



*Modified by Lynn Alhamaideh*

# **CVS TUMORS**

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# Vascular Tumors

They all originate from endothelial cells.

according to their morphology and clinical behavior :-

①

②

③

## benign tumors

Contain vascular channels  
Lined by normal-appearing endothelial cells

most common  
No metastasis  
Benign behavior

e.g. hemangioma

## Borderline tumors

intermediate between benign and malignant behavior

Rare  
No metastasis *So it's not malignant*  
Locally aggressive *so it's not benign*

e.g. kaposi sarcoma

## Malignant tumors

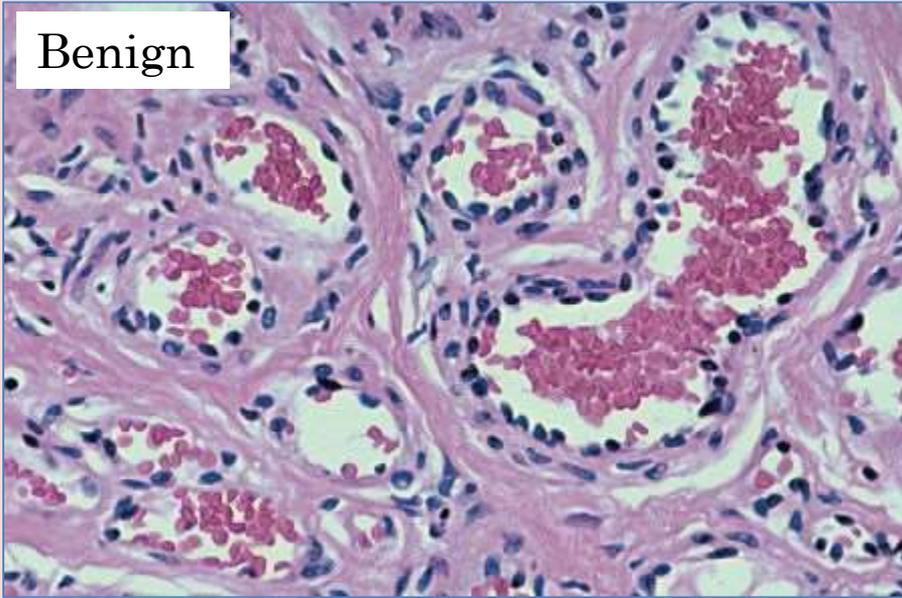
More cellular  
Cytologic atypia  
Proliferative  
Do not form well-organized vessels

rare  
metastasis  
*aggressive behavior*

e.g. angiosarcoma



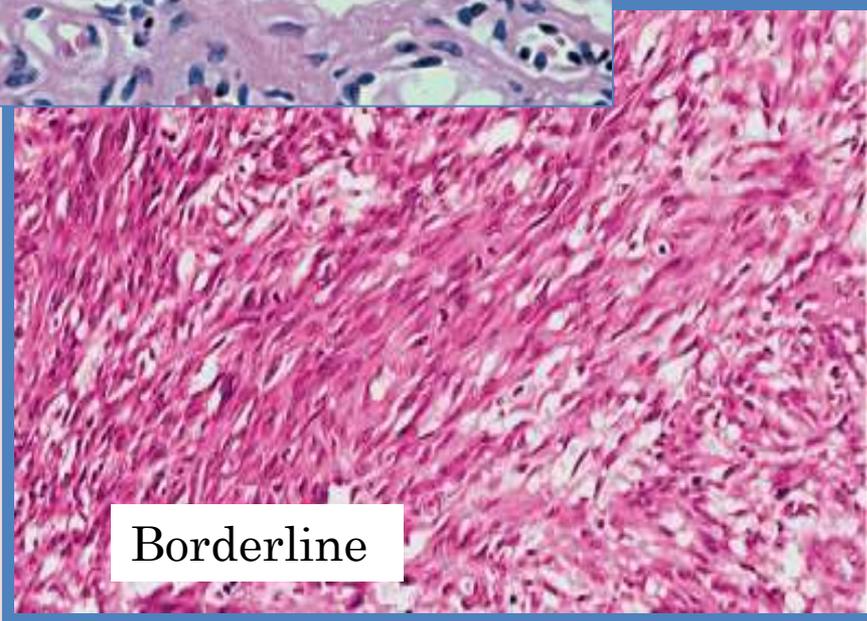
Benign



→ looks exactly similar as normal endothelial cells.

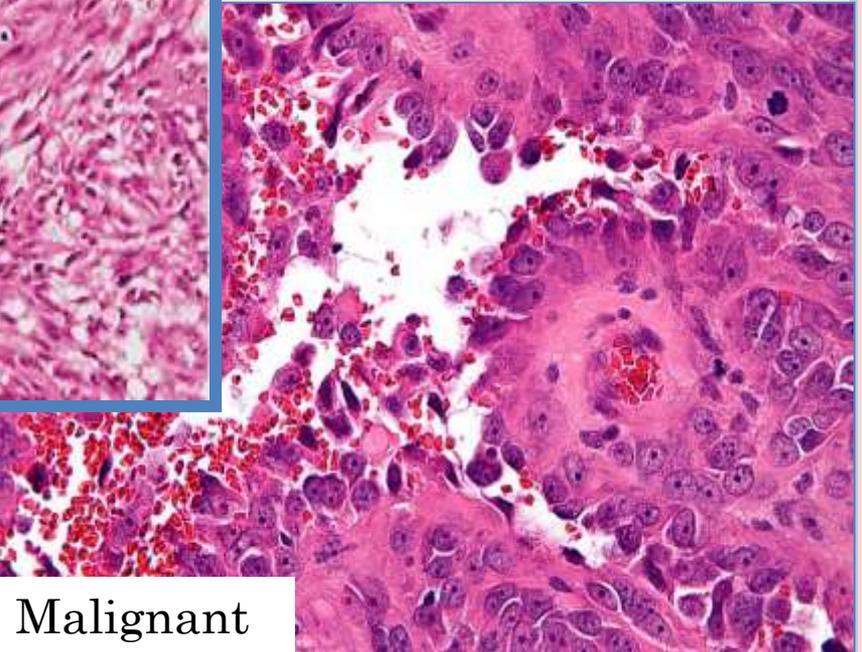
- in the inner aspect ←
- Contain RBCs.
  - Flat cells
  - No high degree of Atypia

Borderline



→ different from normal endothelial  
With higher degree of Atypia + Spindle shape cells  
Not well organized vascular channels (small or abnormally shaped)

- high degree of Atypia and Anaplasia ←
- ↑ mitosis
- Not well organized channels



Malignant

# NOMENCLATURE

○ Hem-angi-oma → Benign vascular tumor with vascular channels containing blood.  
↳ Blood (tumor contains blood)      ↳ Vessels      ↳ benign

○ Lymph-angi-oma → Benign vascular tumor contains lymph not RBCs.  
↳ Vascular tumor contains lymph      ↳ Vessels      ↳ benign

○ Angiosarcoma → malignant vascular tumor  
↳ Vessels      ↳ malignant mesenchymal tumor



# HEMANGIOMA

- common
- composed of blood-filled vessels.
- m/c age: infancy & childhood *most affected age groups ↓*
- Most are present from birth
- many regress spontaneously (↓ size) *↳ ↓ size + fainter color as the child is growing*
- m/c location: head and neck *Subcutaneous loc. in head and neck.*
- Some in internal organs (1/3 → liver)
- Malignant transformation: very rare

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*Benign tumor transfer to malignant.*

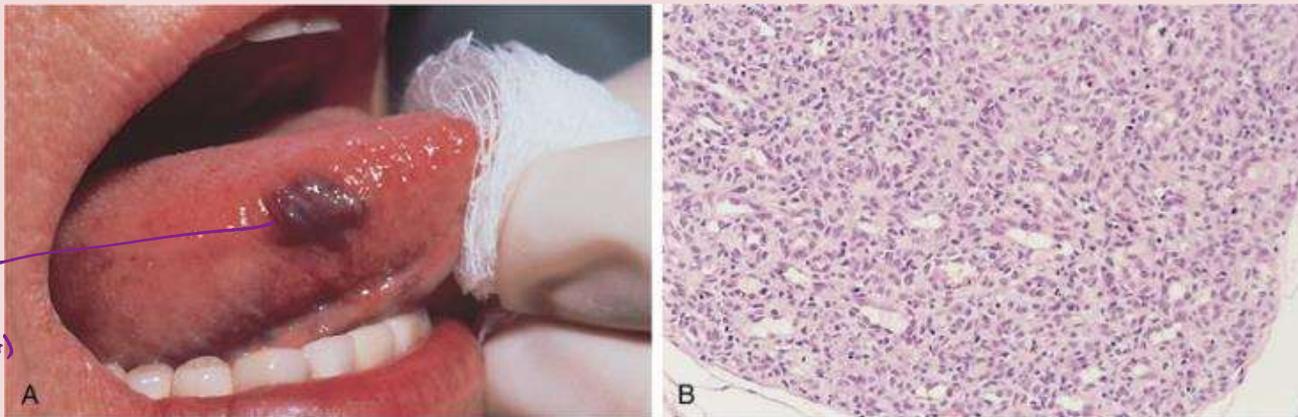


# HISTOLOGIC AND CLINICAL VARIANTS:

→ They're called "capillary" because vascular spaces that are formed in the tumor look like capillaries.

## 1- *Capillary hemangiomas* :

- most common type
- skin and mucous membranes of oral cavity & lips



## HISTOLOGIC AND CLINICAL VARIANTS:

### 2- strawberry hemangiomas of newborn (juvenile hemangioma):

- m/c head & neck (Scalp)
- Usually regress with time → ↓ size + ↓ color



## HISTOLOGIC AND CLINICAL VARIANTS:

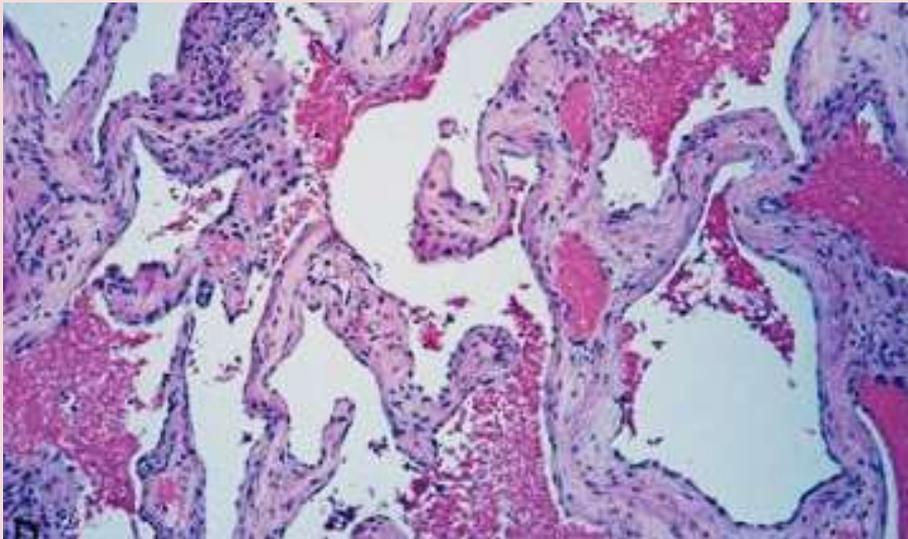
- 3- *Pyogenic granulomas*: → The name is a misnomer  
It's not pyogenic and it doesn't contain  
granulomas.
- rapidly growing pedunculated lesions on gingival mucosa
  - 1/3 history of trauma



## HISTOLOGIC AND CLINICAL VARIANTS:

4- *Cavernous hemangiomas* :

- large, dilated vascular channels
- deep organs (liver most common)
- do not spontaneously regress



# INTERMEDIATE-GRADE (BORDERLINE) TUMORS

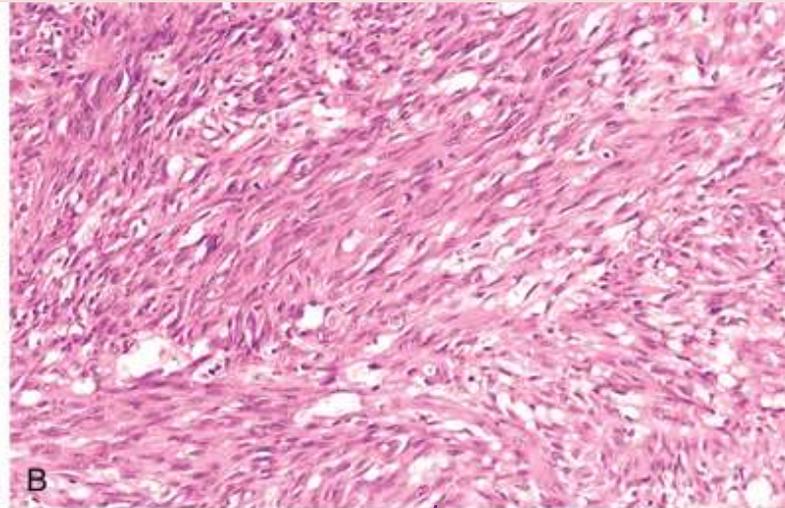
- *Kaposi Sarcoma (KS)*
- a vascular neoplasm caused by human herpesvirus- 8 = HHV-8
- *Several types: classic; endemic; Transplantation-associated; and AIDS-associated;*
- AIDS-associated (epidemic) KS is an AIDS-defining illness (used as a criterion for diagnosis of AIDS) → *Very common on these patients.*
- *the most common HIV-related malignancy*

→ HIV → Weak Immunity → ↑ Susceptibility for HHV8 → HHV8 Invas endothelial → Kaposi Sarcoma.



**kaposi sarcoma:** Multiple red-purple skin plaques or nodules, usually on the distal lower extremities; progressively increase in size and number and spread proximally

Skin  
and  
Subcutaneous →



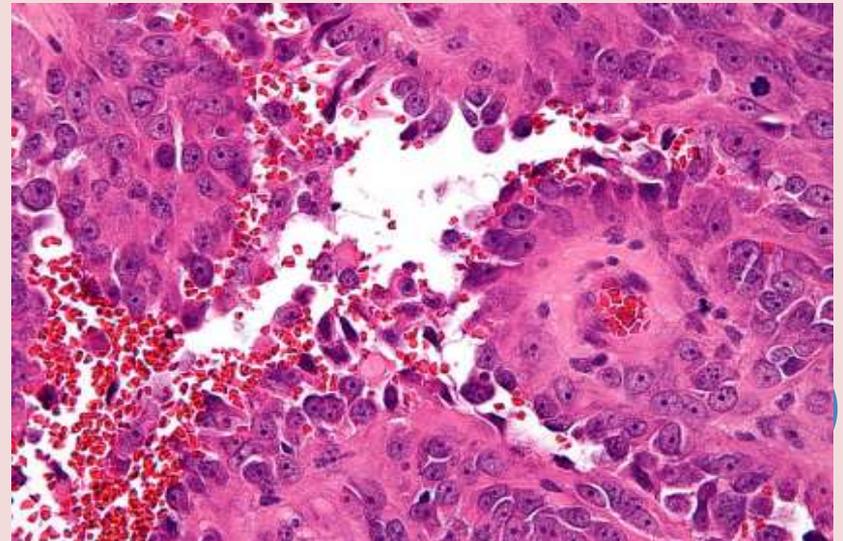
Kumar et al: Robbins Basic Pathology, 9e.  
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↓  
Spindle crowded cells  
+  
Not organized Vascular  
Channels



# MALIGNANT TUMORS

- Angiosarcoma :
- lesions can occur at any site, but most often involve the skin, soft tissue, breast, and liver.
- Pathogenesis= ? Carcinogens; ?unknown
- A latent period between exposure and tumor development



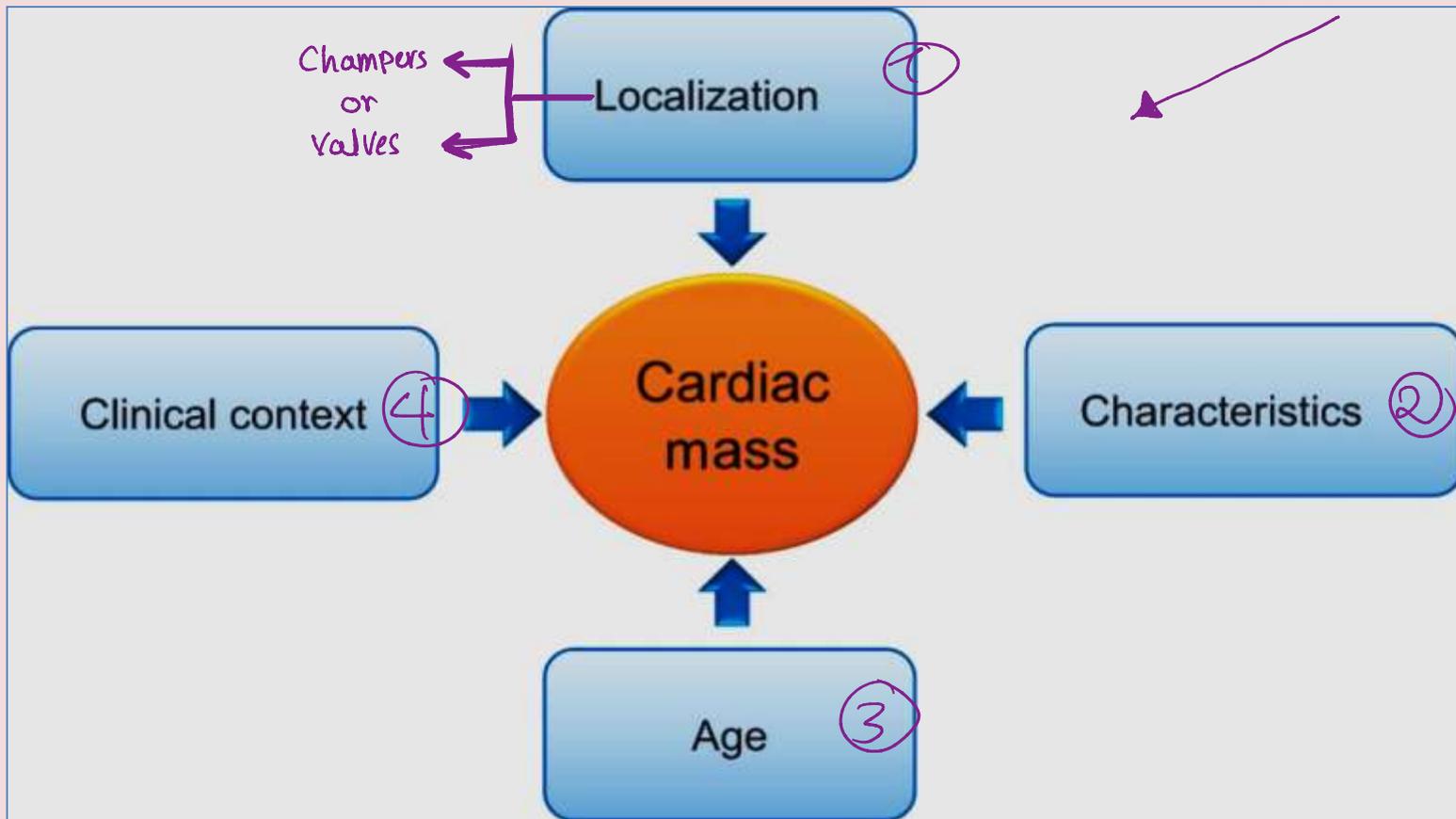
# RISK FACTORS OF ANGIOSARCOMA

- **Chemical carcinogens** → liver angiosarcoma
- **Irradiation**
- **Lymphedema** →
  - e.g. ipsilateral upper extremity several years after radical mastectomy with lymph node resection for breast cancer (Rare)
- **foreign bodies** → long-term (years)



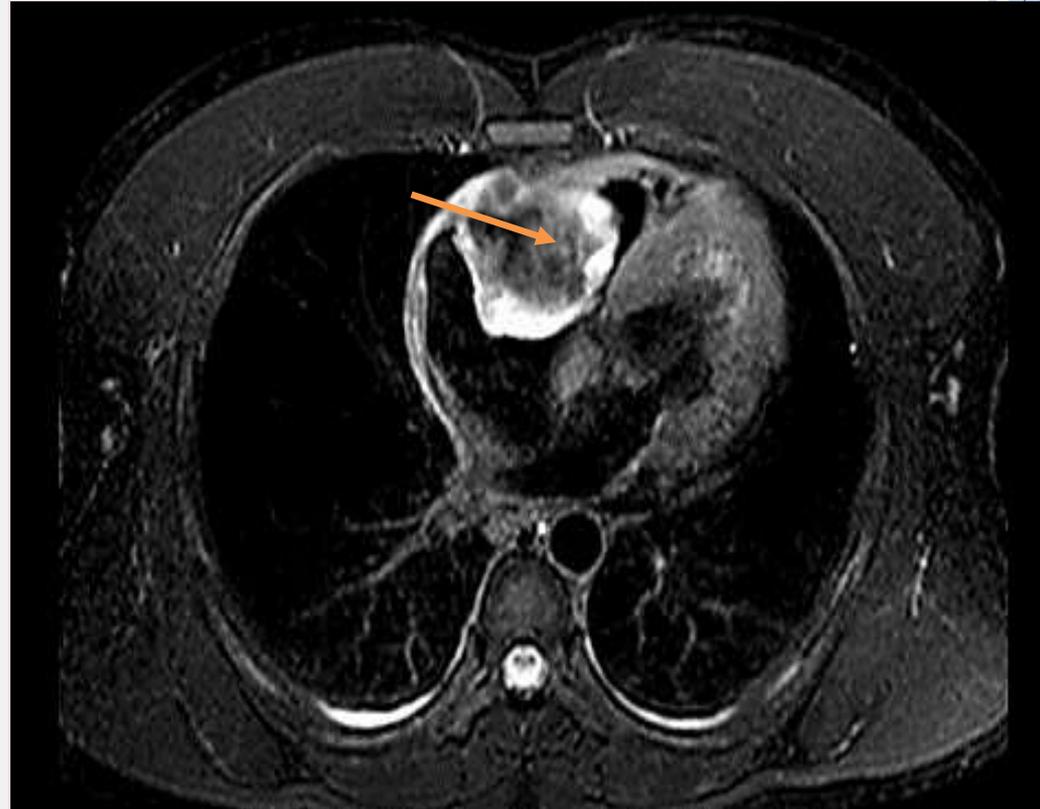
# CARDIAC TUMORS

• Factors affecting prognosis of cardiac lesions.



# CARDIAC TUMORS

- Very rare
- Metastatic Neoplasms are the most common malignancy of heart (5% of patients dying of cancer).
- most common source → lung cancer
  
- Angiosarcomas → most common primary malignant tumor of heart.
- Benign tumors are also very rare but important for their critical location



CARDIAC MAGNETIC RESONANCE IMAGING (CMRI)

# CLINICAL FEATURES AND SIGNIFICANCE

- 1- "ball-valve" obstruction → Tumor move with the heart during systole and diastole and with blood flow direction = transient occlusion either during systole and diastole (Very Significant)
- 2- Embolization → part of the tumor move to the circulation
- 3- fever and malaise → tumor elaboration of interleukin-6  
*Systemic manifestations of inflammation.*

○ **Diagnosis:** Echocardiography

○ **Treatment:** surgical resection in benign tumors.

*↳ depend on the type and location*

