

## Cardiac trauma

- 1897. Rehn: succesful repair of a penetrating cardiac wound
- RV alone is involved in 35%, LV alone: 25%, 30%: more than one chamber
- Acute pericardial tamponade, exsanguinating hemorrhage
- Hypotension, tachycardia, or acute hemorrhagic shock
- Immediate thoracotomy or sternotomy, pericardiocentesis
- LV, RV: interrupted pledgeted mattress sutures of 3-0 polyester/polypropylene
- RA, LA: continous 4-0, 5-0 polypropylene
- Extensive laceration: CPB, patch-grafting of ventricular free wall

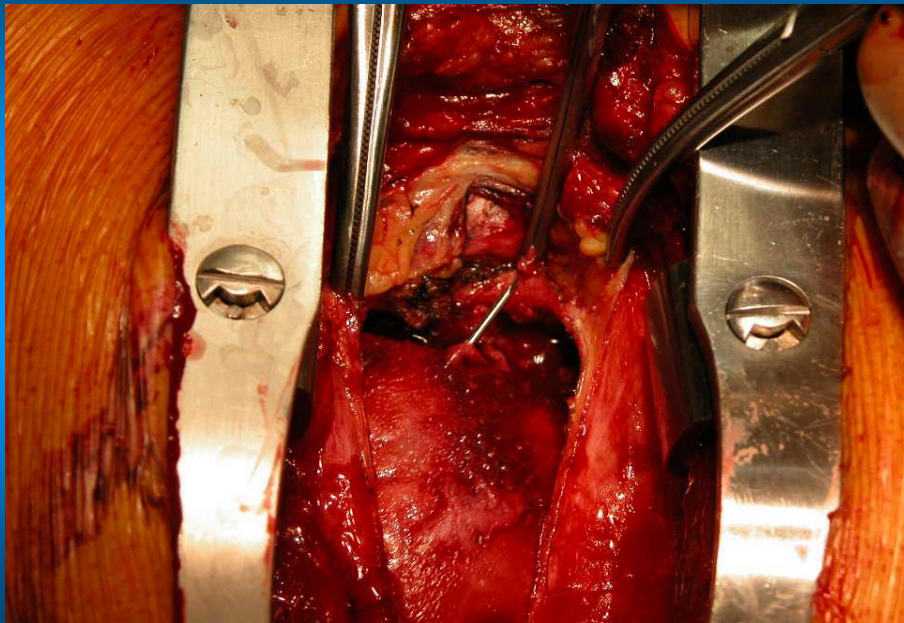
## Cardiac trauma

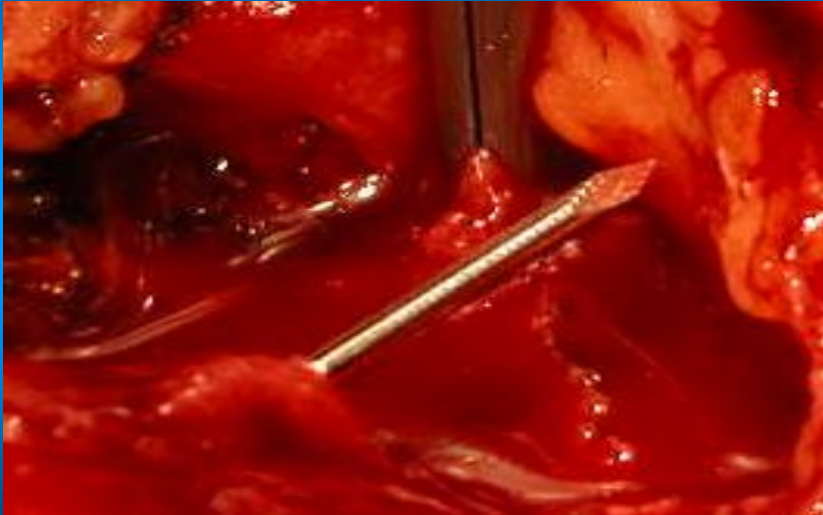
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## Trauma of the heart

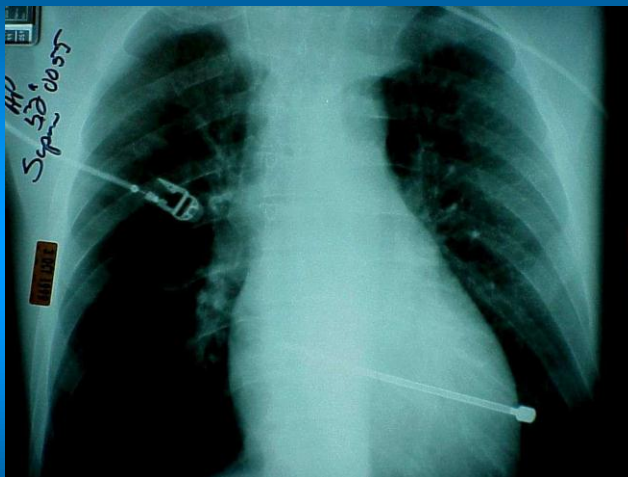
- Gunshot injury (survival after rapid therapy: 40%)
- Stab wound (survival with therapy: 80%)
- Closed injury: compression, contusio, deceleration: free wall/septum/valve rupture, coronary injury
- Iatrogenic injury: resuscitation, PCI, PM impl., migration of foreign bodies
- Consequence:
  - Haemorrhagic shock
  - Tamponade (immediately puncture or fenestration)
  - Pneumothorax, Haemothorax

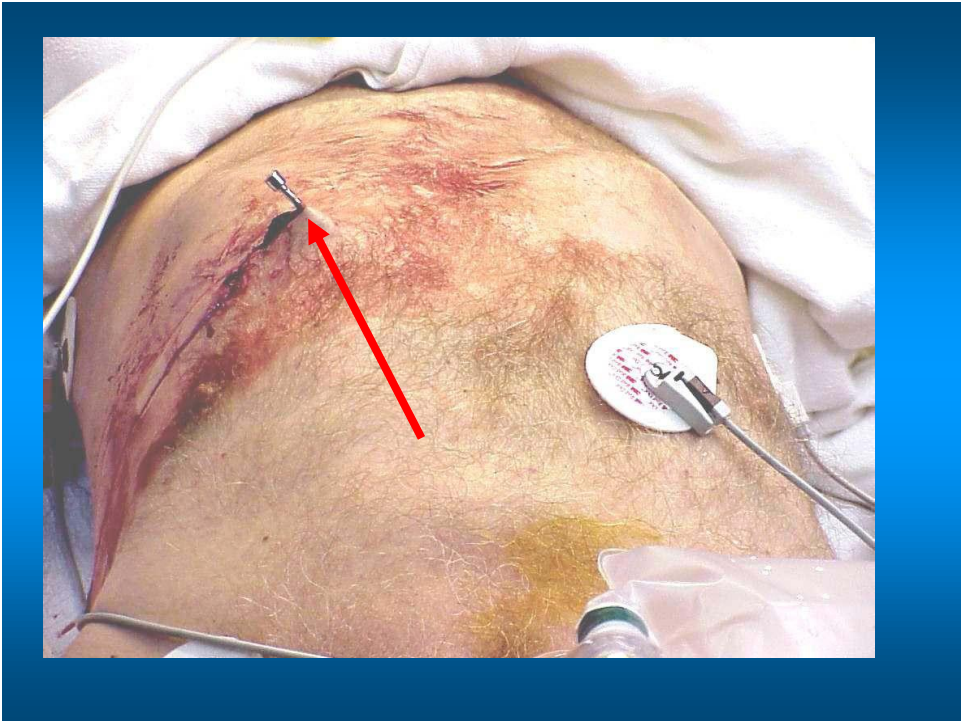
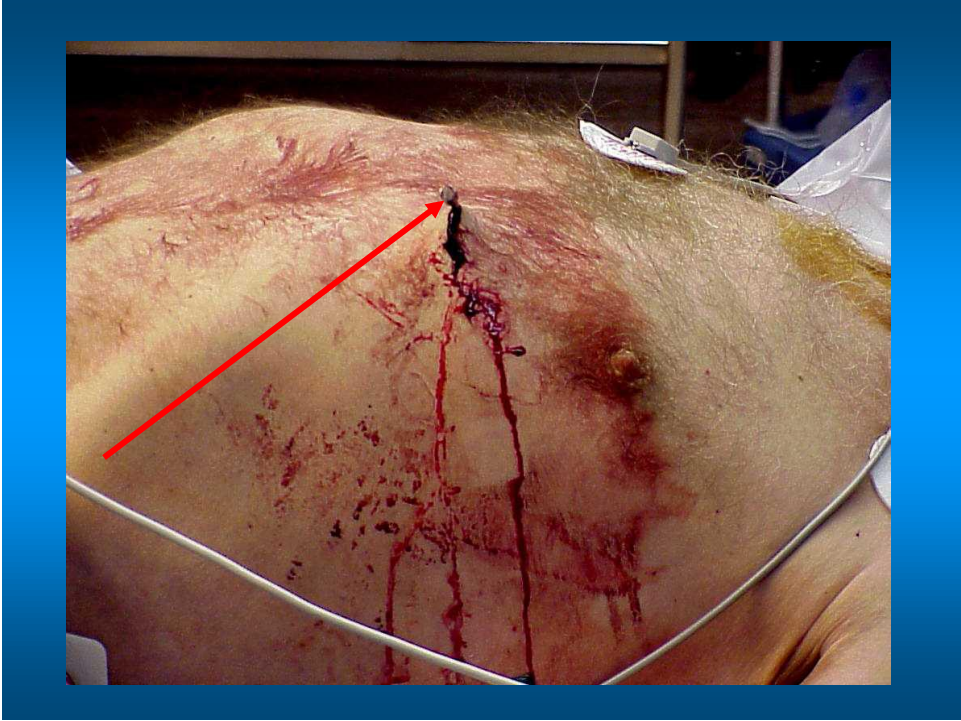
### Migration of foreign bodies (Kirschner wire –from the right shoulder joint)





### Autó antenna – RTG kép







## Knife in the right ventricle



## Cardiac tumor (70% benign)

- Myxoma
- Papillary fibroelastoma (benign, small, usually developed on a valve (aortic, mitral))
- Rhabdomyoma (hamartoma): in children, in the ventricles, commonly in multiple locations, sometimes spontaneous regression
- Lipoma
- Teratoma (generally benign, but occasionally malignant)
- Sarcoma (fibro-, angio-, rhabdomyo-, lympho-), poor prognosis, remove as completely as possible
- Secunder tumors

## Myxoma

- Most common primary cardiac tumor
- Polygonal myxoma cells in myxomatous stroma, covered by endothelium, arise from multipotential mesenchymal cells
- Benign, but can produce emboli
- In any chambers, predilection for LA (80-90%)
- Arise from the atrial septum

## Myxoma

- Pathophysiology:
  - obstruction of flow (syncope, sudden death),
  - deformation of valve (mimic stenosis or regurgitation),
  - embolization (stroke)
- Systemic emboli occur in 30-40% (50% to the CNS)
- Constitutional manifestations: in 30%, fever, weight loss, Raynaud phenomenon, myalgia, arthralgia

## Myxoma

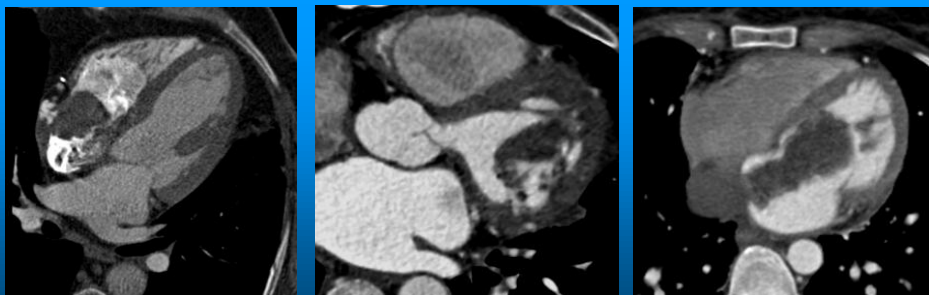
- Nonfamilial (sporadic)
  - Middle-aged women
  - Tumors are single and in the LA (75%)
  - Rarely recur
- Familial (5%)
  - Young men, dominant inheritance
  - Less common in the LA (62%)
  - More often multiple (33%)
  - In 20% associated with other conditions (Cushing-sy, Sertoli cell tu., etc)
  - Strong tendency to recur





## PTE Szívgyógyászati Klinika

- 1999 – 2013 nov.: **21 myxoma**
- Surgical mortality: 0,
- Isolated myxoma operation: 15
- Myxoma + CABG (x2-5): 5
- Myxoma + ASD: 1
- Juvenile: 1 (34 years old)
- Familial: 0
- Multilocalization: 0
- Recurrence: 0 (follow-up: 1-13 years)



Képanyag: Dr. Várady Edit, PTE Radiológiai Klinika

## Symptoms

- Chest pain: 4
- Dyspnoe: 5 (mimic mitral stenosis)
- Stroke: 5 (embolisation)
- Accidental / asymptomatic: 5
- Acute coronary syndrome (CABG): 1

## Patient data

Mean age: 57.6 year (34 – 72)

Female: 13 (61.9%)

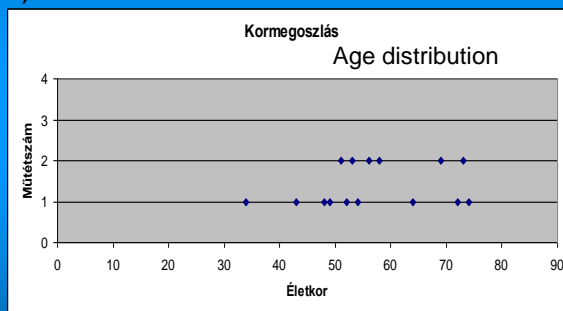
Male: 8 (38.1%)

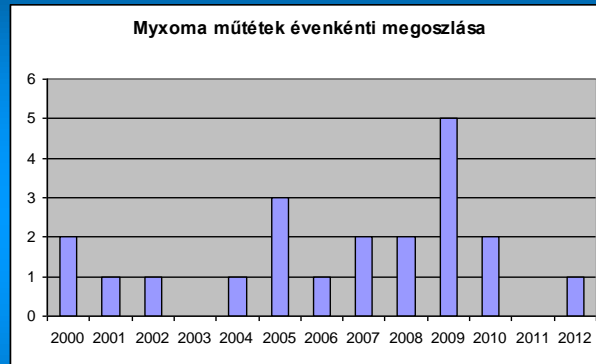
Smoking: 5

NIDDM: 5

IDDM: 2

BMI : 28





- Echocardiography
  - :
    - Size of Myxomas in cm:
 

1.2x1.5	3x6.5
1.7x2.3	3.5x5.4
2x1.7	3.5x5.4
2x2.5	4.3x5.8
2x3	4.8x4
2.5x2.5	4.9x5.9
2.5x5	5x3
3x3	7x3
3.2x4.6	8x3

## Pericardial disease

- Chronic constrictive pericarditis
- Acute cardiac tamponade
- Chronic effusive pericarditis

## Chronic constrictive pericarditis

- Involves both fibrous and serous layers
- Pericardial thickening
- Compression, constriction of the ventricles
- Ventricular filling is impaired, stroke volume reduced, venous pressure elevated
- Etiology: acute pericarditis, radiation, malignant diseases, rheumatoid disease, previous cardiac surgery
- End-diastolic pressure elevated and equal in RA, pulmonary artery and LA
- Dyspnoea, neck vein distention, hepatomegaly, ascites
- Pericardial calcification
- Remove the thickened, calcified pericardium

## Acute cardiac tamponade

- Heart is small and quiet, venous pressure elevated, systemic arterial blood pressure depressed (Beck triad)
- Pericardiocentesis

## Chronic effusive pericarditis

- Etiology: malignant disease, long-term dialysis, trauma, autoimmune disease
- Accumulation of pericardial fluid (inflammatory reaction of the pericardium)
- Elevation of jugular venous pulse
- echo

- Medical treatment: diuretics, non-steroids
- Indication for op: acute tamponade or when symptoms persist despite 7-10 days of intensive medical treatment
- Pericardiocentesis (subxiphoid)
- Pericardial window – left anterolateral thoracotomy
- Partial or complete pericardiectomy