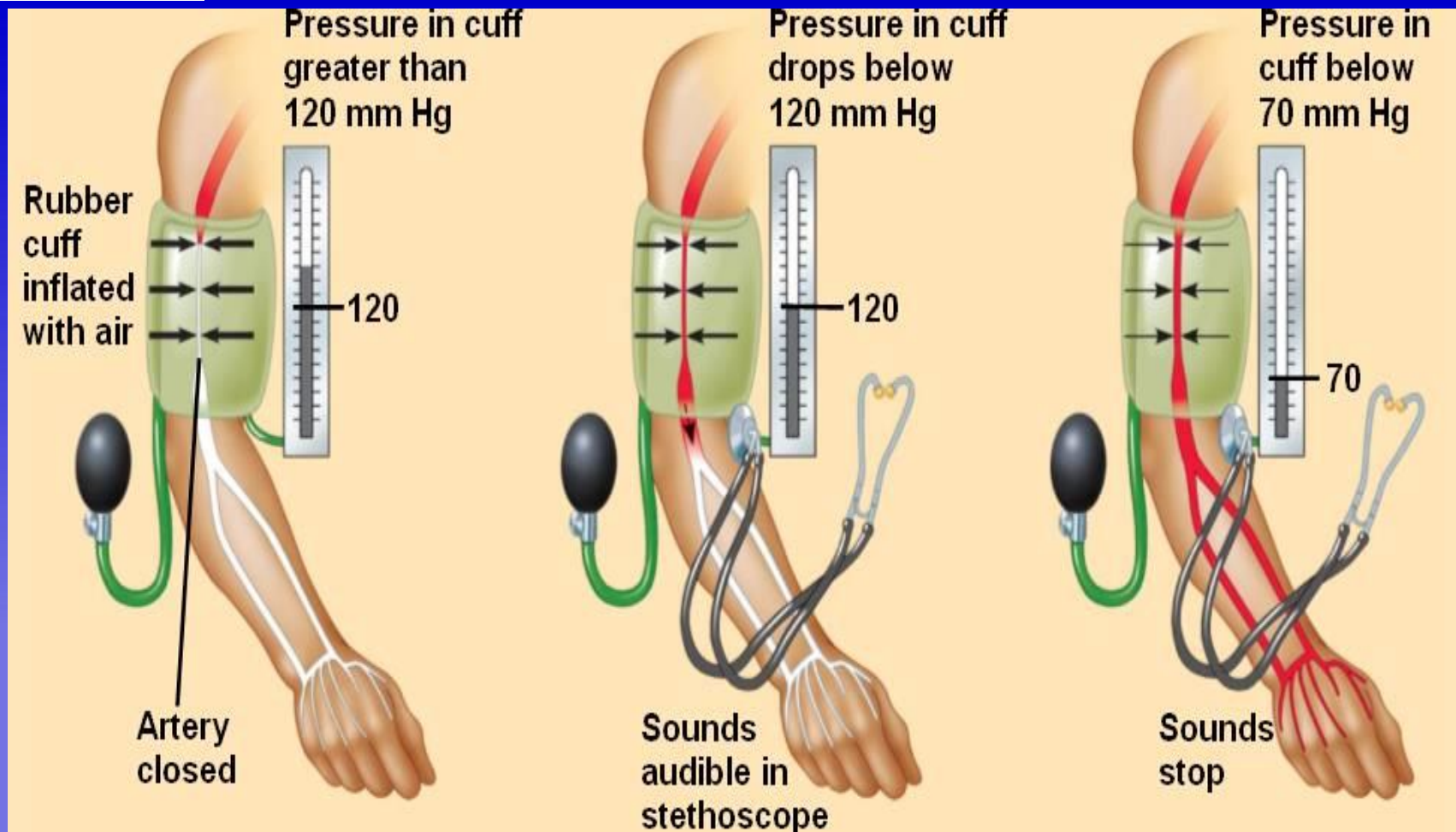


# Poslech srdce





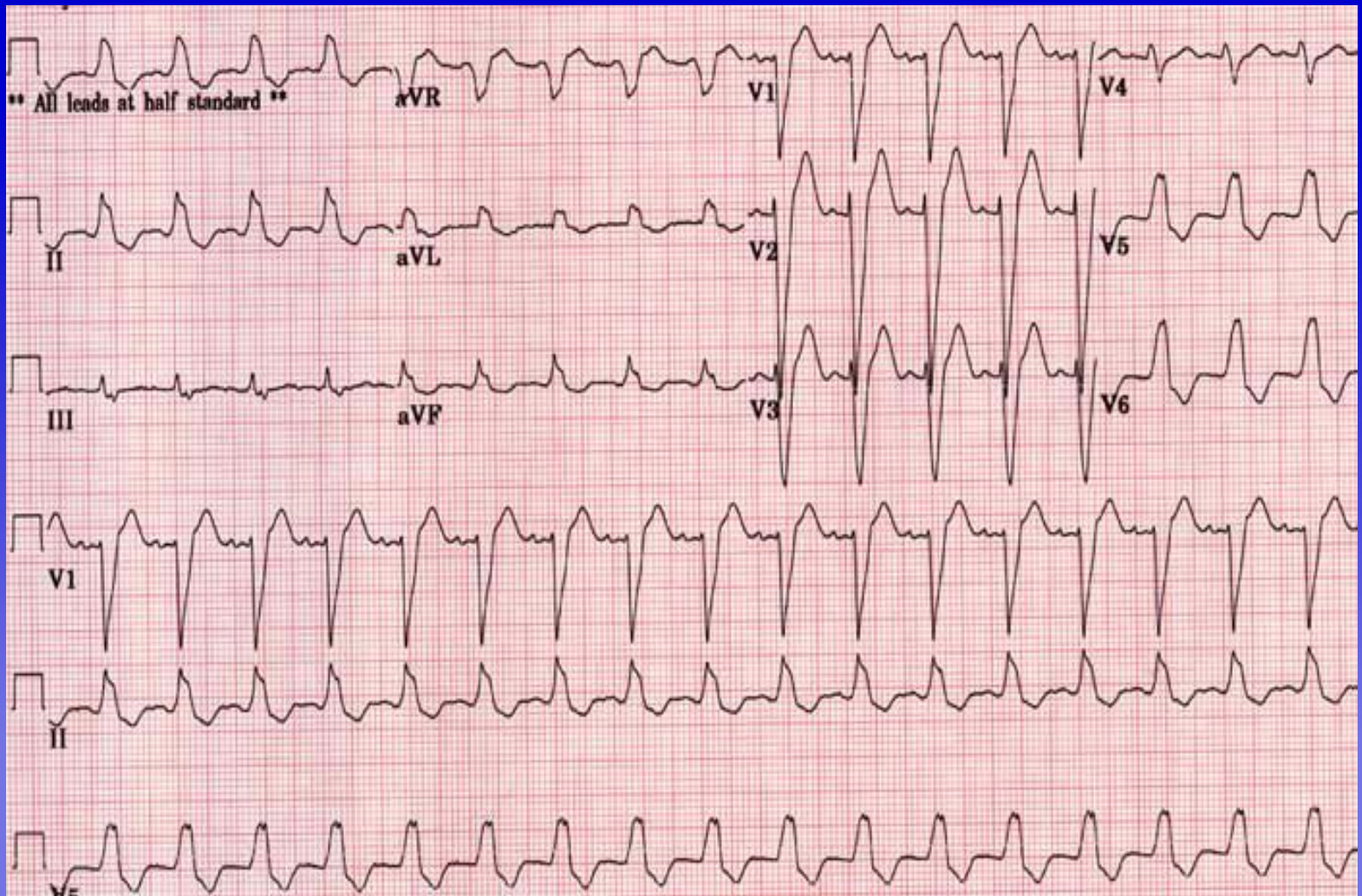
# Tlak krve



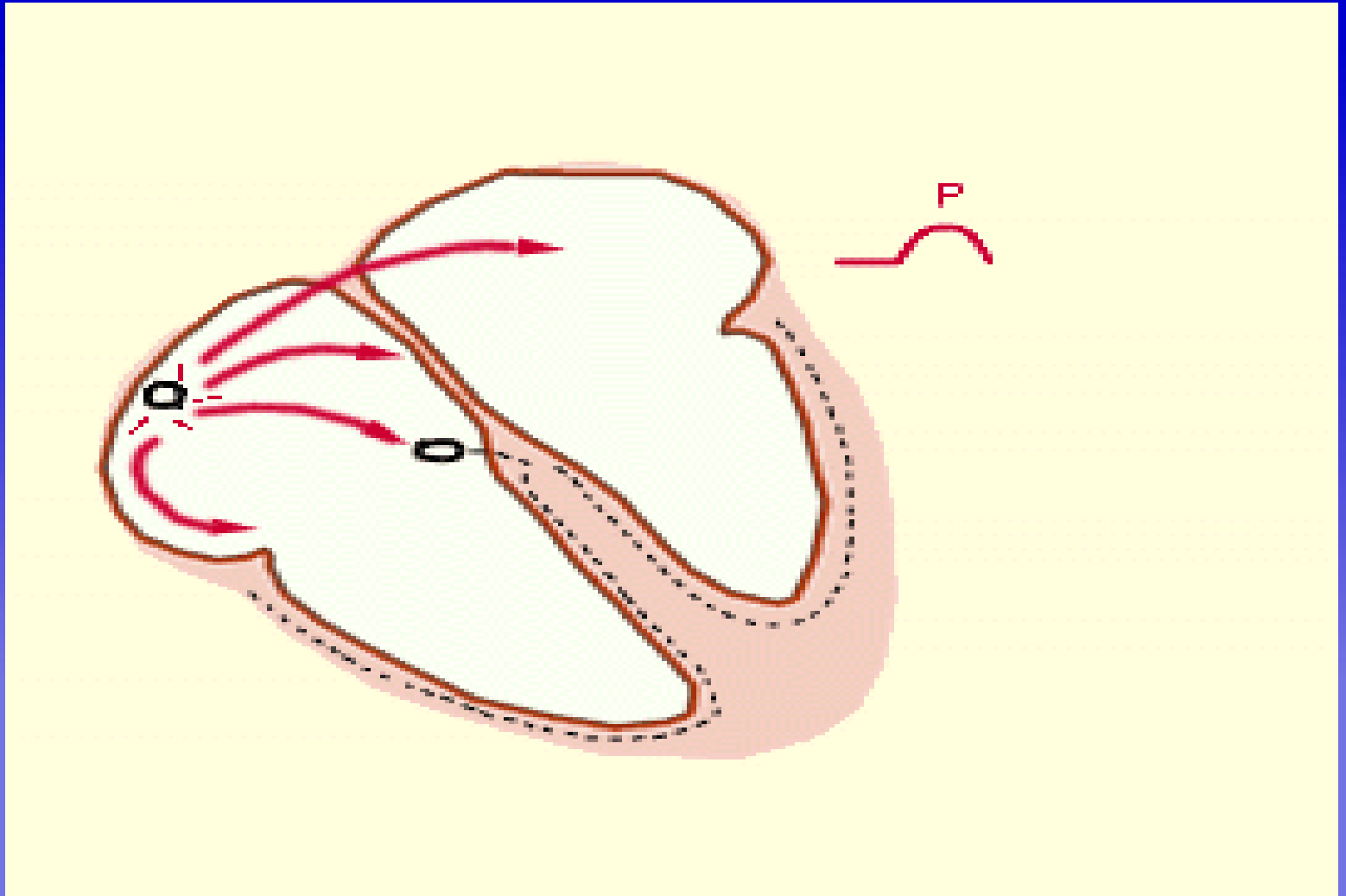


# Neinvazivní

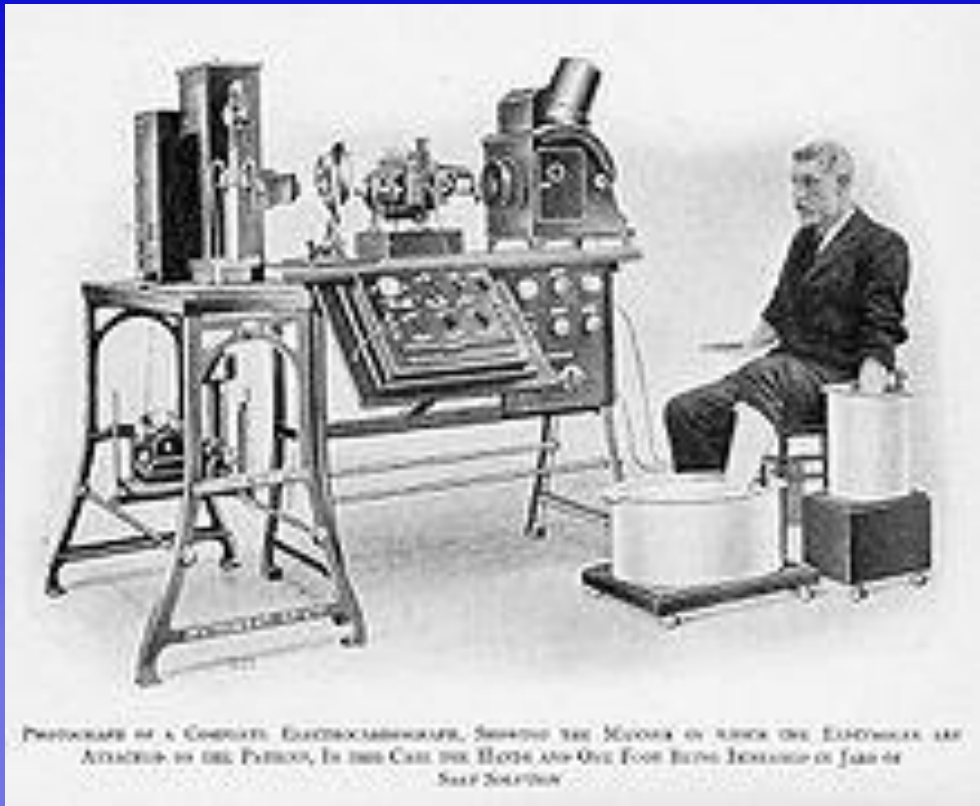
- **EKG** – porucha rytmu, přítomnost ischemie, stav po IM v minulosti, hypertrofii LK, PK, poruchy iontogramu
- **RTG srdce + plíce** – KT index, přítomnost městnání, charakteristický RTG u srdečních vad
- **TK** – hypertenze, hypotenze



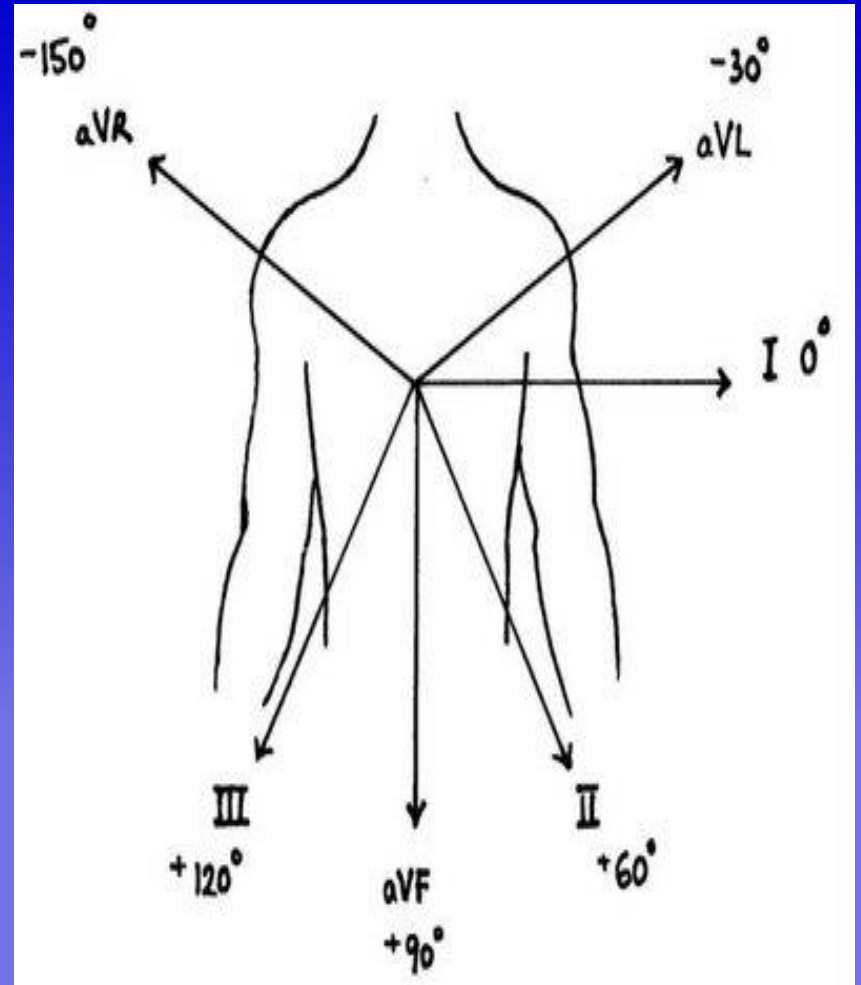
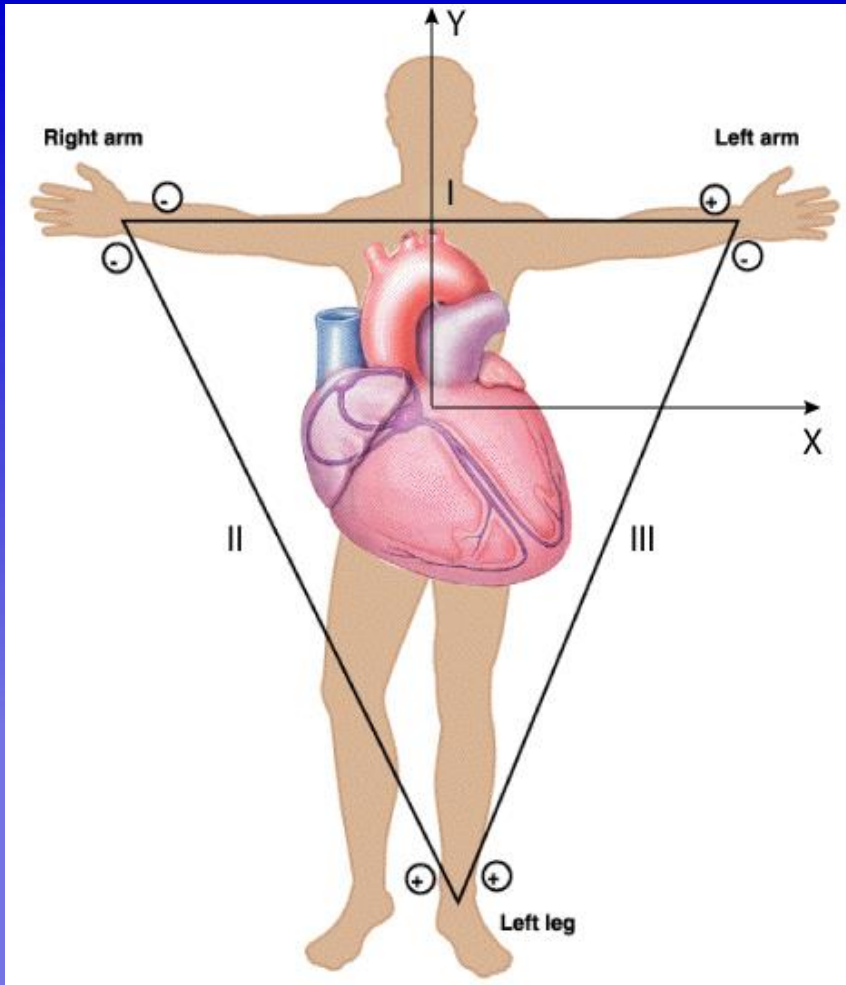
# EKG (Willem Einthoven 1893)



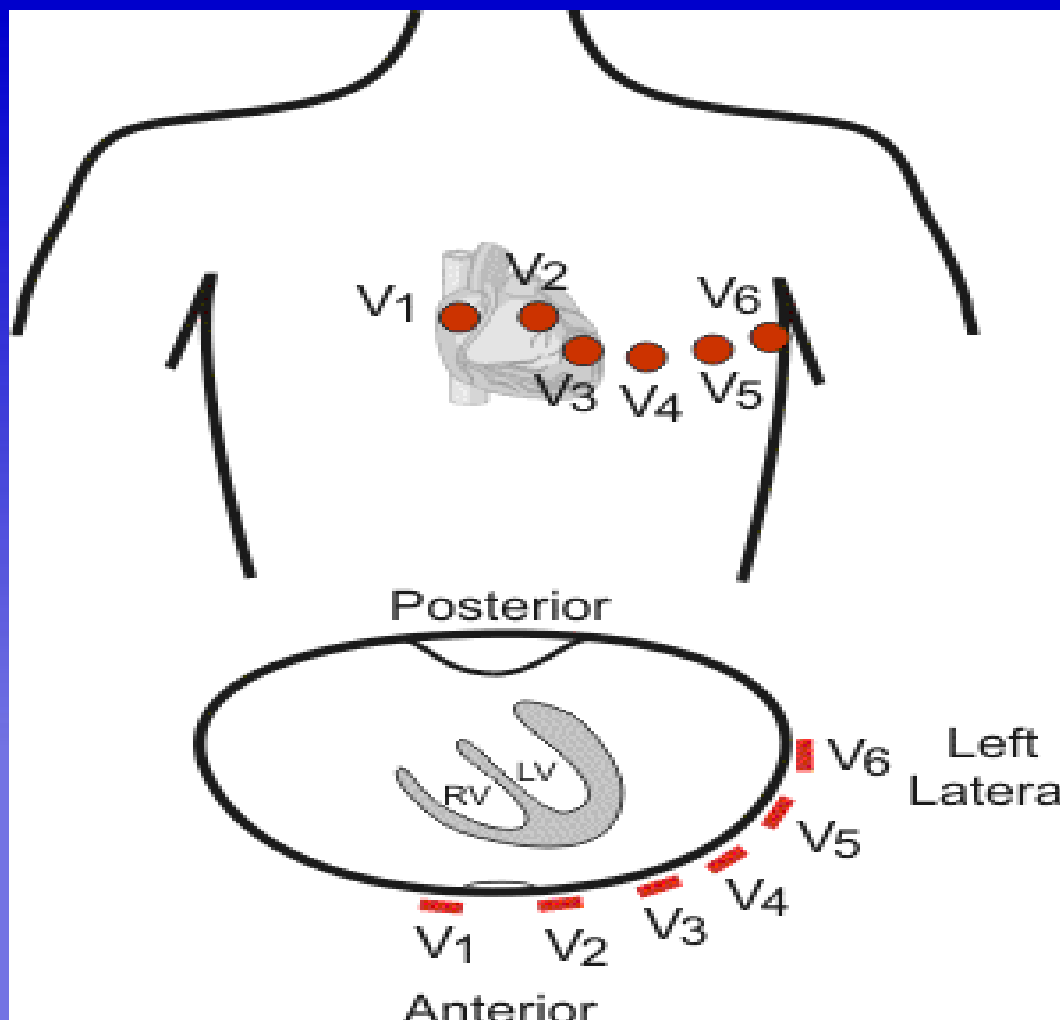
## Historie EKG

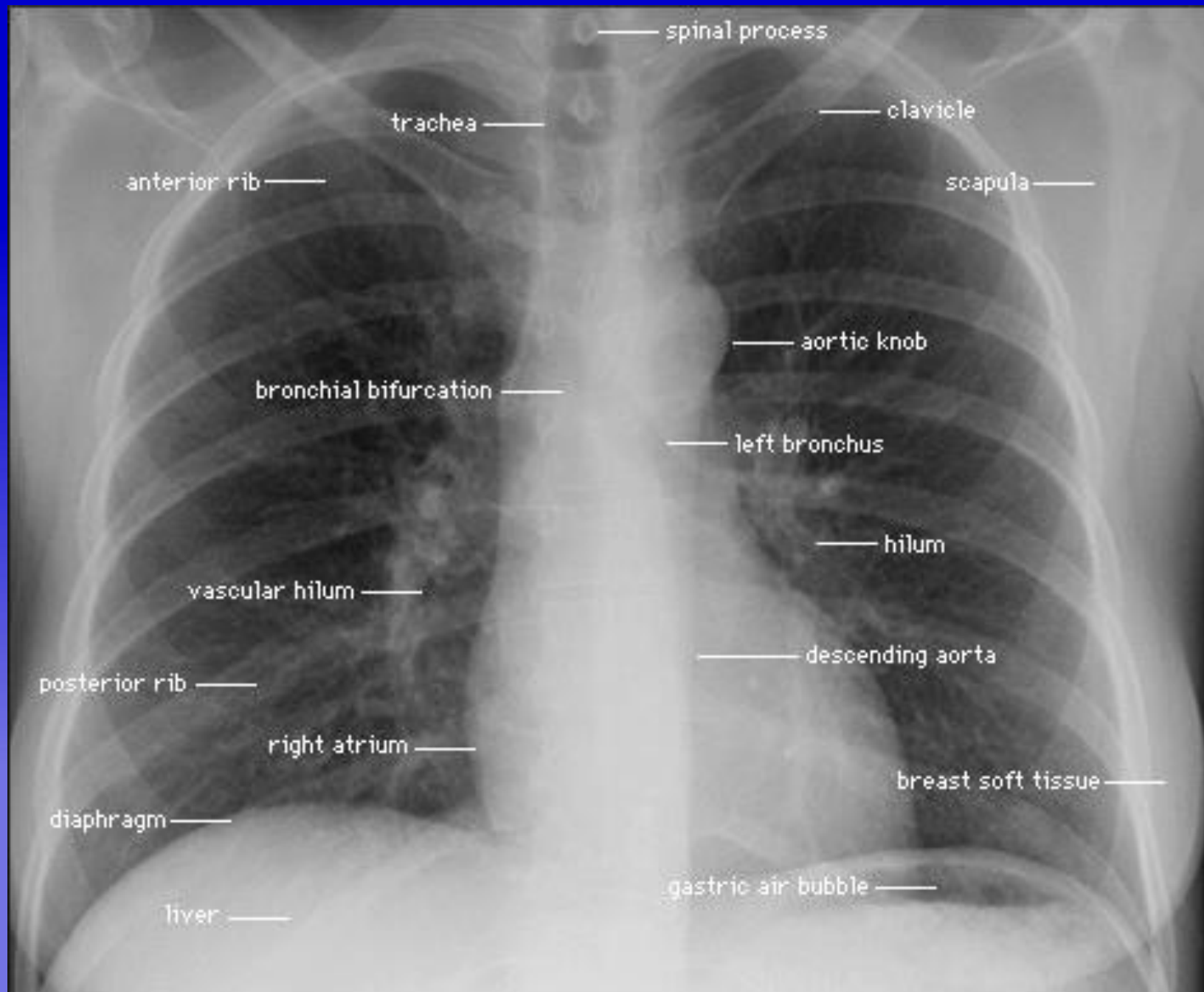


# EKG – Končetinové svody

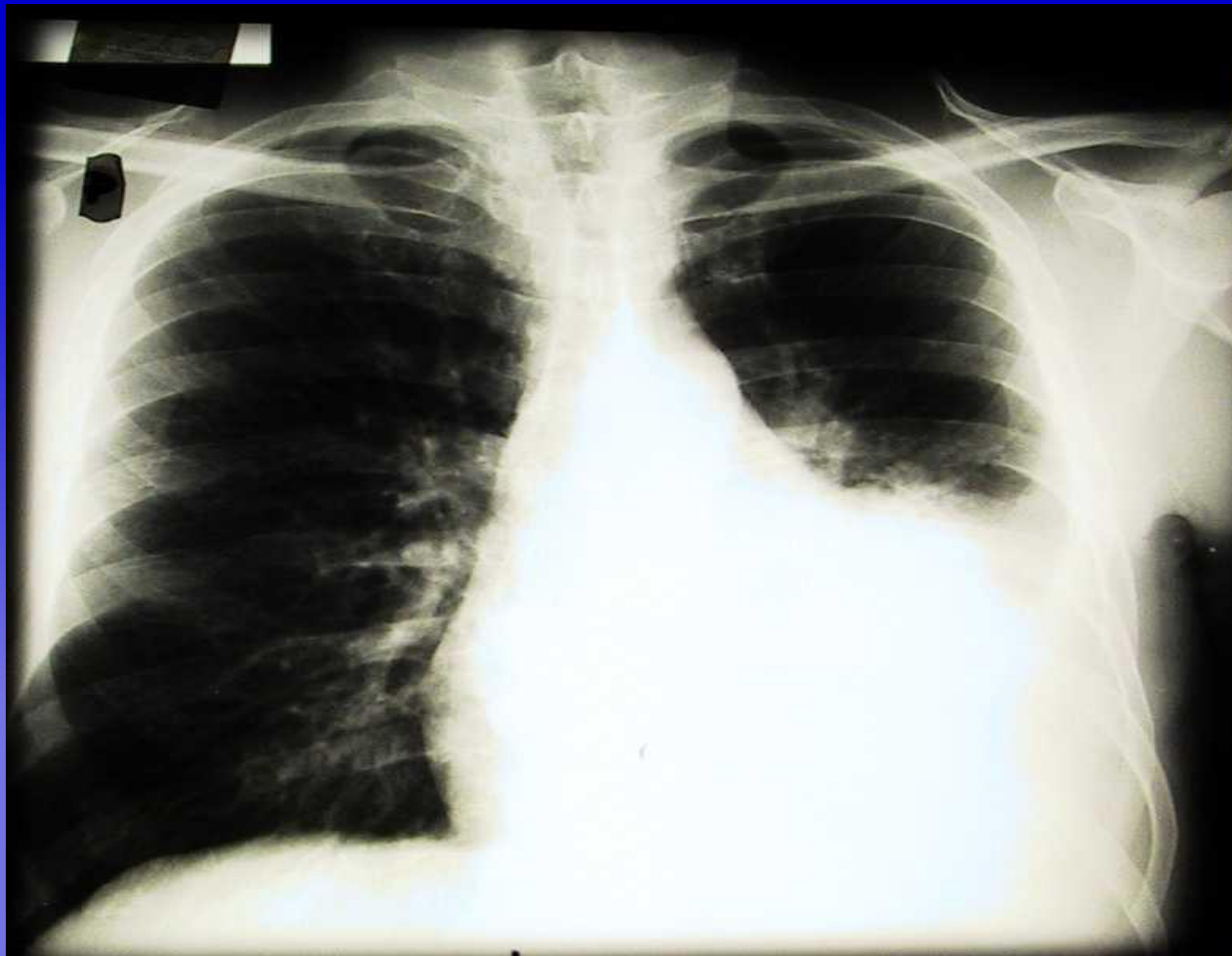


# EKG- prekordální svody



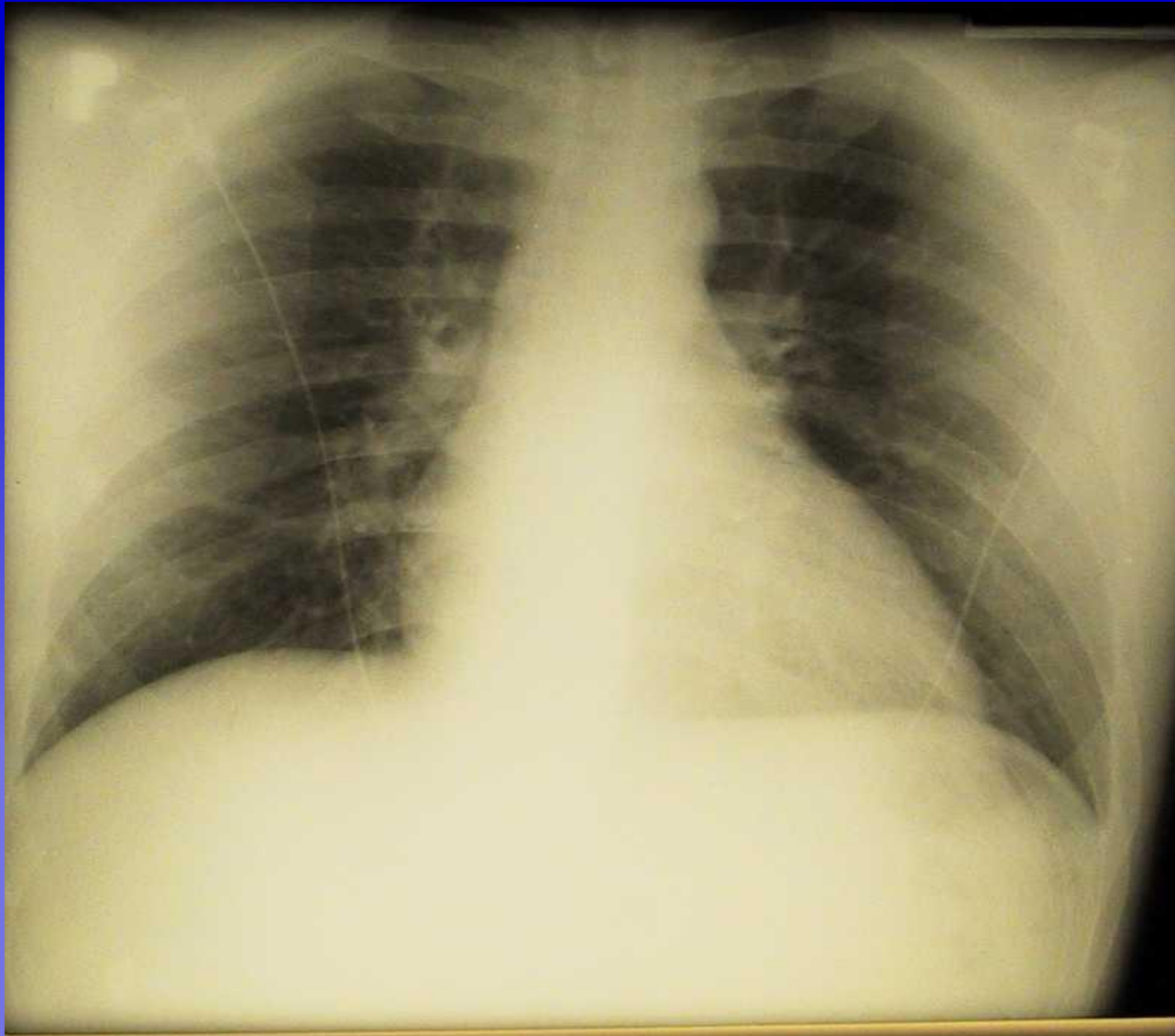


## Tumor v I. hemithoraxu

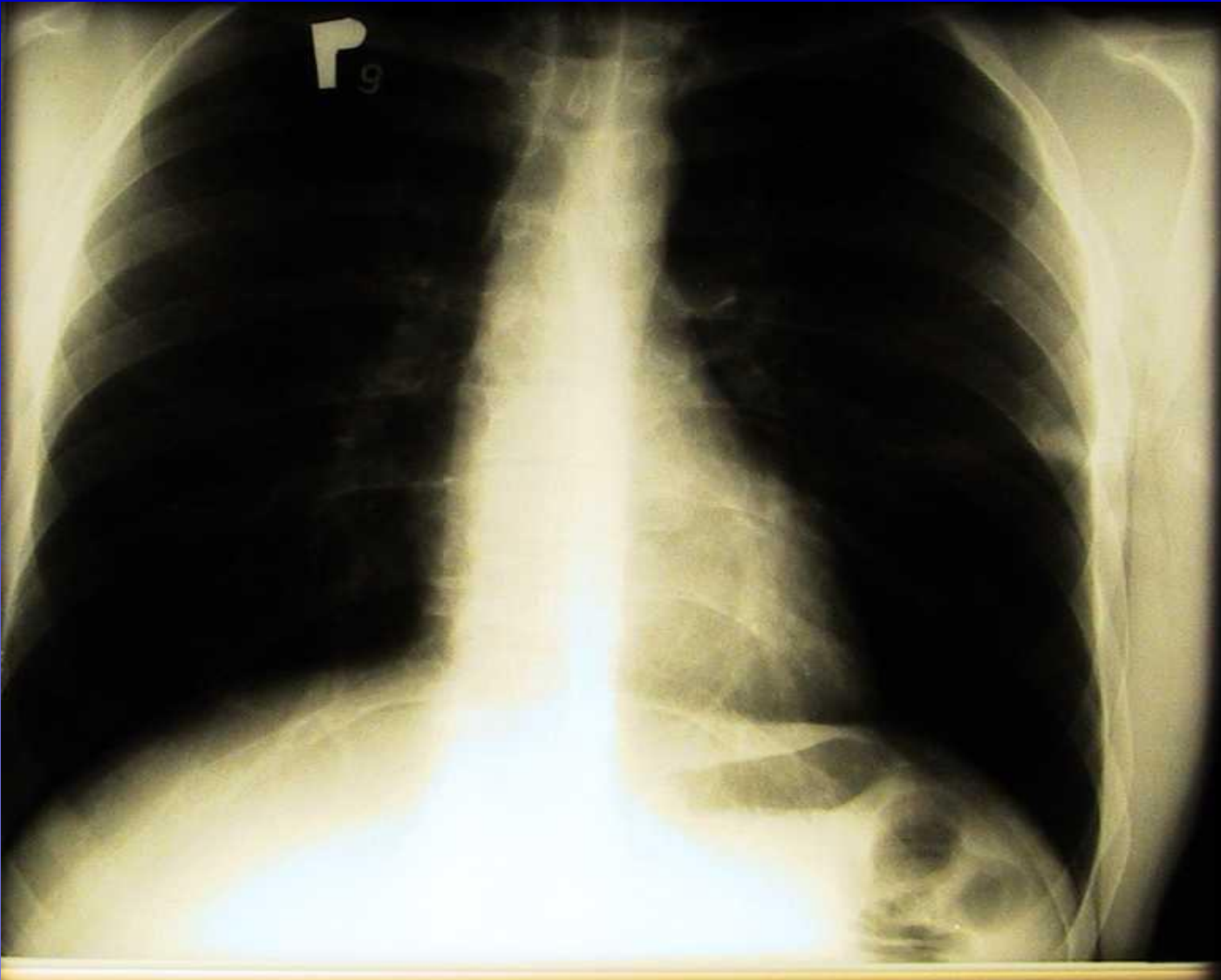




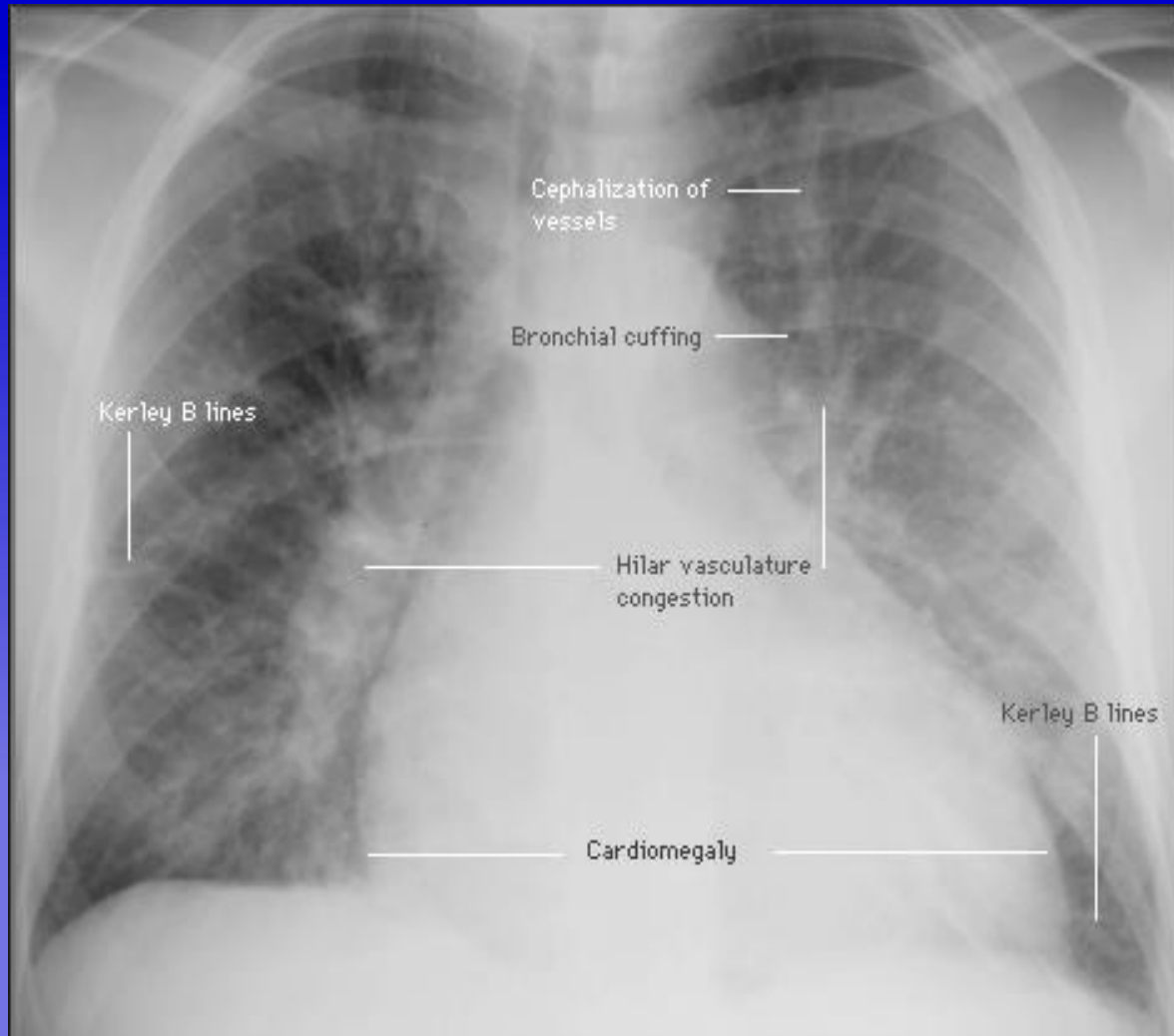
# Tamponáda srdeční



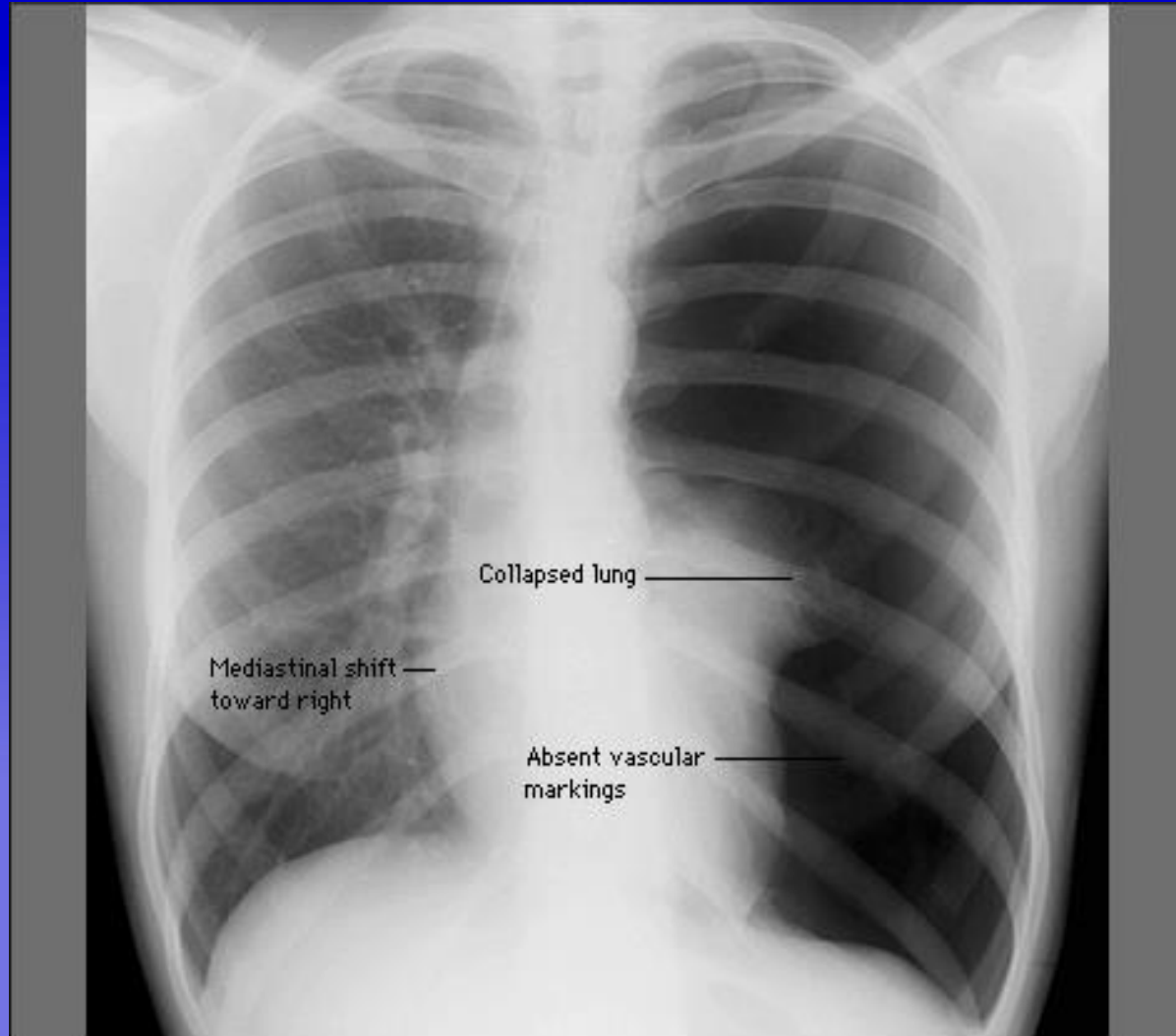
## St.p. perikardiální punkci



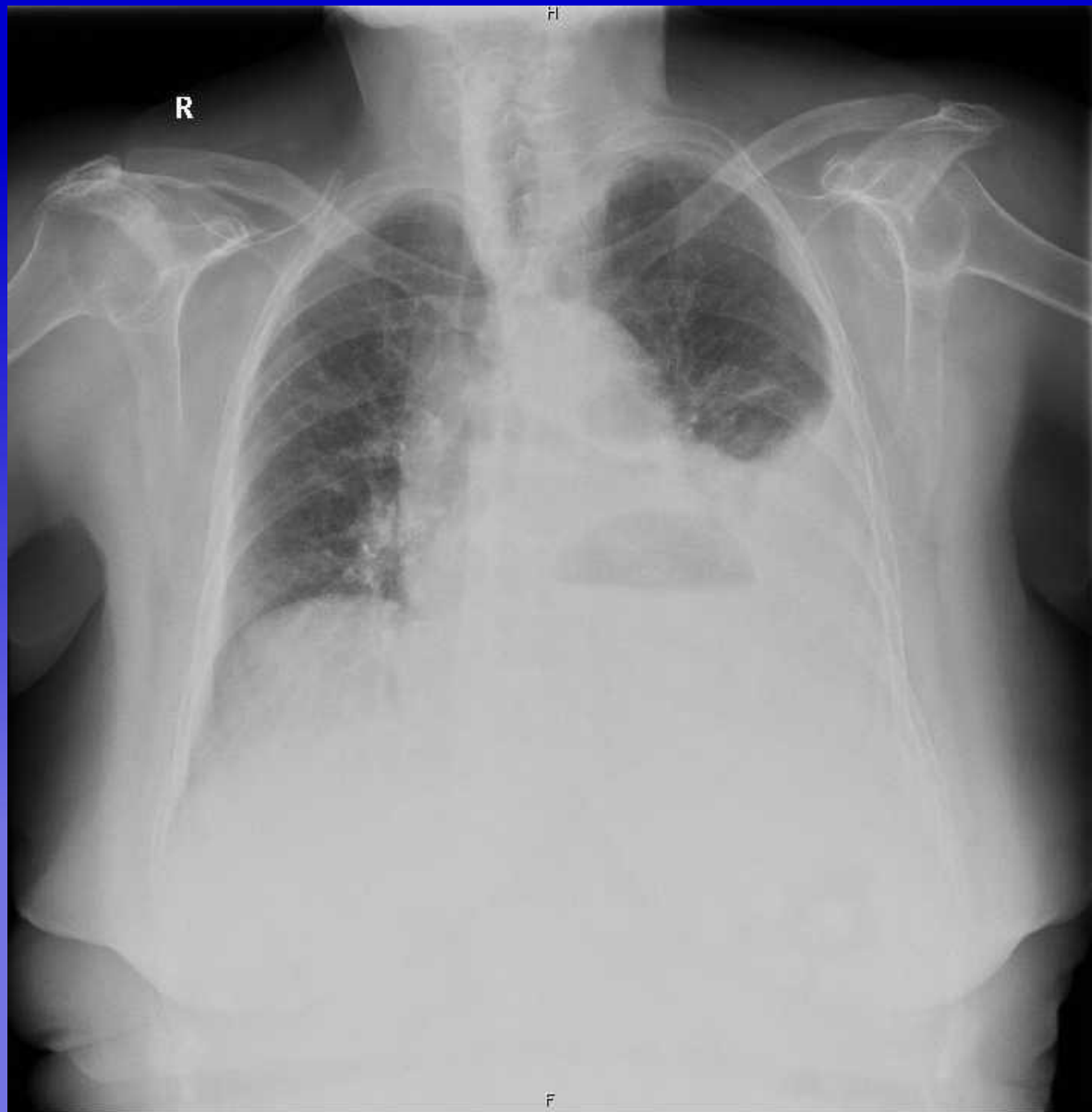
# Plicní edém



# PNO



# Žaludek v hrudníku

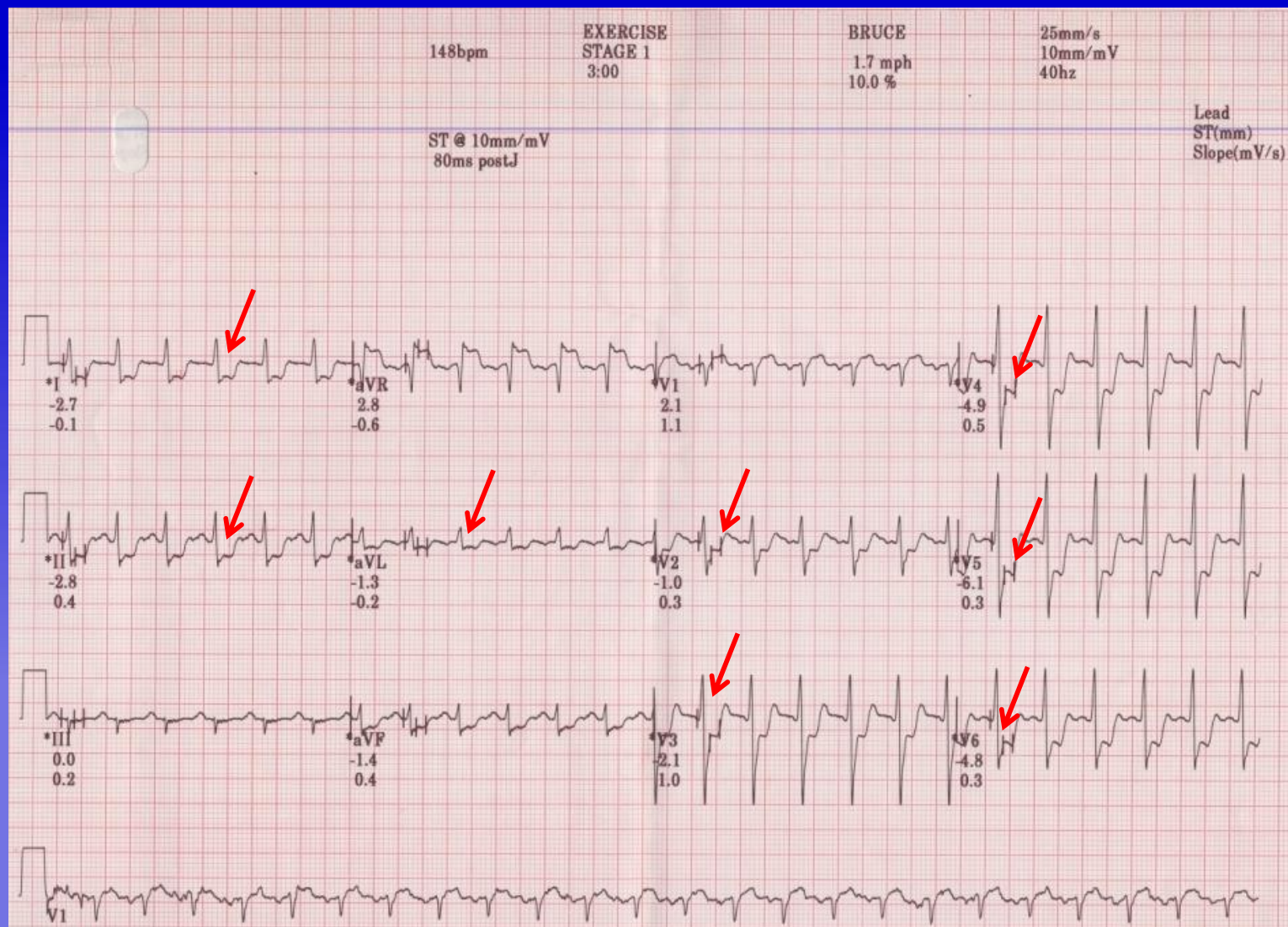


## Neinvazivní vyšetřování ICHS

- **Ergometrie** – dosažení maximální aerobní TF ( 220 – věk ) / submaximální (200 - věk) . Deprese a elevace EKG.
- **Zátěžová echokardiografie** – porucha prokrvení se projeví poruchou kinetiky srdce při zátěži
- **Dobutamin. echokard.** – farmakologická tachykardie



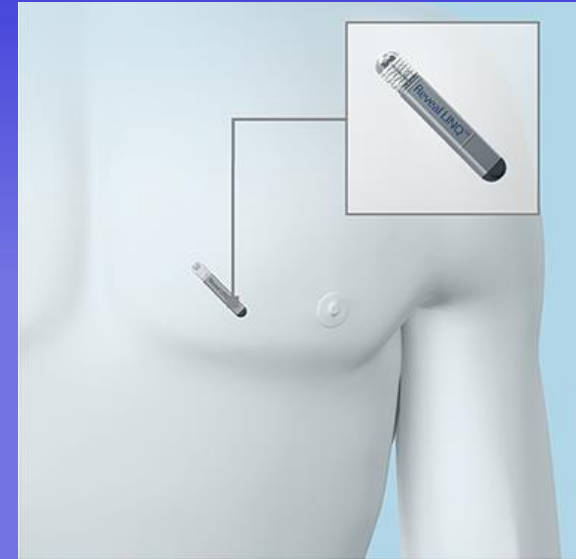
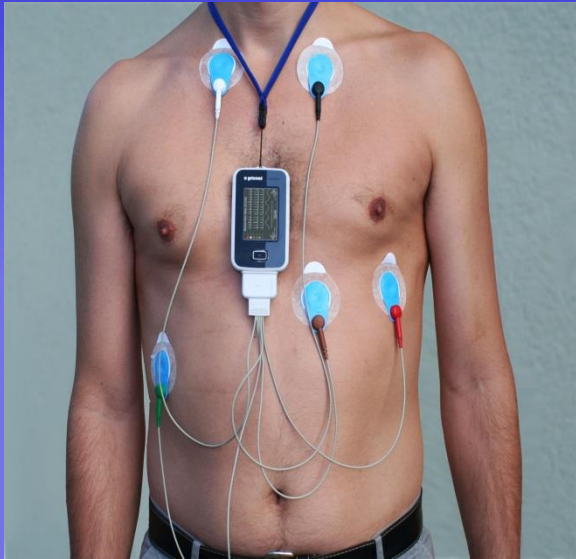
# Pozitivní zátěžový test





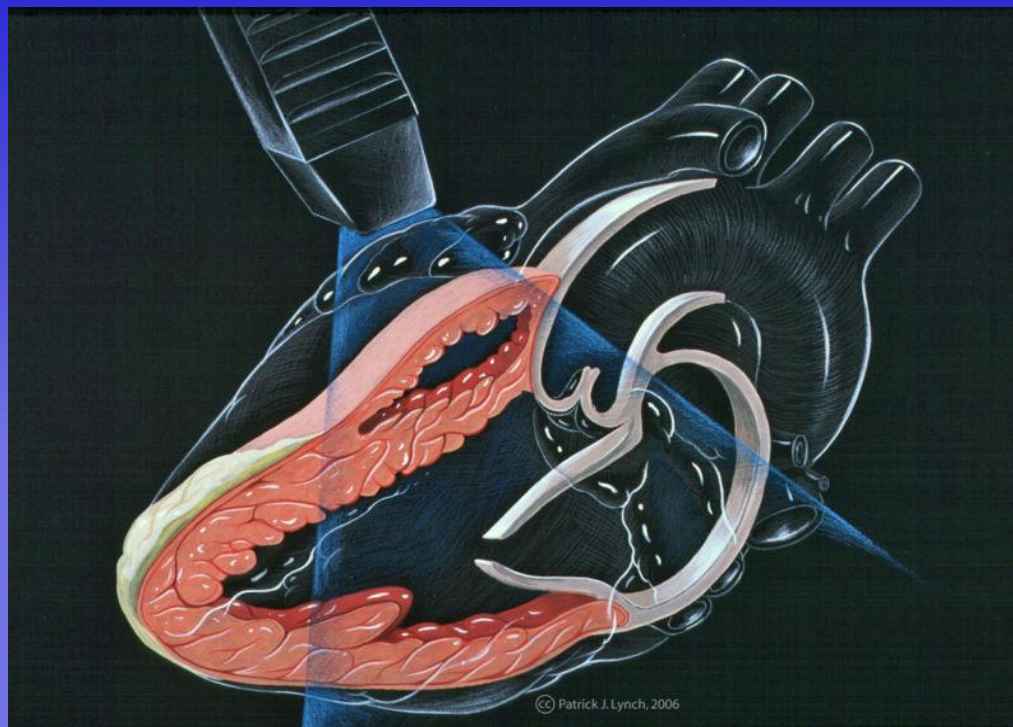
# Neinvazivní vyšetřování arytmií

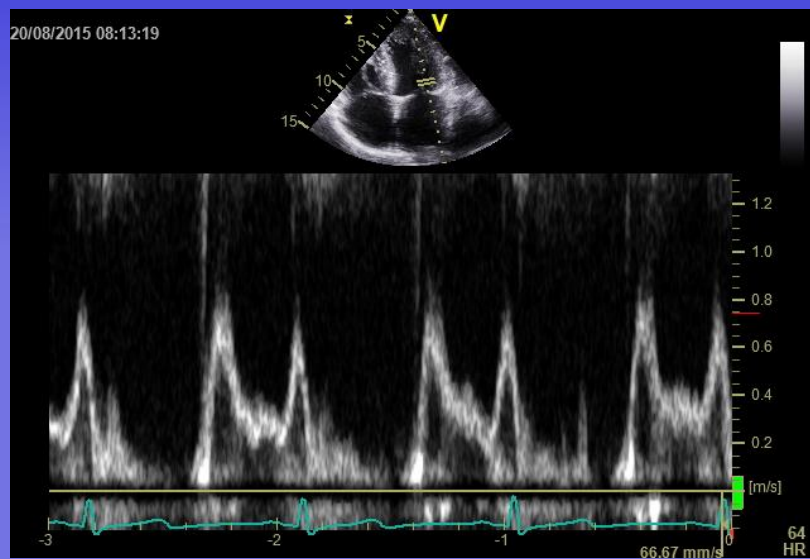
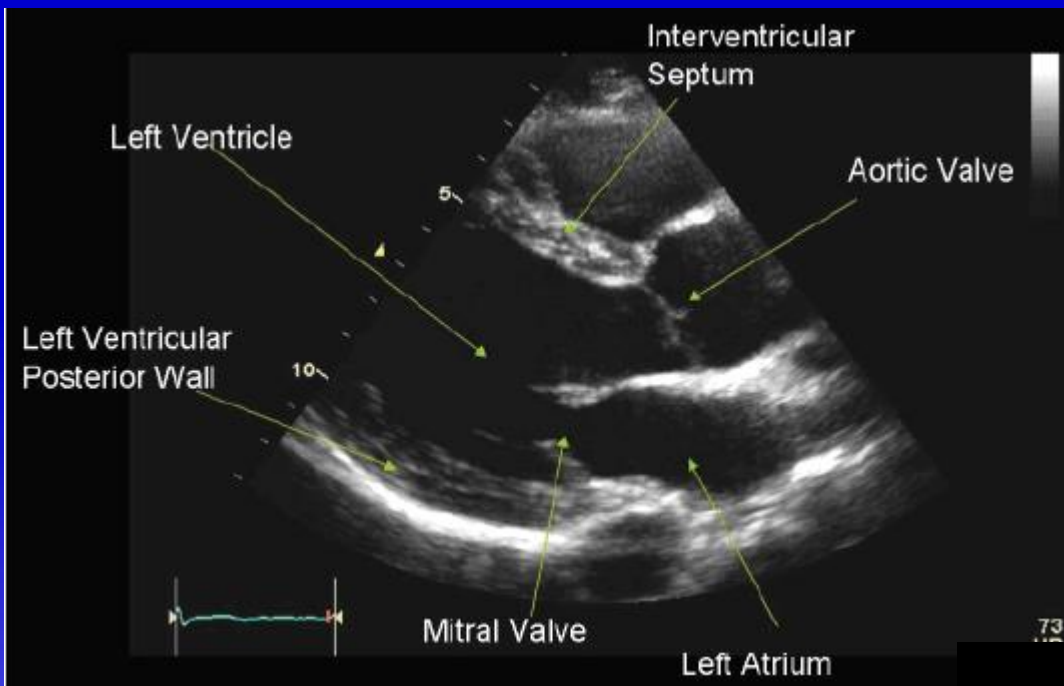
- **EKG Holter** – záchyt arytmiie v průběhu 24 hod (až 7 dní)
- **R – test, rhythm karta** – monitorace 5 dní – 3 měsíce
- **ILR** – monitorace až 3 roky u pacientů s neobjasněnou synkopou, arytmiemi



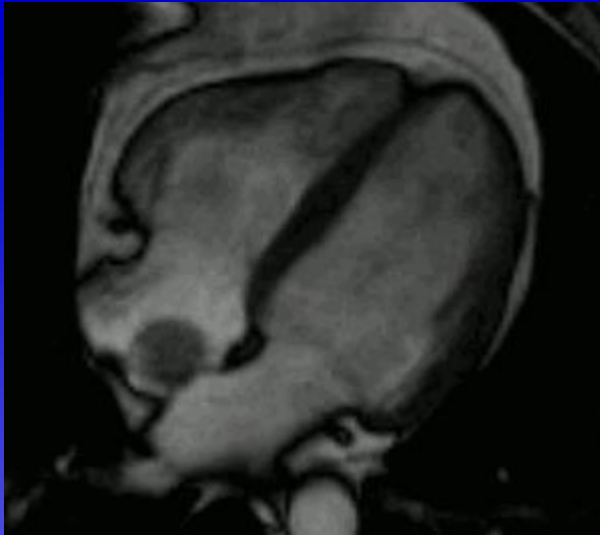
## Neinvazivní vyšetřování funkce LK

- **ECHO** – kinetika srdečních oddílů, perikard, funkce chlopní, kvantifikace vad, detekce trombů a echokontrastu, průkaz defektů septa síní a komor



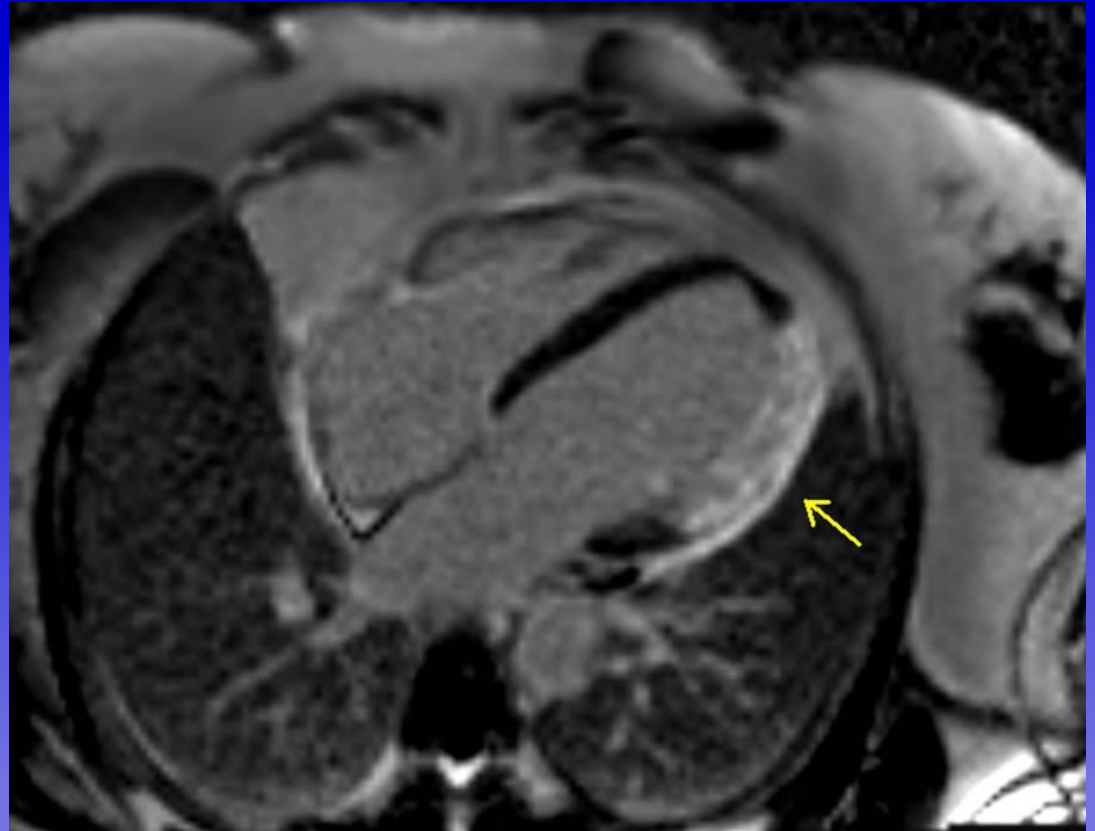


# MRI srdce

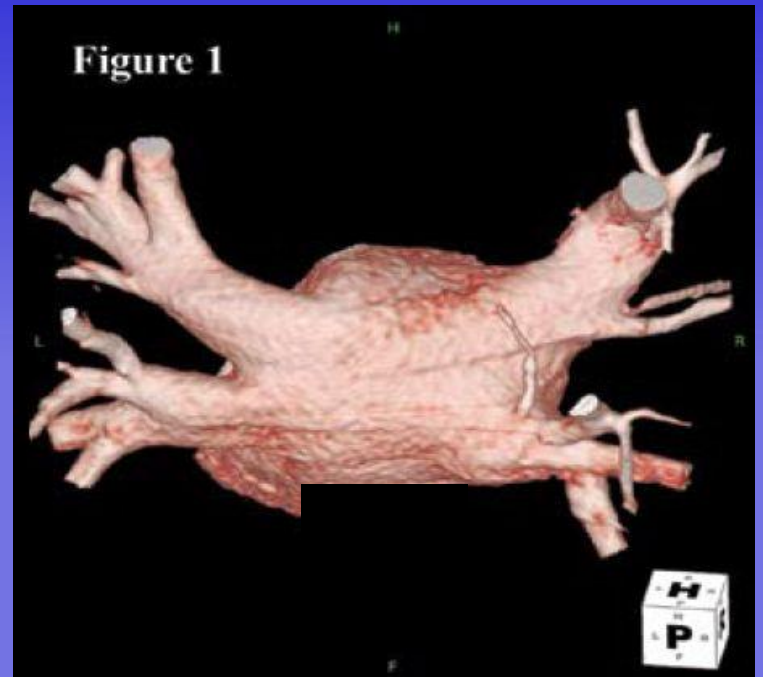
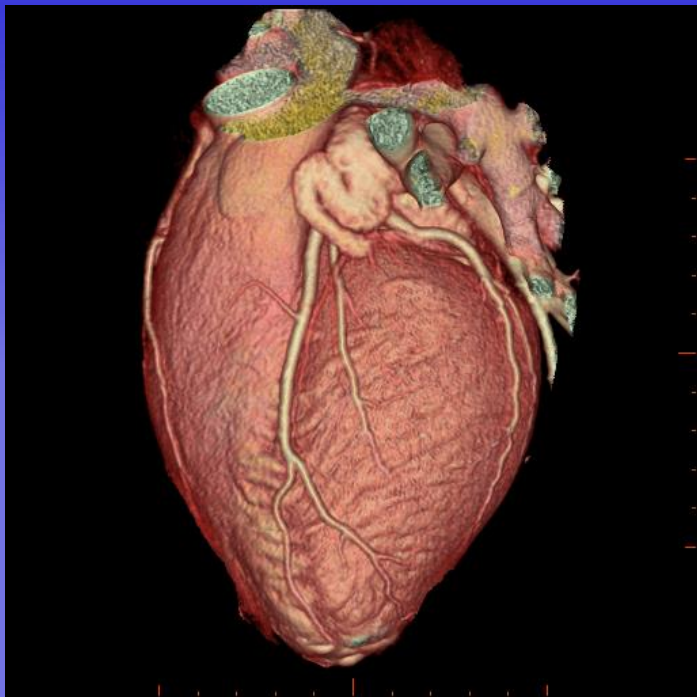
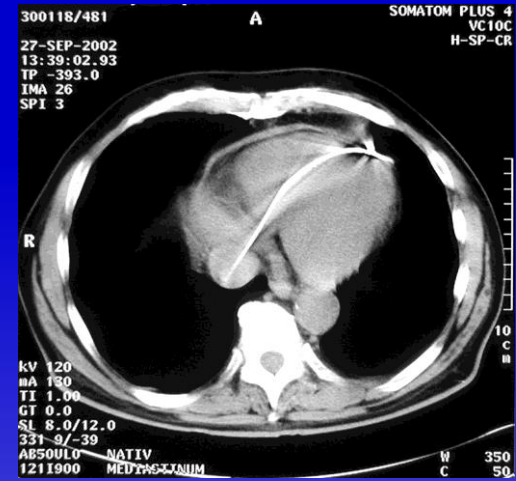
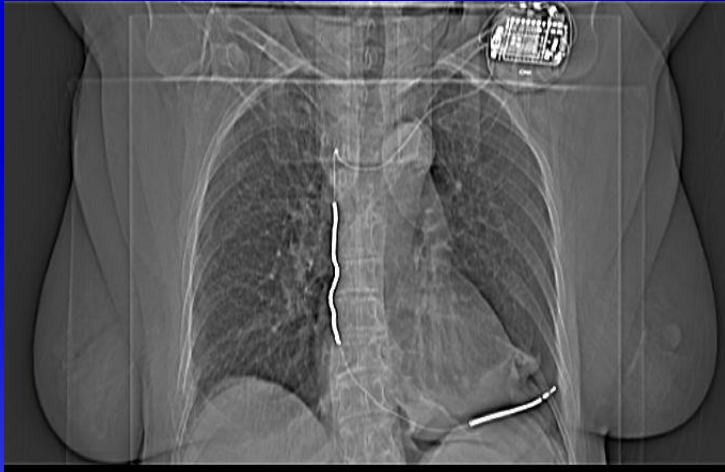


## Struktura srdeční stěny

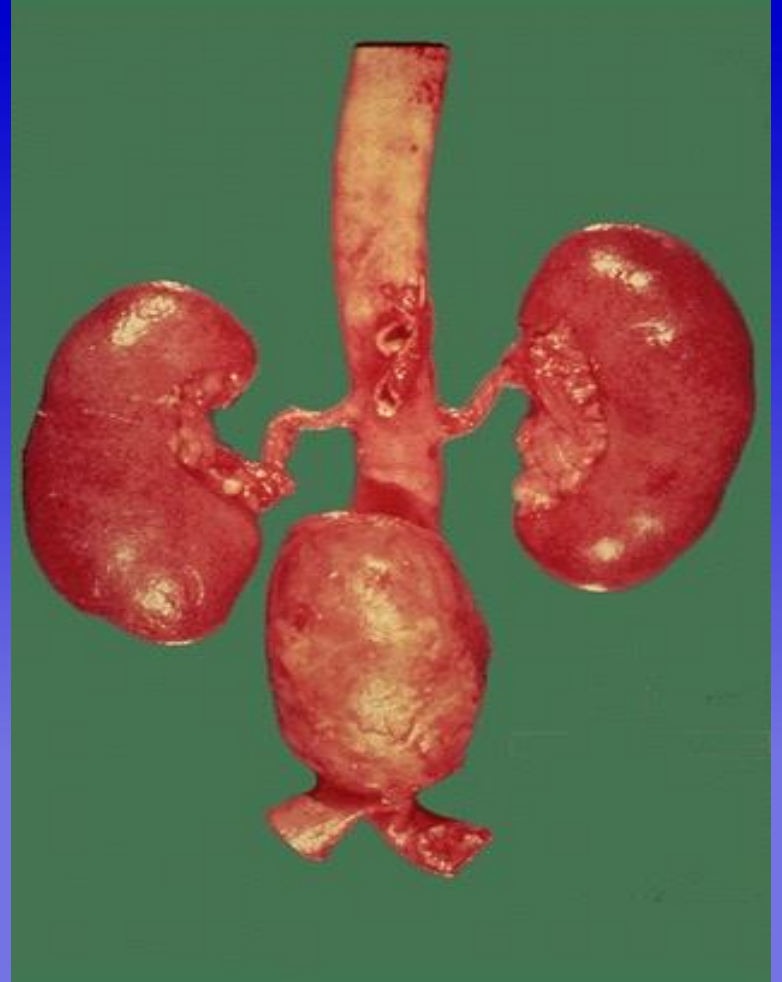
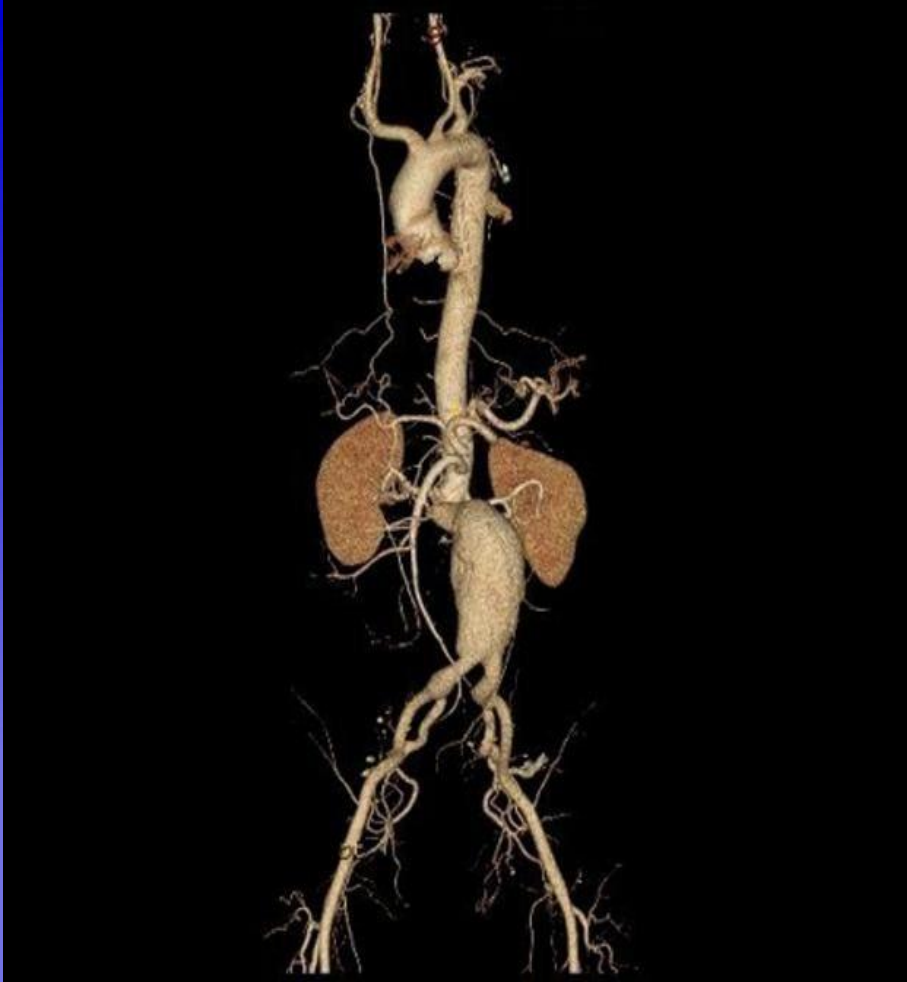
- Jizvy
- Myokarditida
- ARVC



# CT srdce

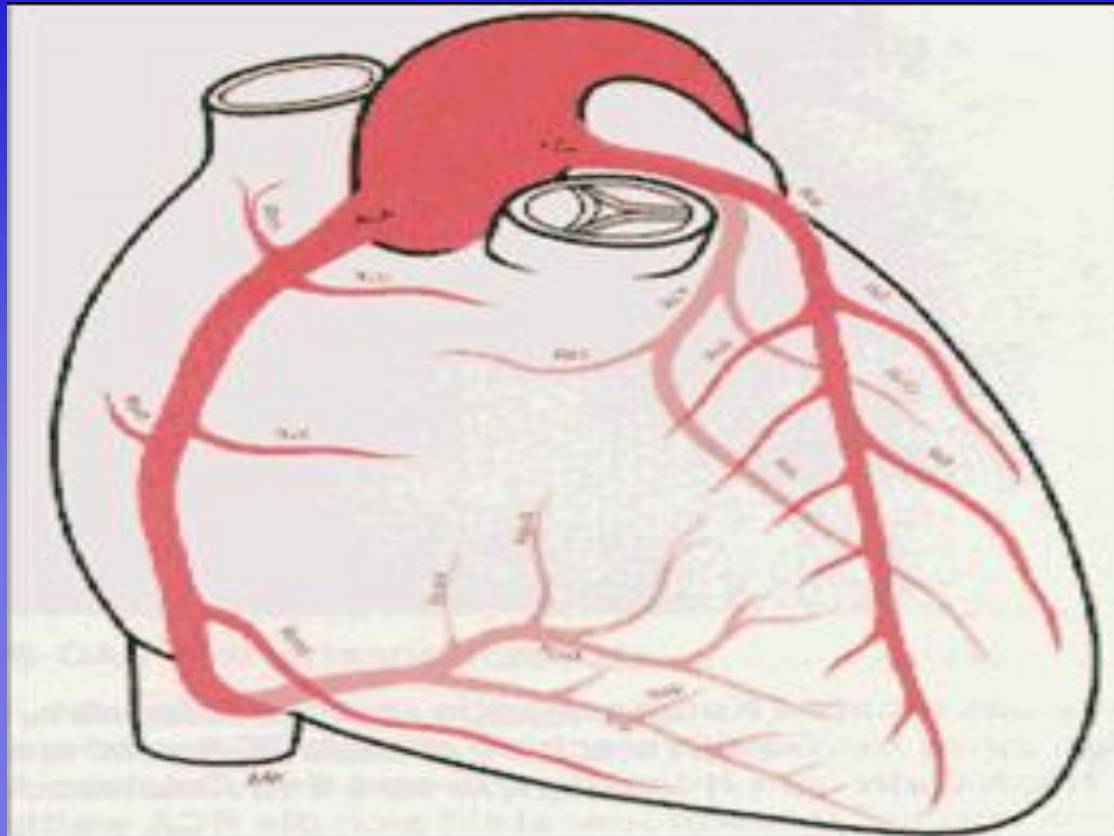


## CT AG aorty

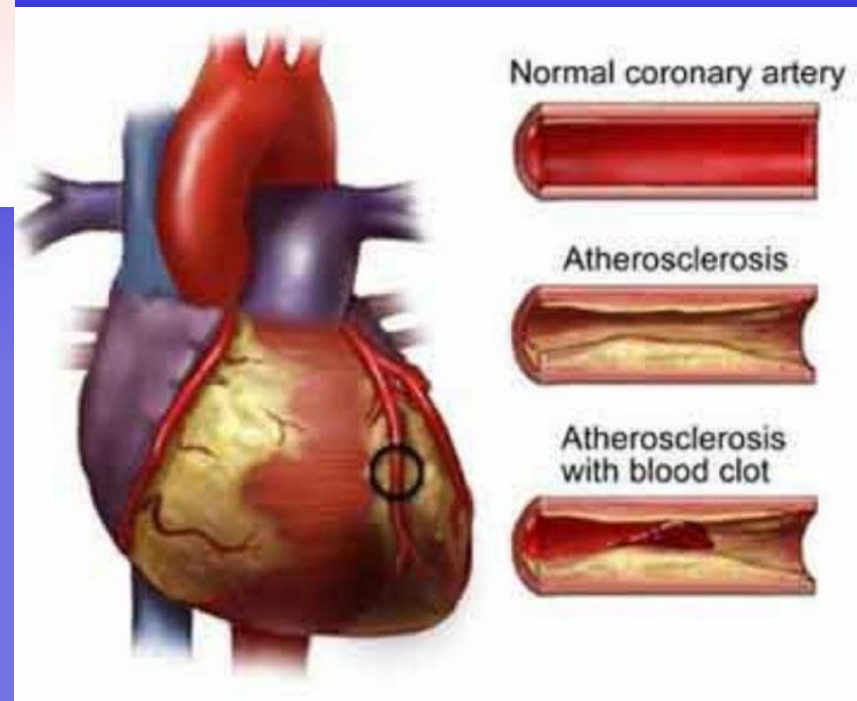
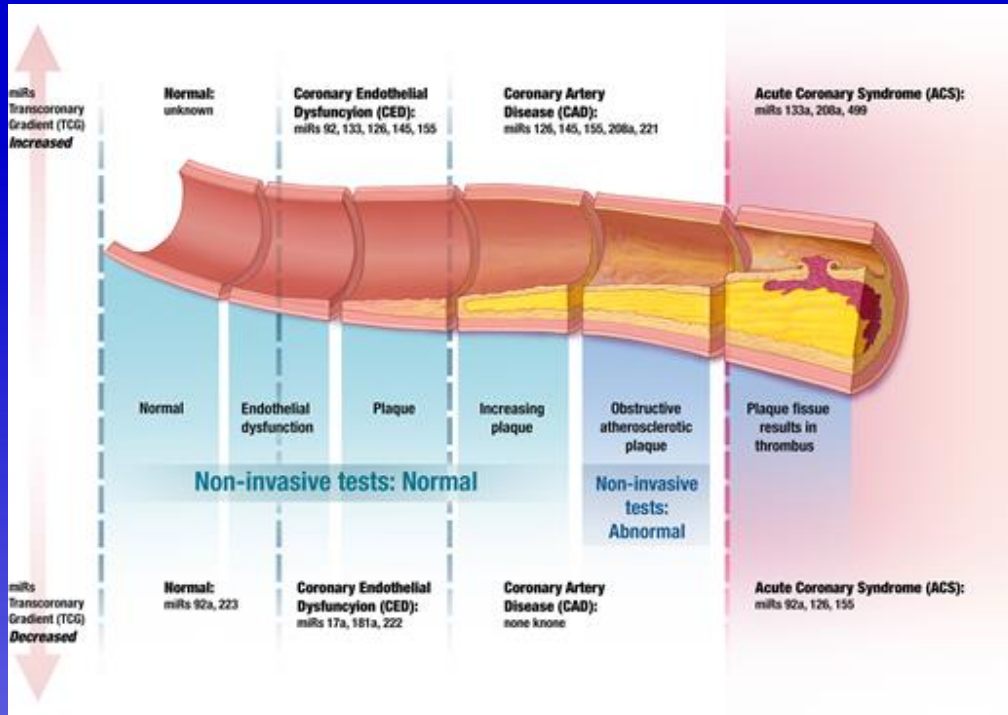


## Invazivní vyšetřování ICHS

- **Selektivní koronarografie** – přesné zobrazení věnčitých tepen a kvantifikace stenoz

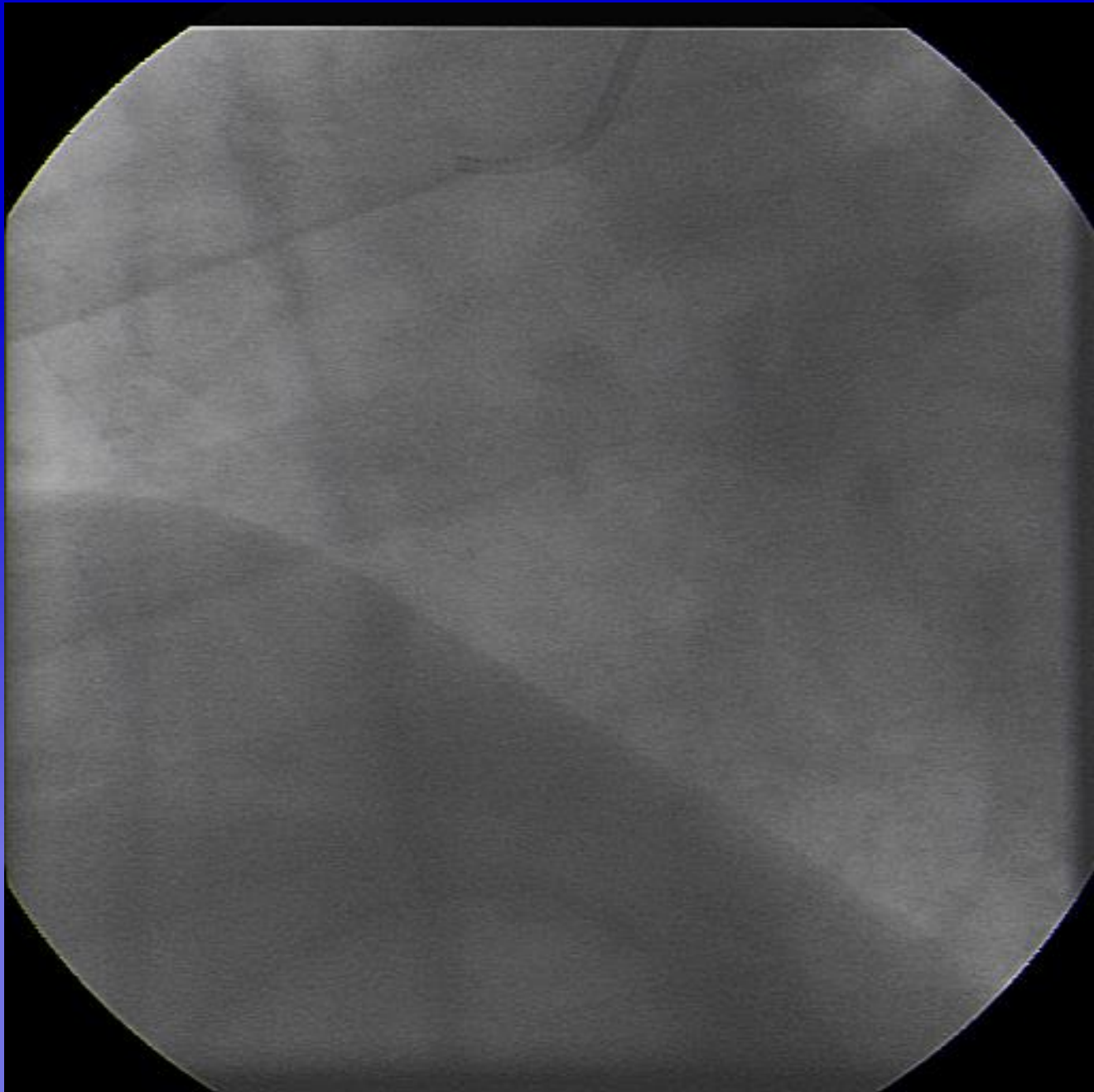


# ICHS

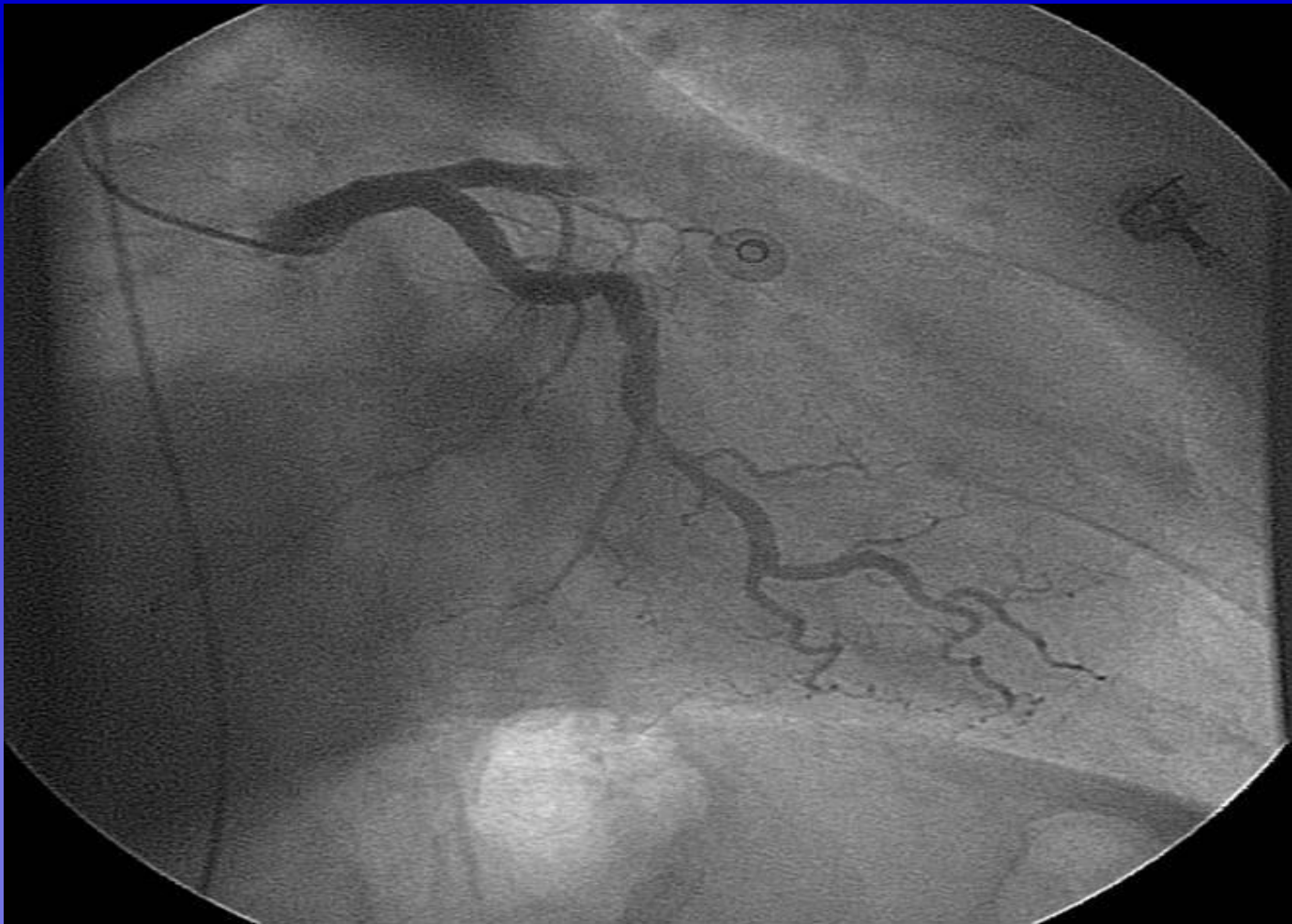


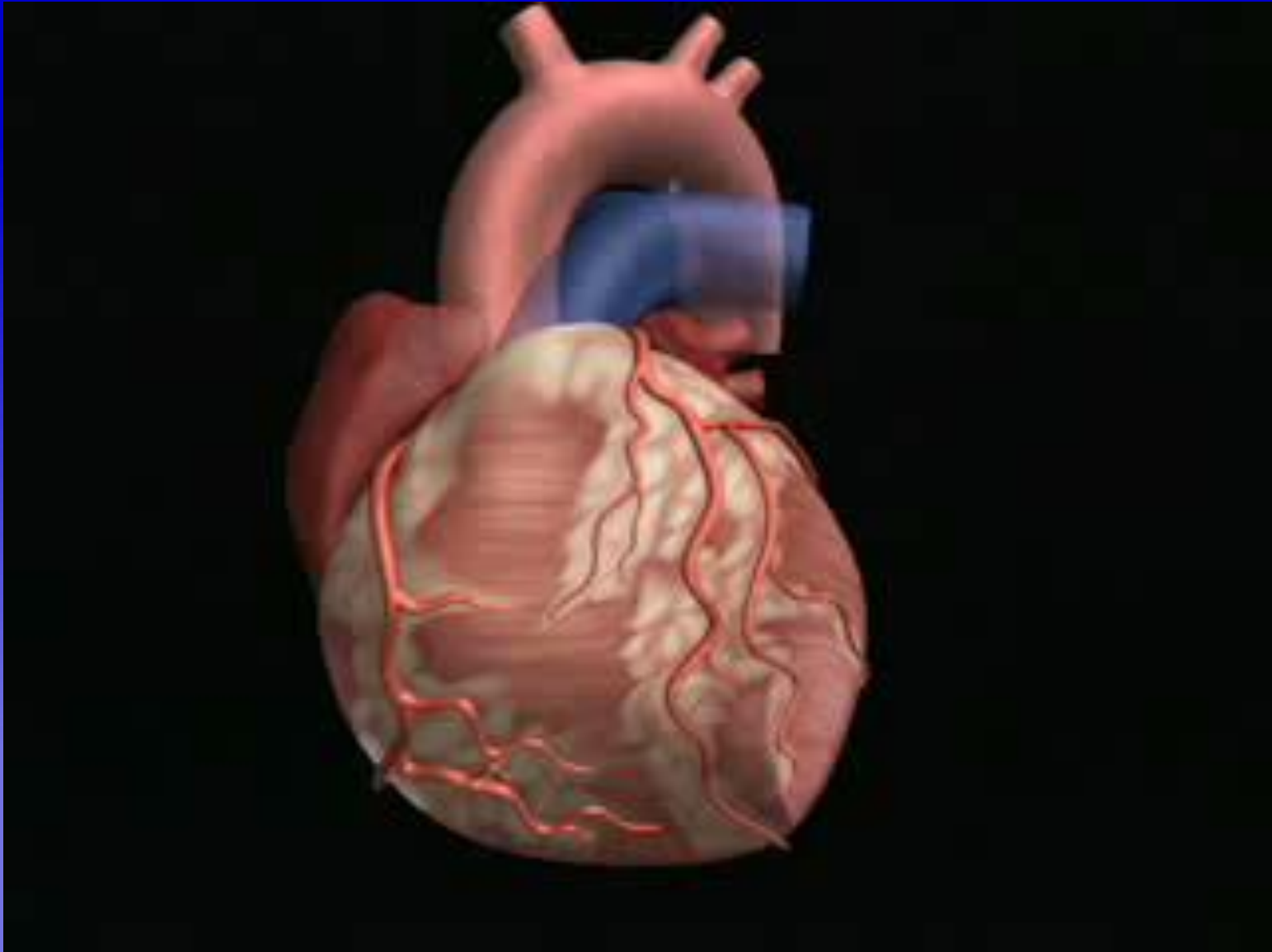




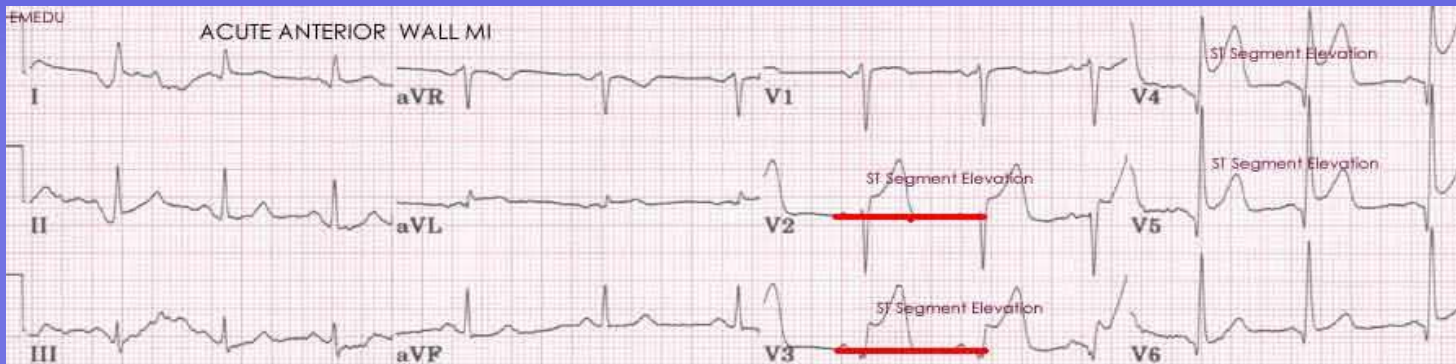
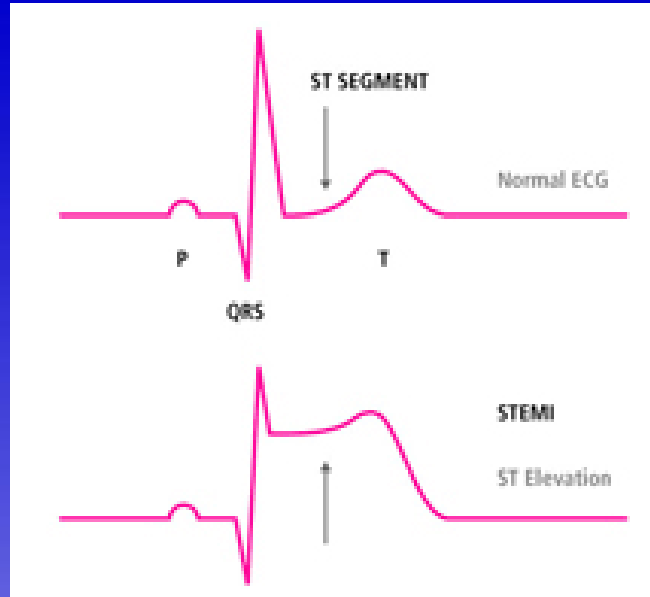


# Uzávěr RIA

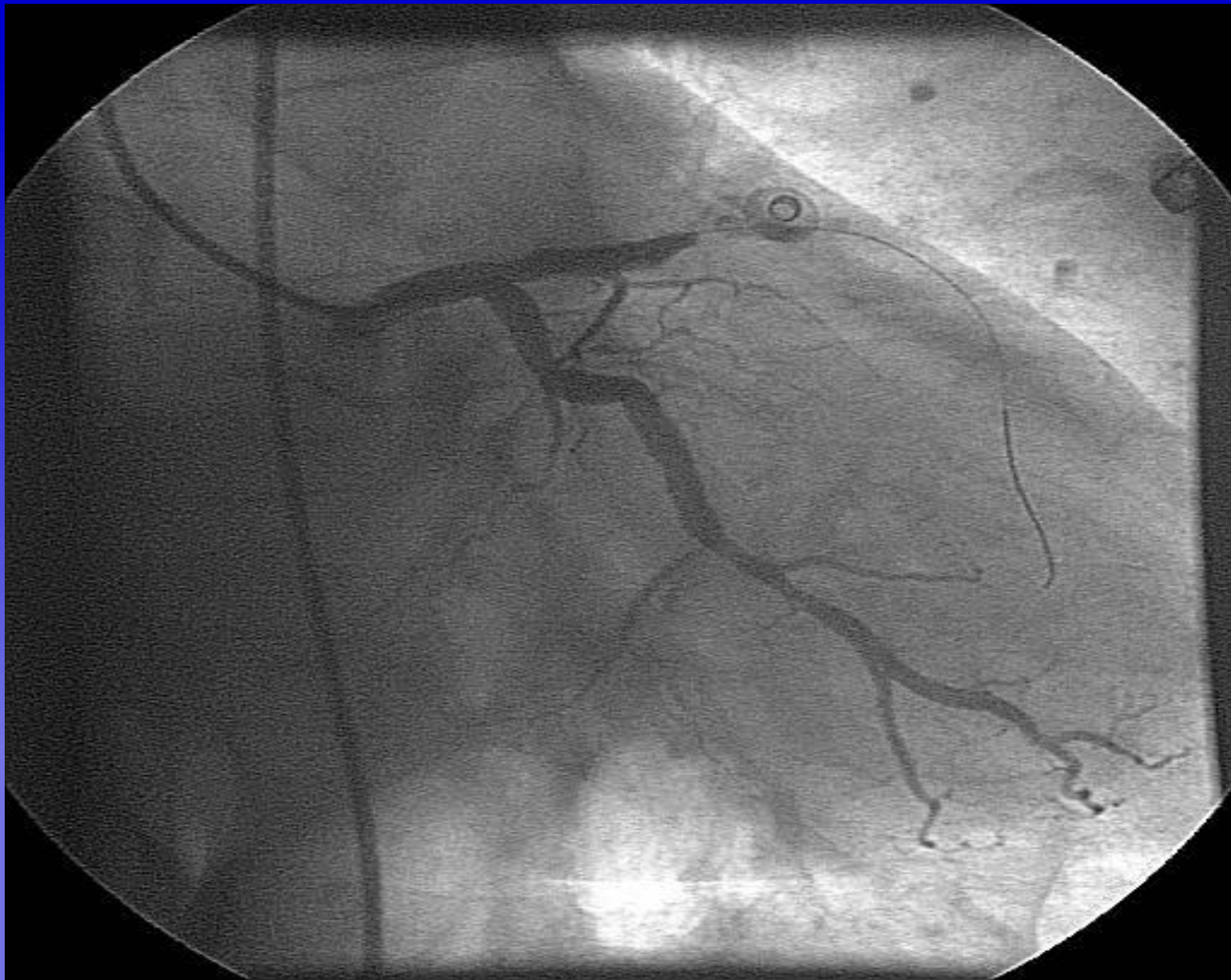




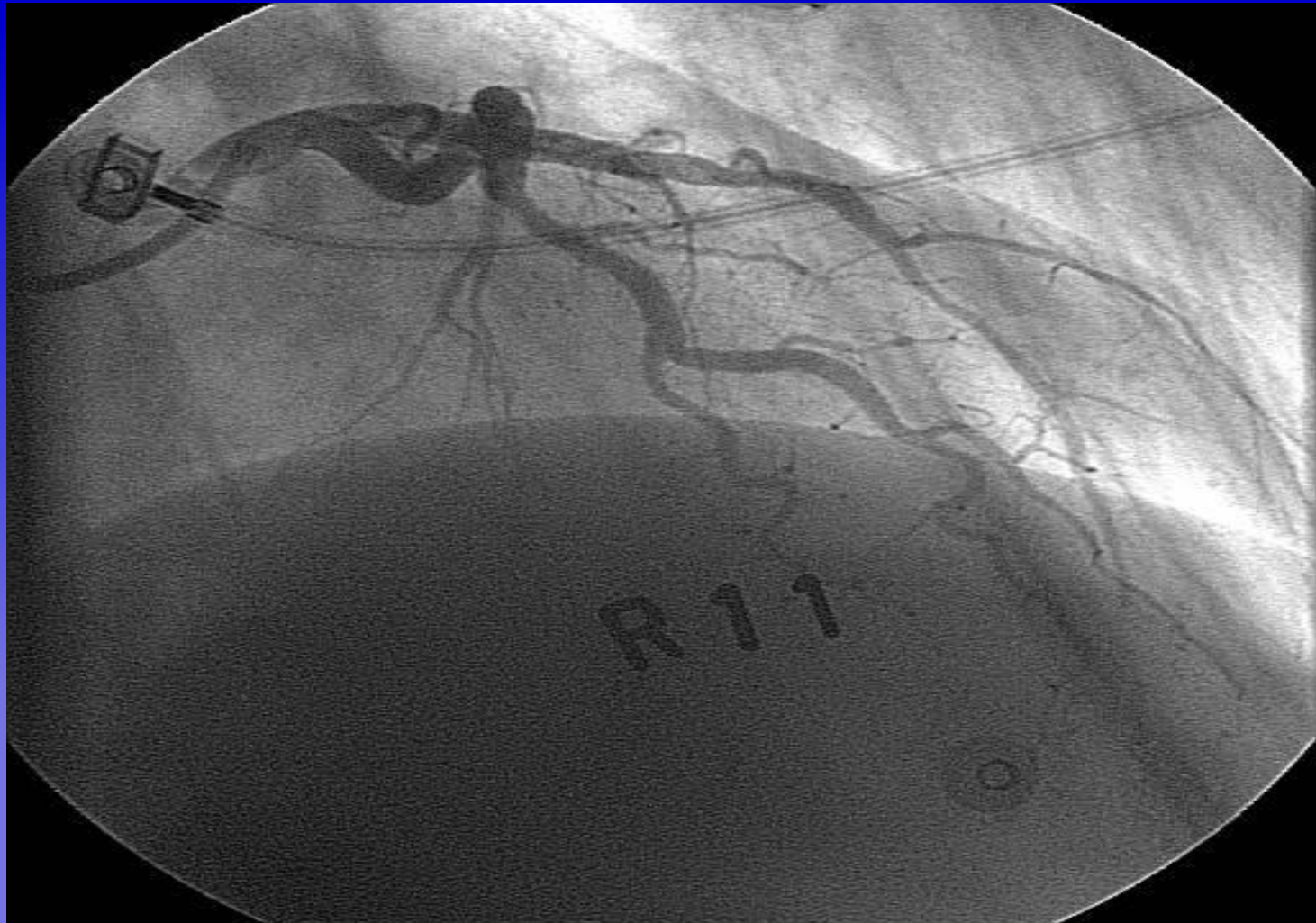
# AIM - STEMI



# PTCA drát



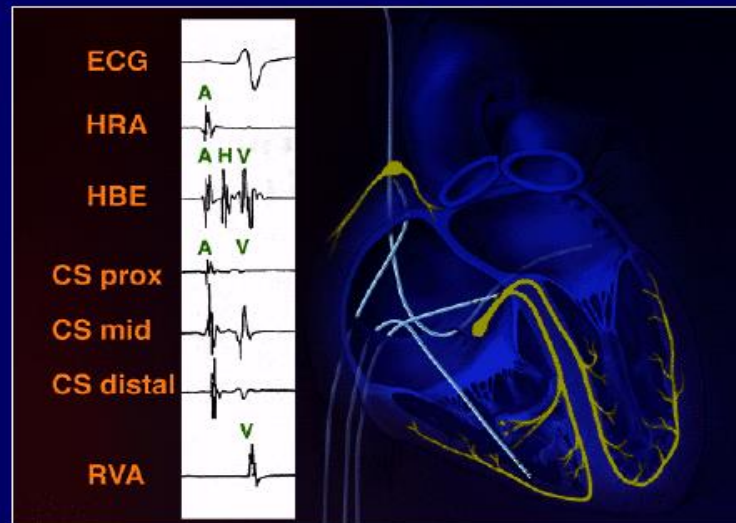
# Stav po PTCA



## Invazivní vyšetřování arytmií

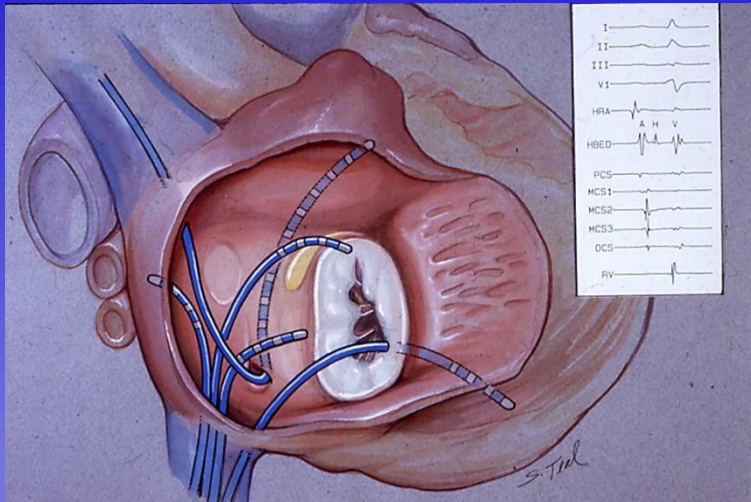
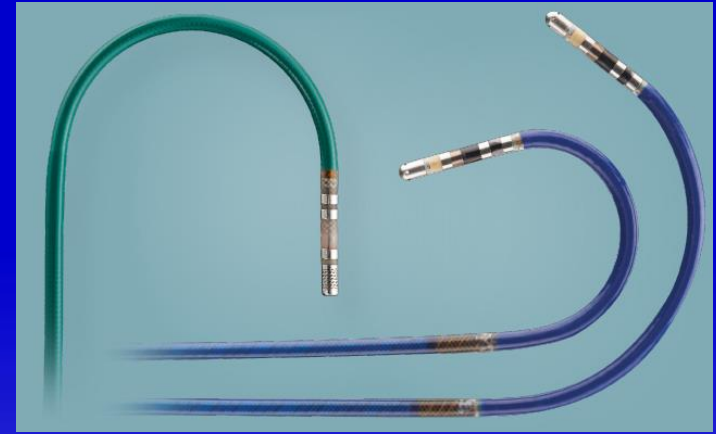
- **Elektrofyzilogie** – zmapování stavu a kapacity převodního systému. Indukce a klasifikace arytmií – následná RFA
- **Programovaná stimulace komor** – test inducibility amligní arytmií

### Catheter Placement

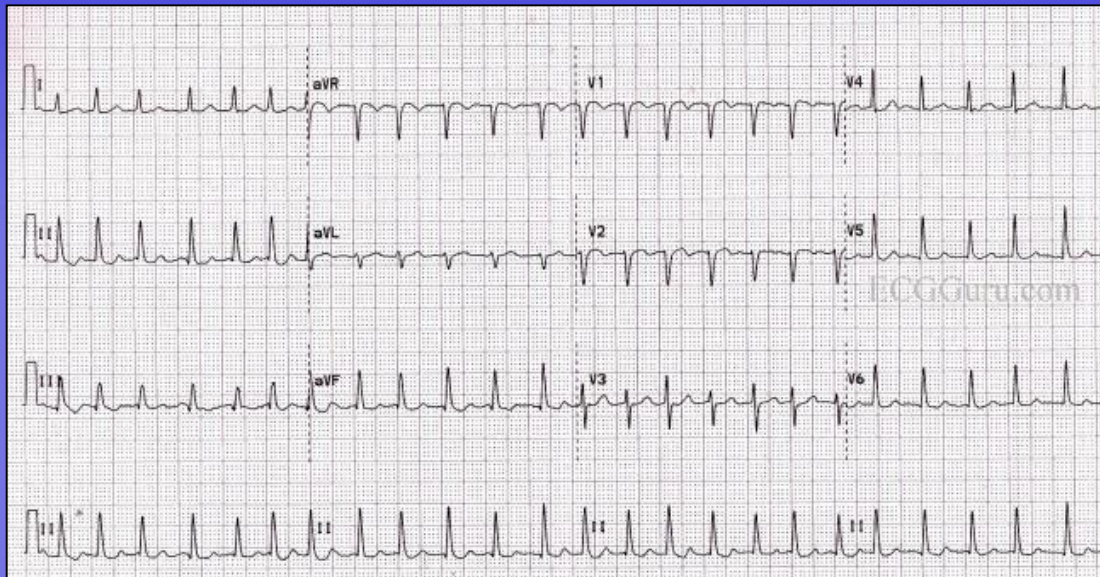
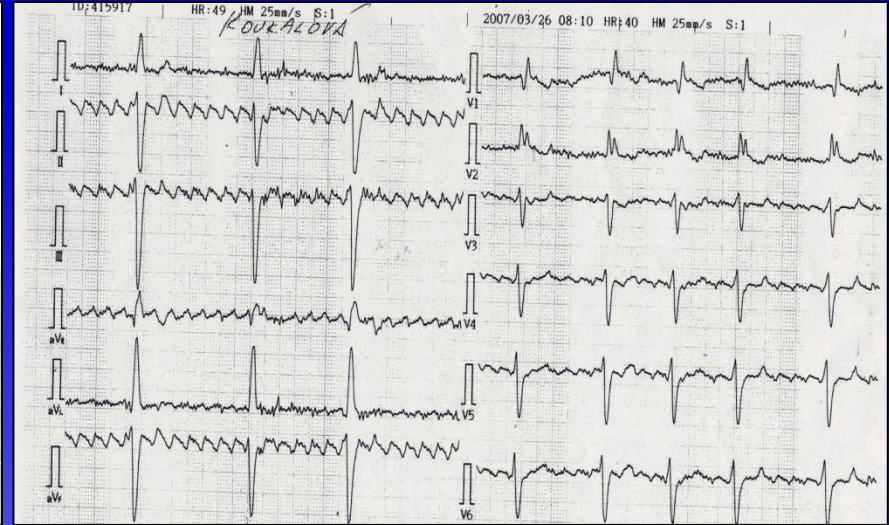
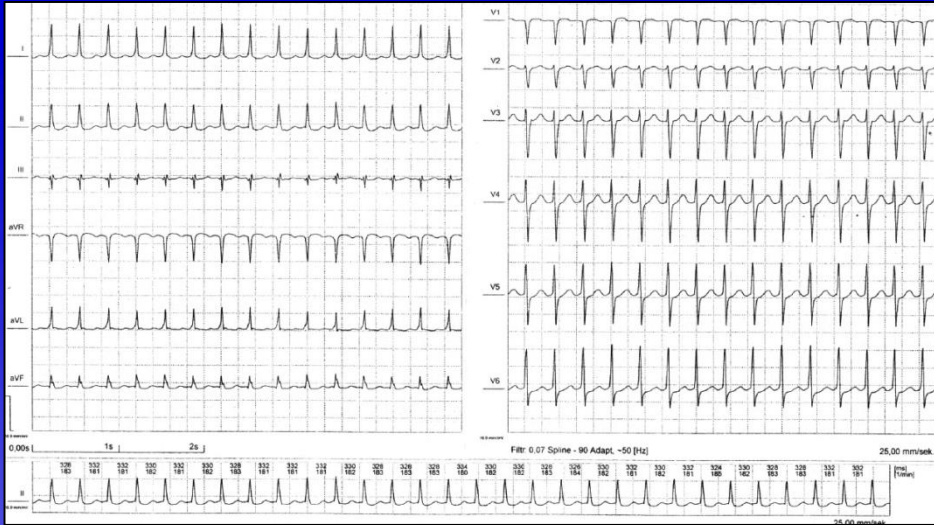




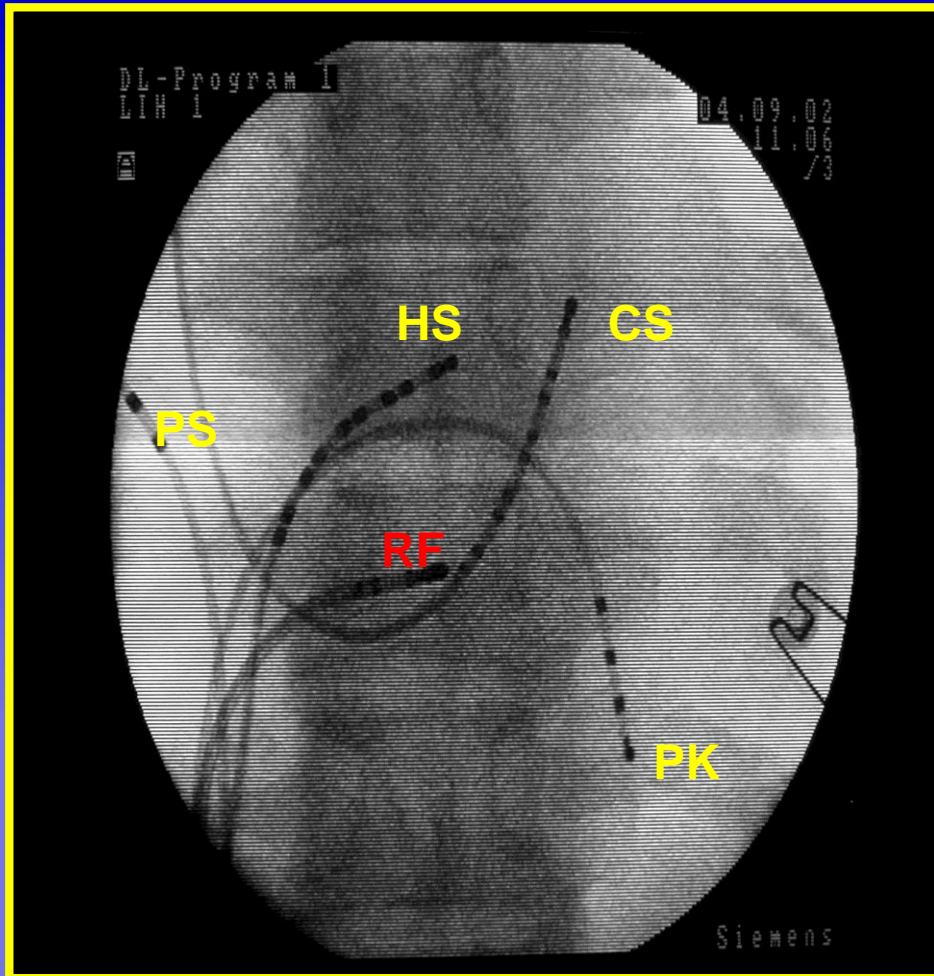
# IKEG



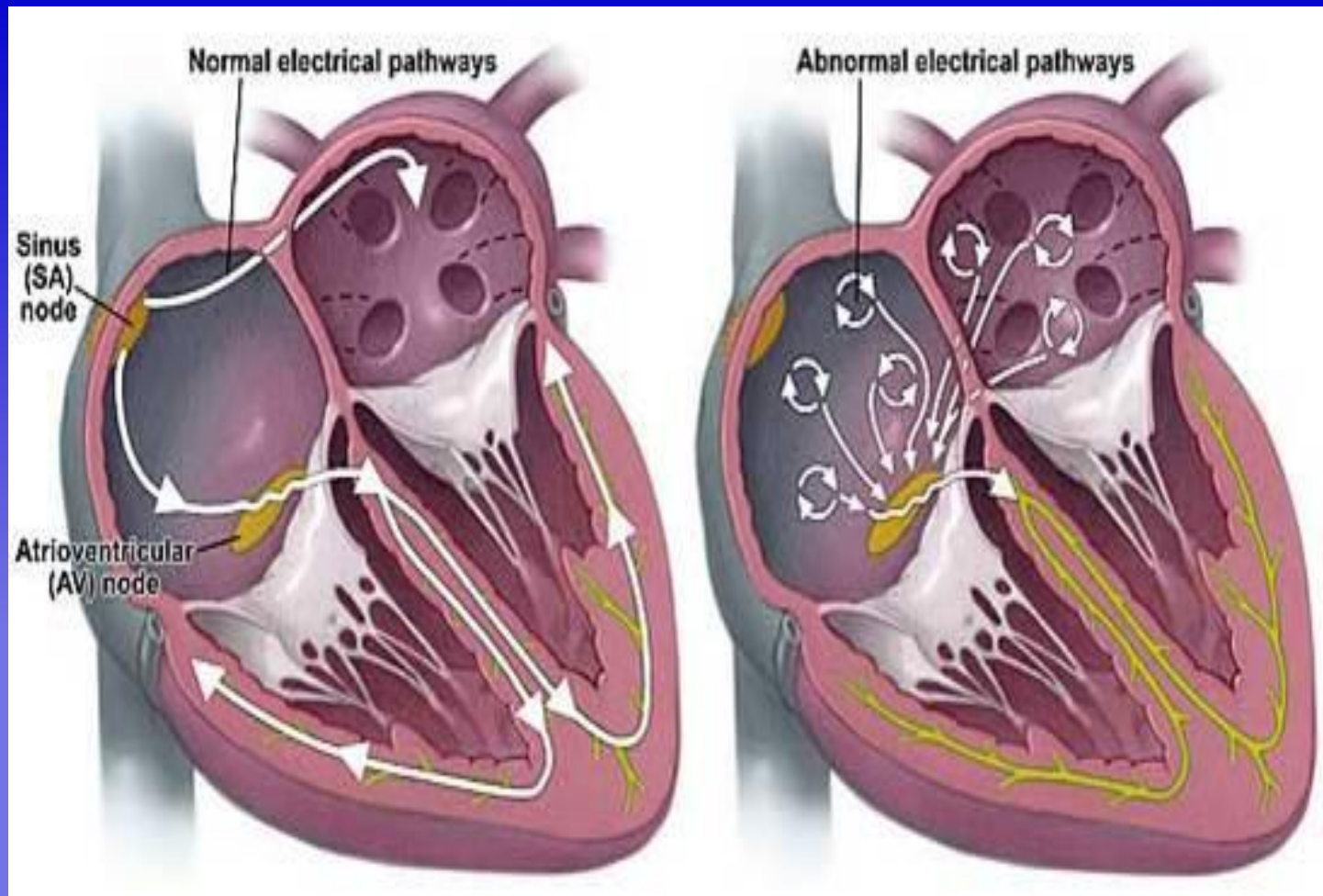
# Nejčastější SVT



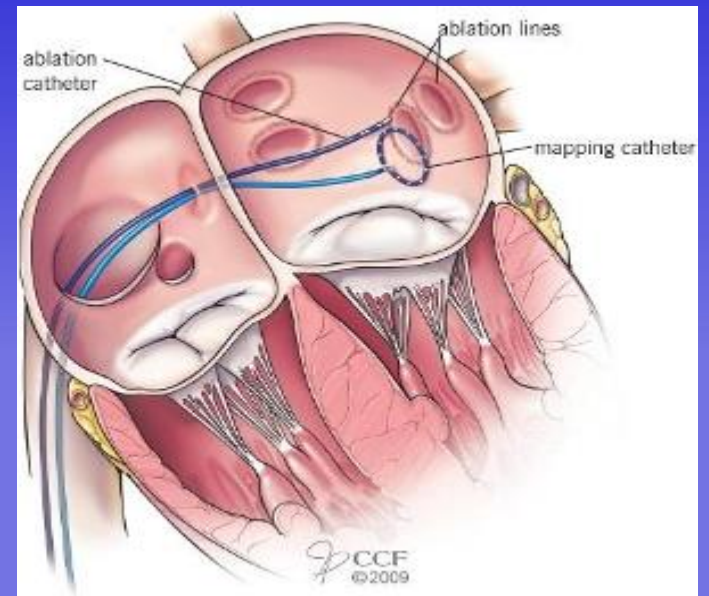
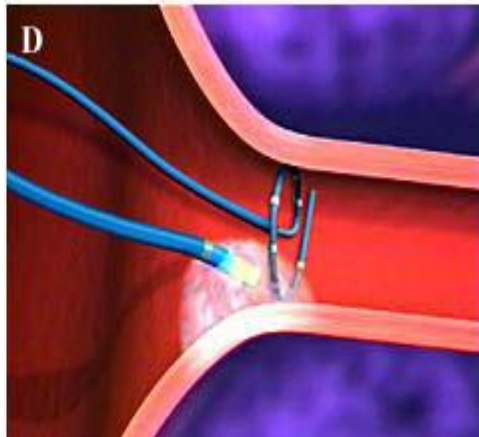
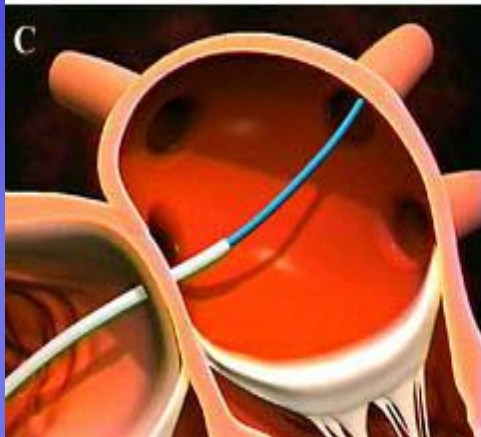
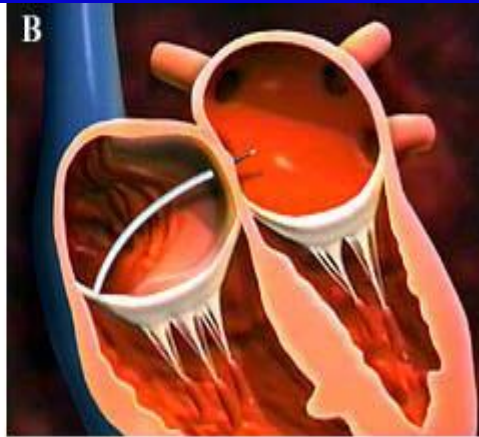
# Poloha katetrů při RFA AVNRT



# FISI

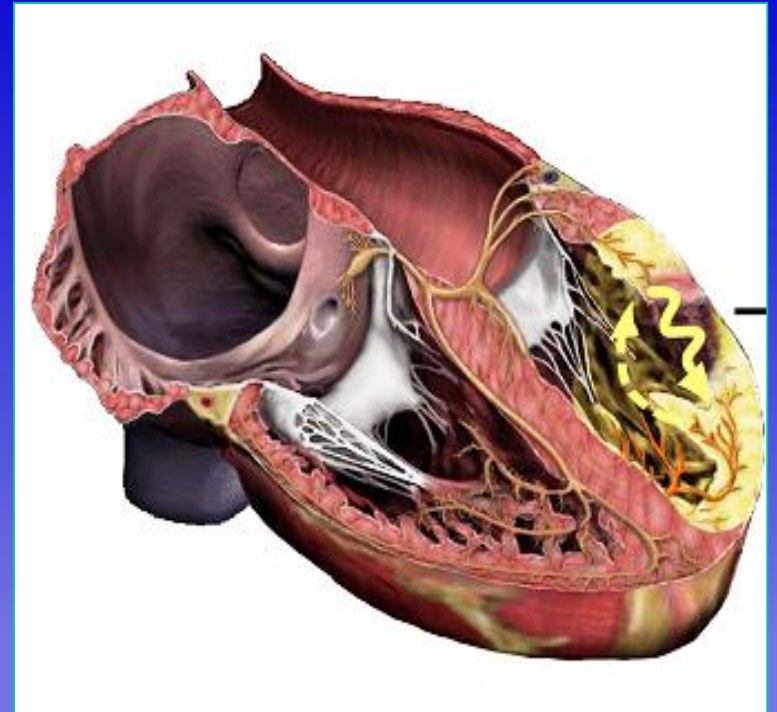
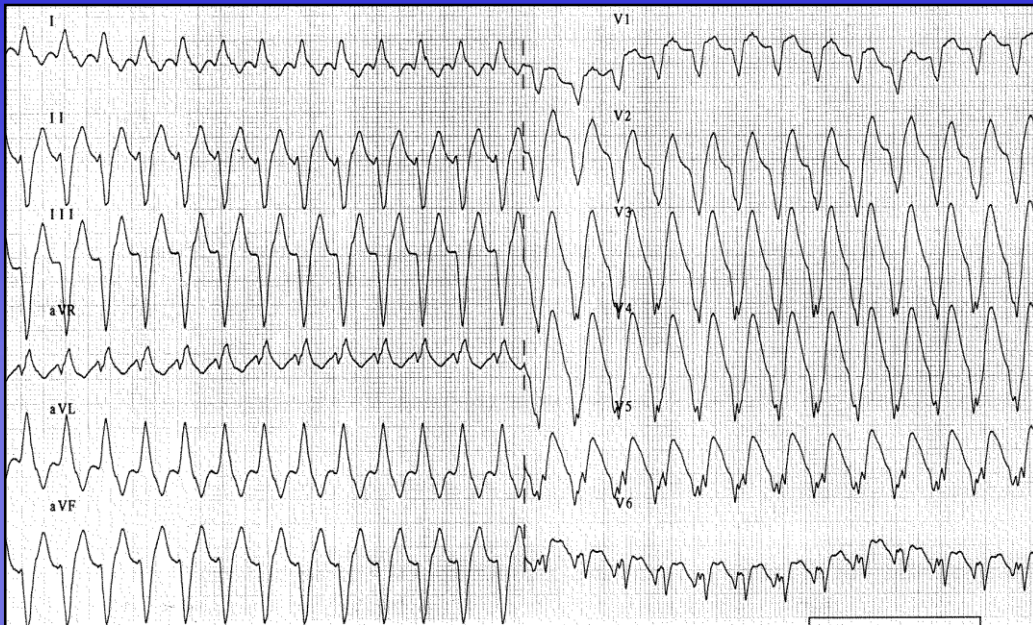


# RFA x Kryoablace



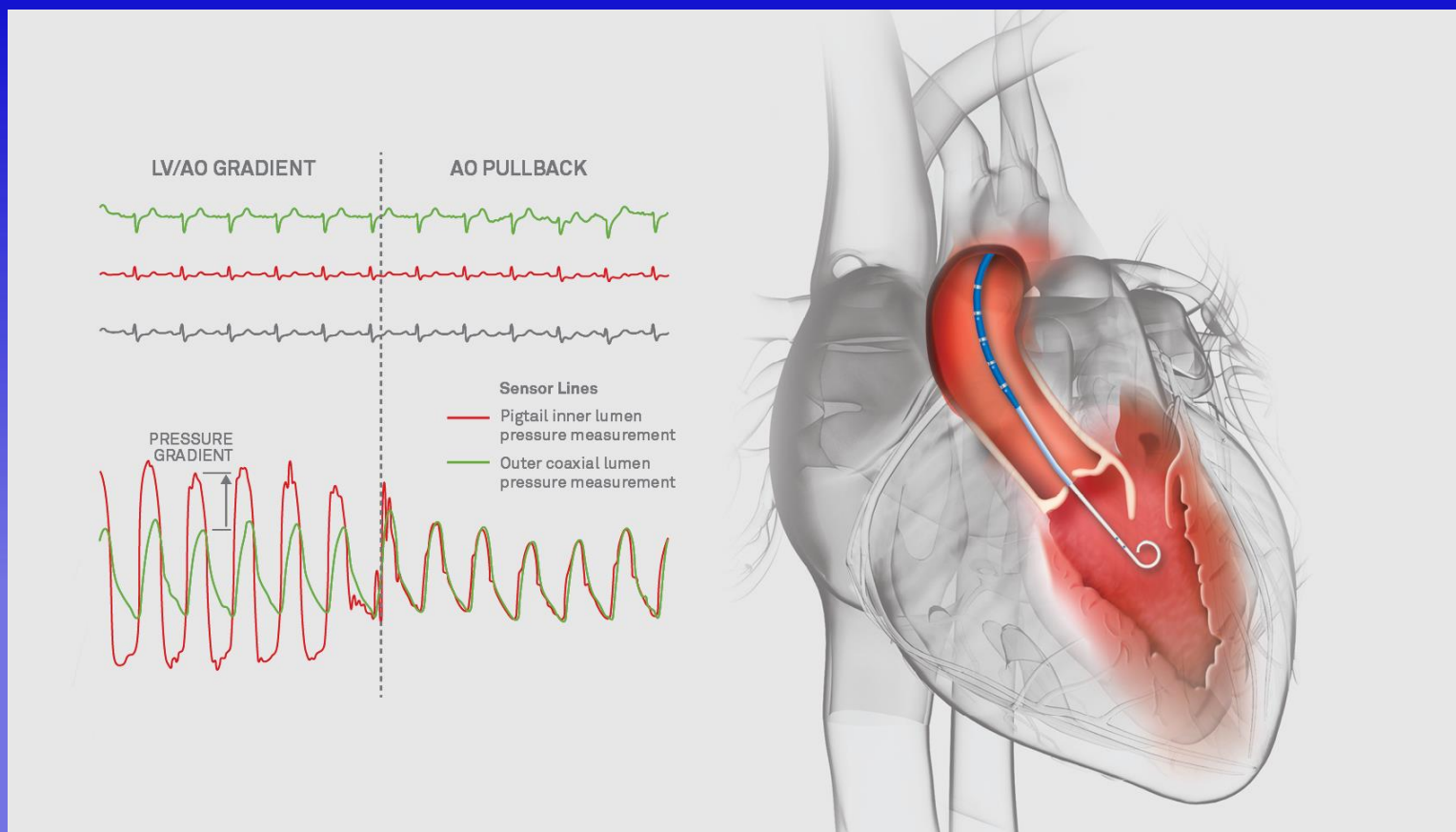
# KT u organického onemocnění srdce

Reentry – všude, kde jsou přítomny tkáně s různou rychlostí vedení

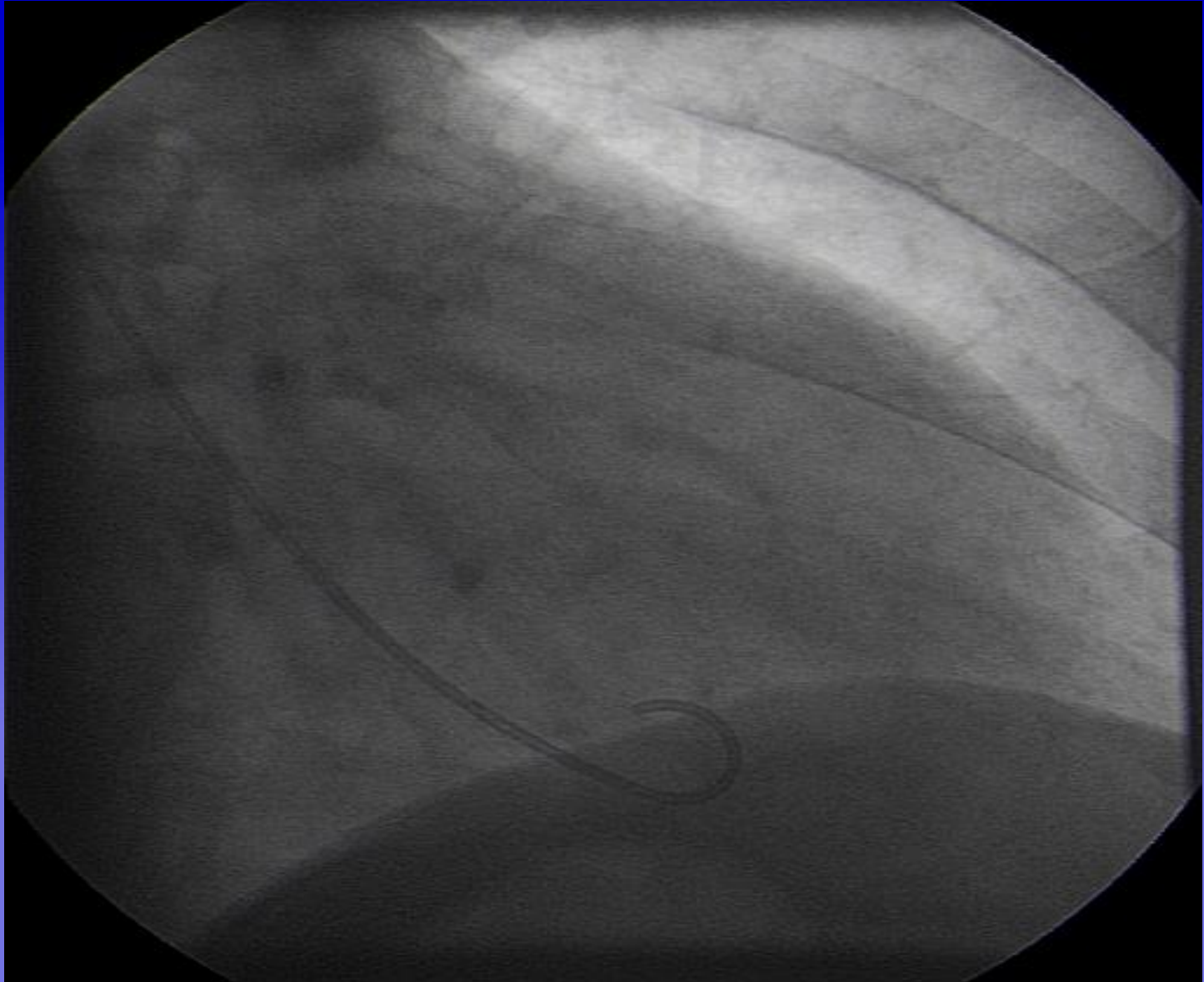


# Invazivní vyšetřování funkce srdečních komor

- **Ventrikulografie** – 2D zobrazení fce komory



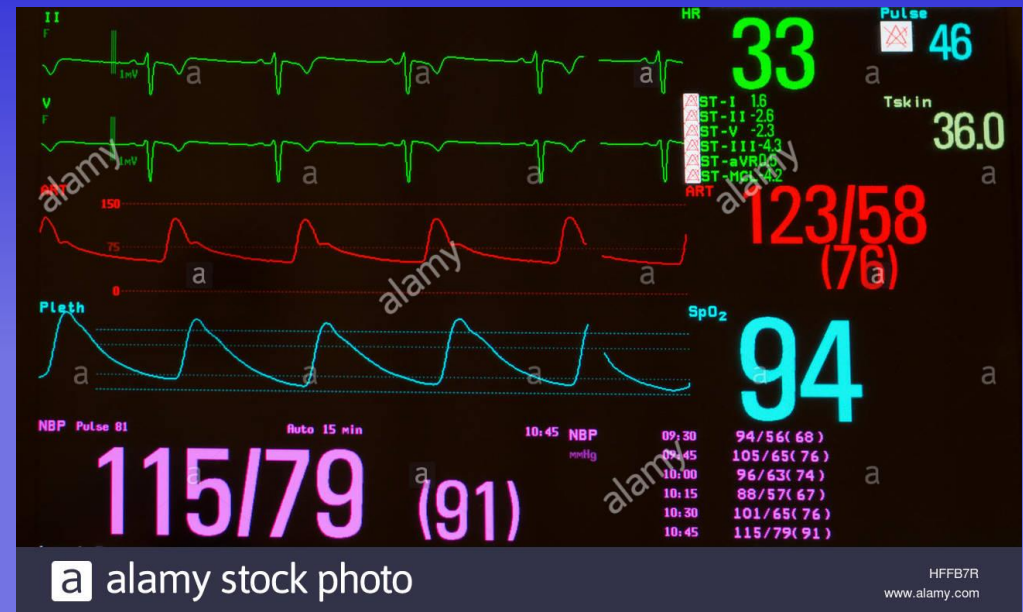
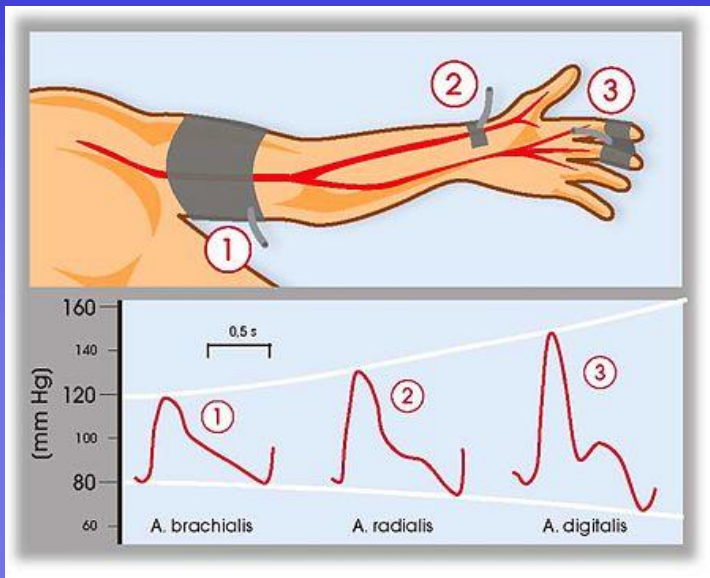
# RLVG



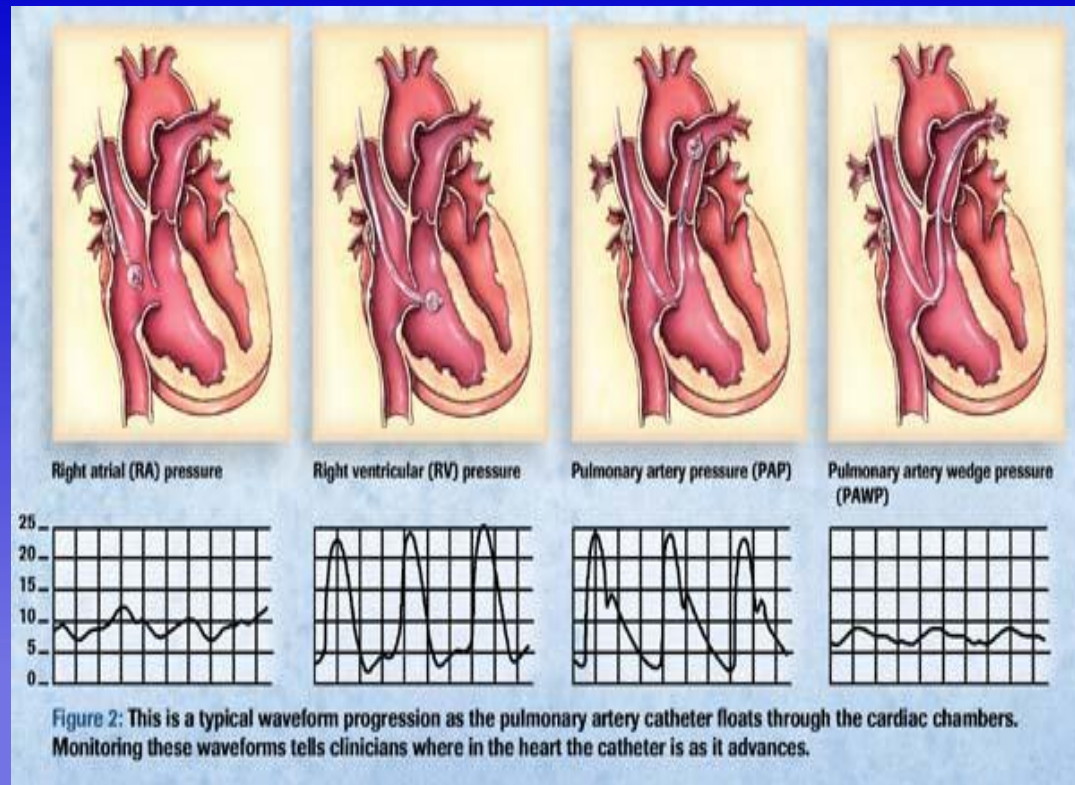
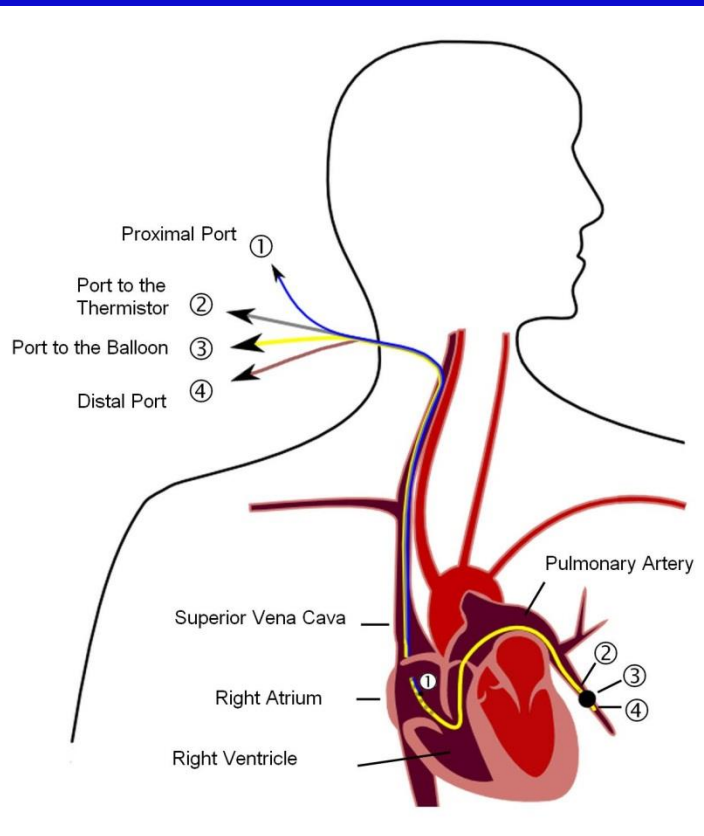


# Invazivní monitorace srdce

- **Swan-Ganz katetr** – měření tlaku v plicnici, měření srdečního výdeje, monitorace efektu terapie
- **Arteriální tlak** – beat to beat monitorace TK



# Invazivní monitorace - PCW, srdeční výdej



# Invazivní monitorace - PCW, srdeční výdej

