



PATHOLOGY

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



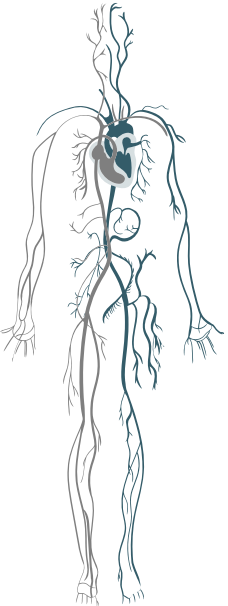
FINAL | Lecture 9

CVS Tumors

وَلَقَدْ خَلَقْنَا الْإِنْسَانَ وَنَعْلَمُ مَا تُوَسْوِسُ بِهِ نَفْسُهُ وَنَحْنُ أَقْرَبُ إِلَيْهِ مِنْ حَبْلِ الْوَرِيدِ
اللهم إنا نعوذ بك من شرور أنفسنا ومن سيئات أعمالنا

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Reviewed by: Laith Joudeh

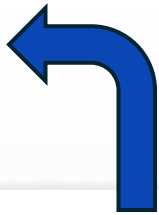


وَلِلَّهِ الْأَسْمَاءُ الْحُسْنَىٰ فَادْعُوهُ بِهَا

المعنى: الأول: الذي ليس قبله شيء، وكل ما سواه كائن بعد أن لم يكن، و(الآخر):
الباقى، الذي لا انتهاء لوجوده، وليس بعده شيء.

الورود: ورد الاسمان مرة واحدة في القرآن الكريم.

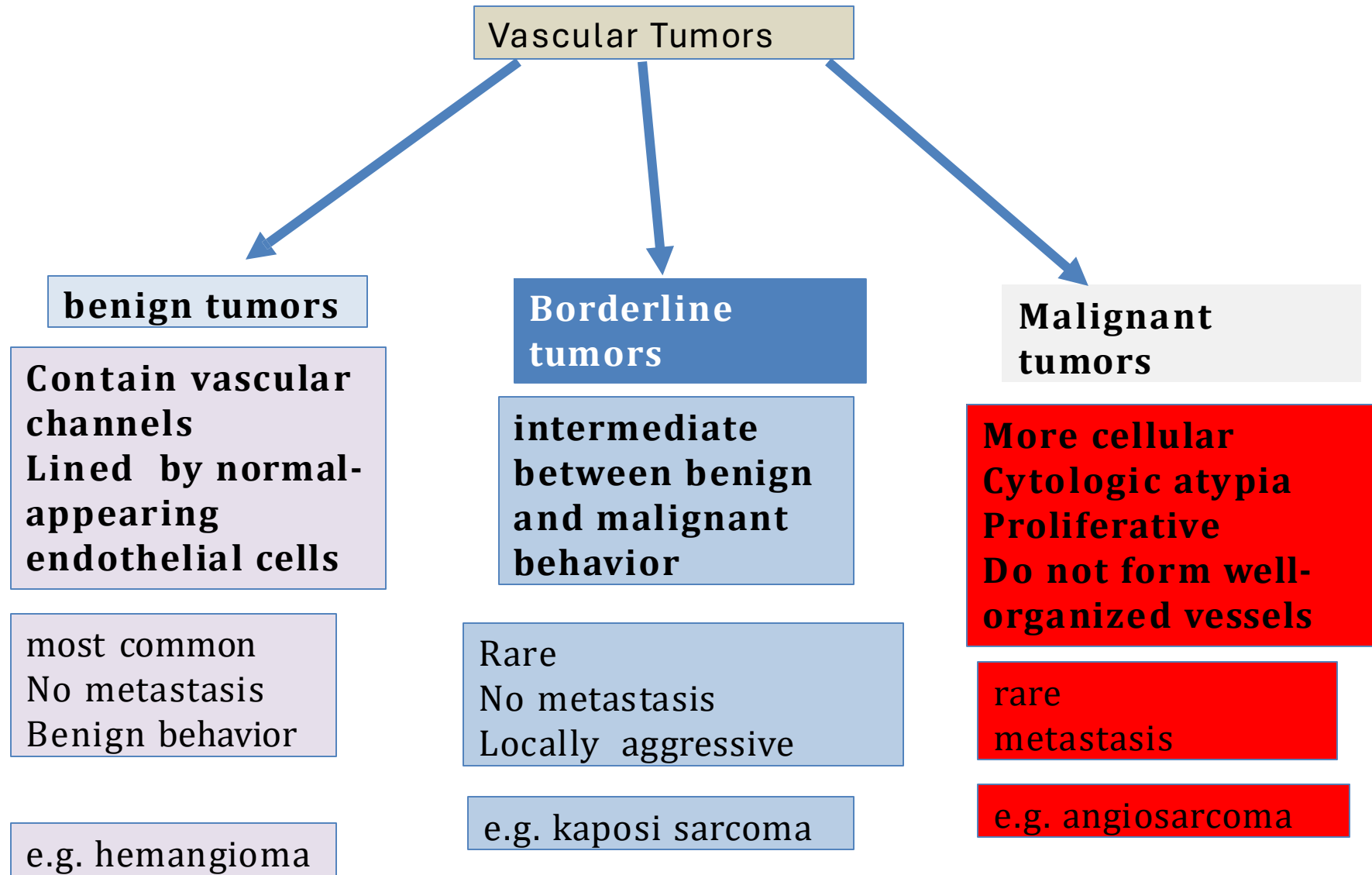
الشاهد: ﴿هُوَ الْأَوَّلُ وَالْآخِرُ وَالظَّاهِرُ وَالْبَاطِنُ وَهُوَ بِكُلِّ شَيْءٍ عَلِيمٌ﴾ [الحديد: ٣].



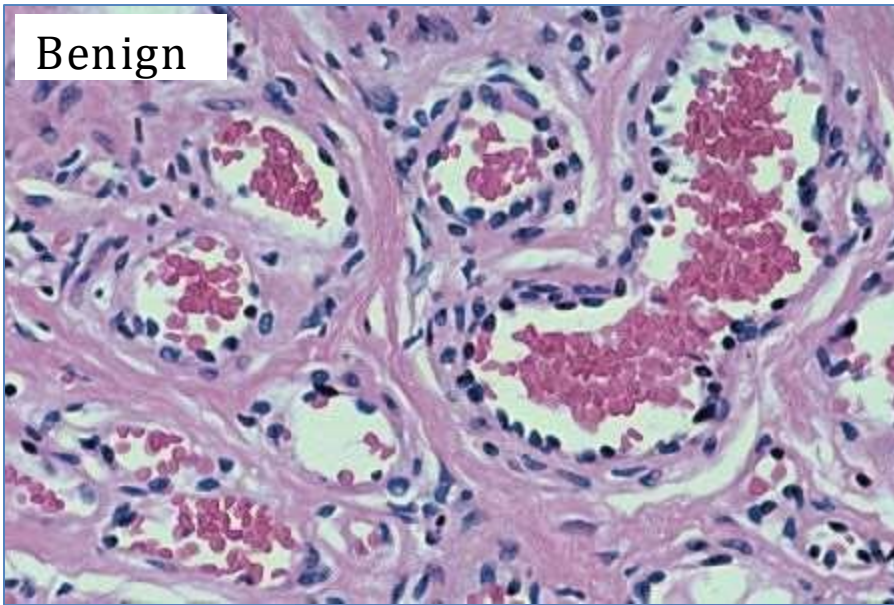
اضغط هنا لشرح أكثر تفصيلاً



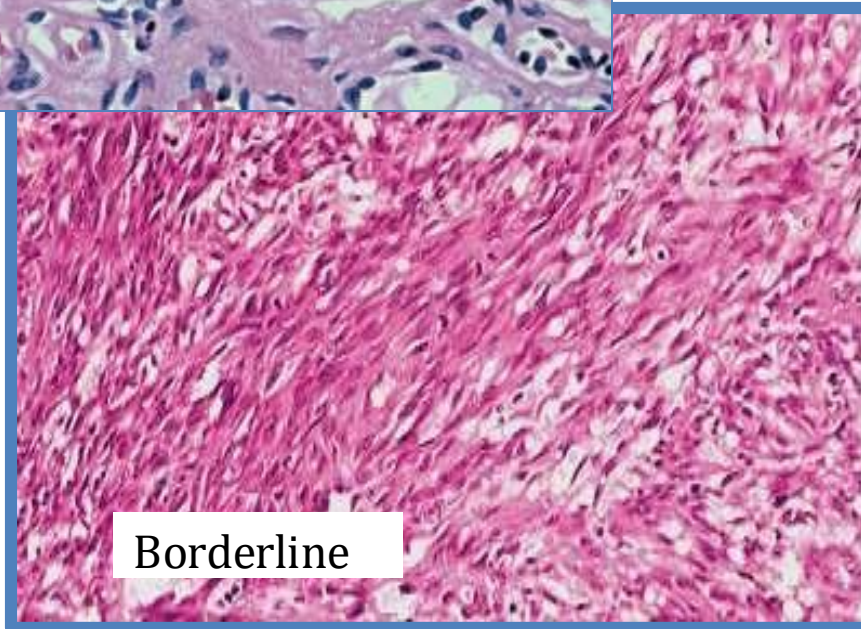
Vascular tumors: a group of diverse neoplasms that arise from endothelial cells.



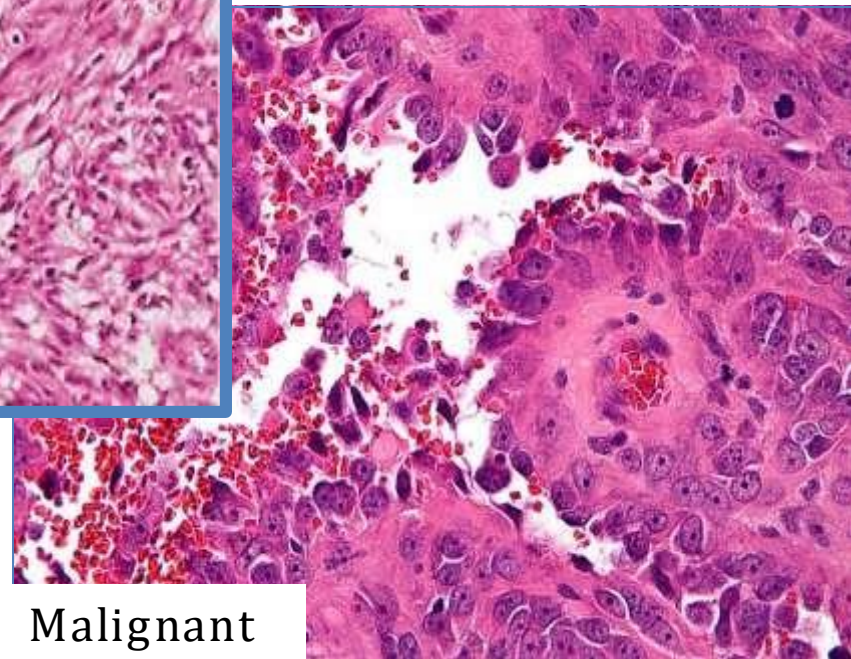
Benign



Borderline



Malignant



Morphology:

- **Benign: Resemble** normal endothelial cells (flat, with minimal or no cytologic atypia).
- **Borderline: Exhibit** increased cytologic atypia and **often** appear **spindle-shaped**, forming small or abnormally shaped vascular channels.
- **Malignant: Display** marked cytologic atypia and anaplasia with numerous mitotic figures; they typically fail to form well-organized vascular channels.

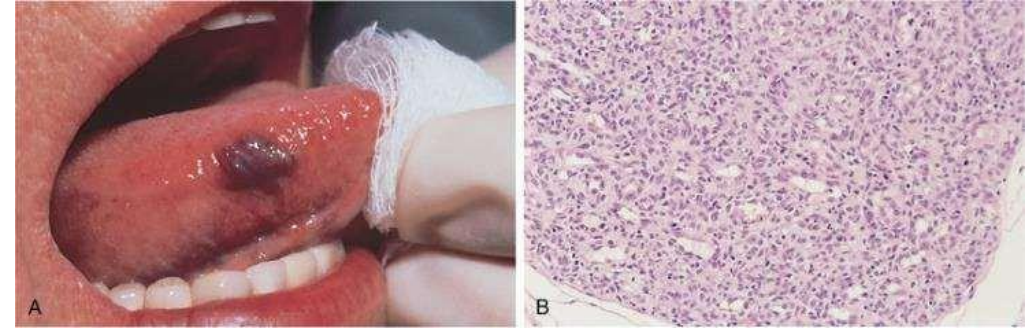
Nomenclature

- Remember:
 - *-oma* → mostly **benign**
 - **Sarcoma** → A malignant tumor of **mesenchymal** origin
- **Hem**-angi-oma:
 - Hem- = blood → the tumor contains blood-filled vascular spaces
 - Angio- = vessel
- **Lymph**-angi-oma:
 - Lymph- = lymph; the tumor shows lymphatic-type vessels
 - Does not contain blood
- **Angio**sarcoma

Hemangioma

- Common
- Composed of blood-filled vessels.
- Most common affected age group: infancy & childhood
- Most are present from birth. Many regress spontaneously (decrease in size and become lighter in color as the child grows), and some regress completely.
- Many regress spontaneously (↓ size)
- Most common location: head and neck
- Some can affect in internal organs about **1/3** of them involve the **liver**
- Malignant transformation: very rare

Histologic & Clinical Variants



1. Capillary Hemangioma

- It is the most common type of hemangioma.
- **It affects** the skin and the mucous membranes of the oral cavity and lips.
- **Histology:** The vascular spaces formed within the tumor look exactly like capillaries, hence the name.
- **Gross Appearance:** It typically looks like a strawberry (bright red) or a bruise, depending on its depth.

Histologic & Clinical Variants

2. Strawberry Hemangioma of the Newborn (Juvenile Hemangioma)

- Most commonly in the head and neck region.
- Course: **It typically appears at birth** and regresses spontaneously with time.
 - Do your own research



Histologic & Clinical Variants

3. Pyogenic Granuloma

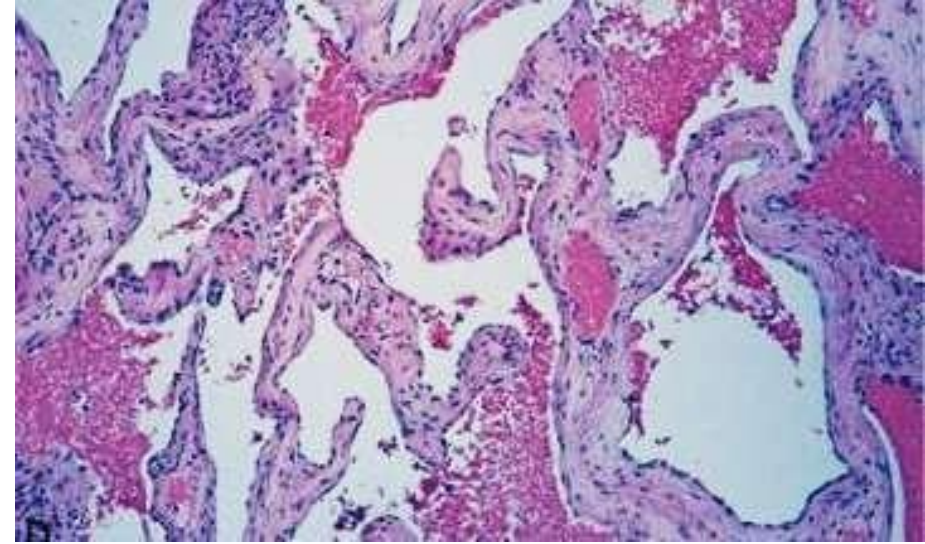
- Rapidly growing, pedunculated lesions that usually appear on the gingival mucosa.
- Approximately one-third of cases have a history of trauma.
- The name is a misnomer! It is neither "pyogenic" (pus-producing) nor a true "granuloma."



Histologic & Clinical Variants

4. Cavernous Hemangioma

- "Cavernous" comes from "cave."
- It is named so because it contains large, dilated vascular channels.
- Location: Mostly affects **deep organs** (the **liver** is the most common site).
- Prognosis: Unlike its "capillary hemangioma" counterparts, **it does not spontaneously regress.**

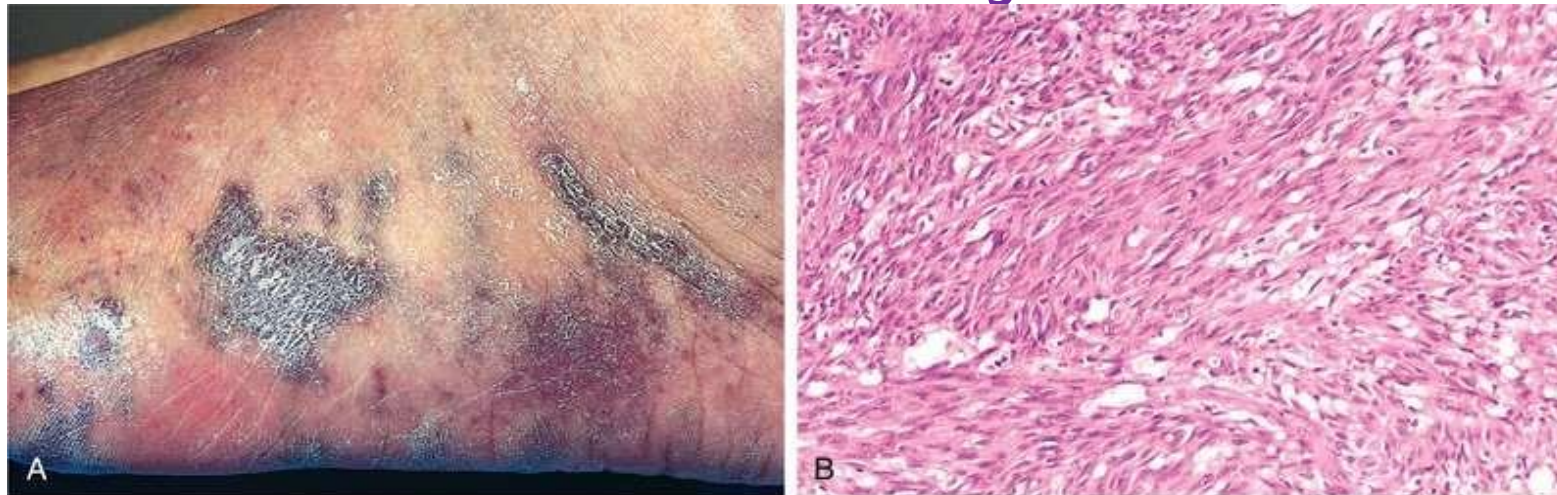


Intermediate-Grade Borderline Tumors

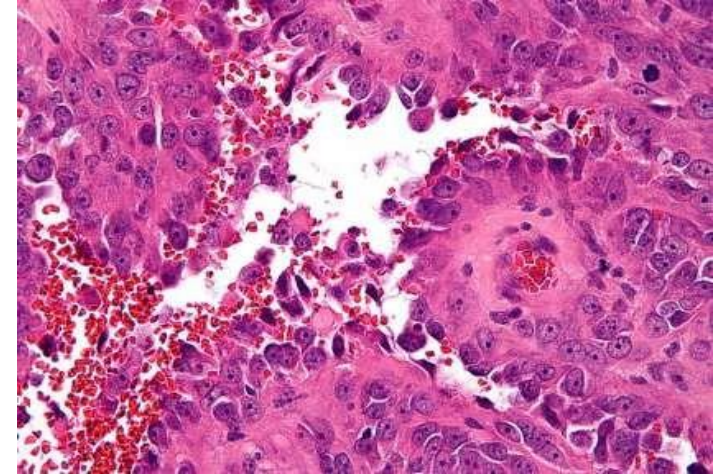
- **Kaposi sarcoma:**
- A vascular neoplasm caused by **Human Herpesvirus-8 (HHV-8)**.
- There are four main types:
 - Classic, Endemic (African), Transplantation-associated, and AIDS-associated (Epidemic).
- Significance in HIV: **AIDS-associated KS (Epidemic)**. It is an **AIDS-defining illness (used as a criterion for diagnosis of AIDS)**. **Because** It is the **most common HIV-related malignancy**.
- **Pathogenesis:**
 - HIV: Weakens the immune system (T-cell suppression).
 - HHV-8: The virus is reactivated/potentiated by the immunosuppression, leading to endothelial proliferation and tumor formation.

Kaposi Sarcoma:

- **Grossly:** Multiple red-purple skin plaques or nodules, usually on the distal lower extremities; progressively increase in size and number and spread proximally
- **Kaposi Sarcoma Histology:**
 - Under the microscope, these look like **spindle-shaped cells** that are quite **crowded** and **do not form** well-organized vascular channels.



Malignant Tumors



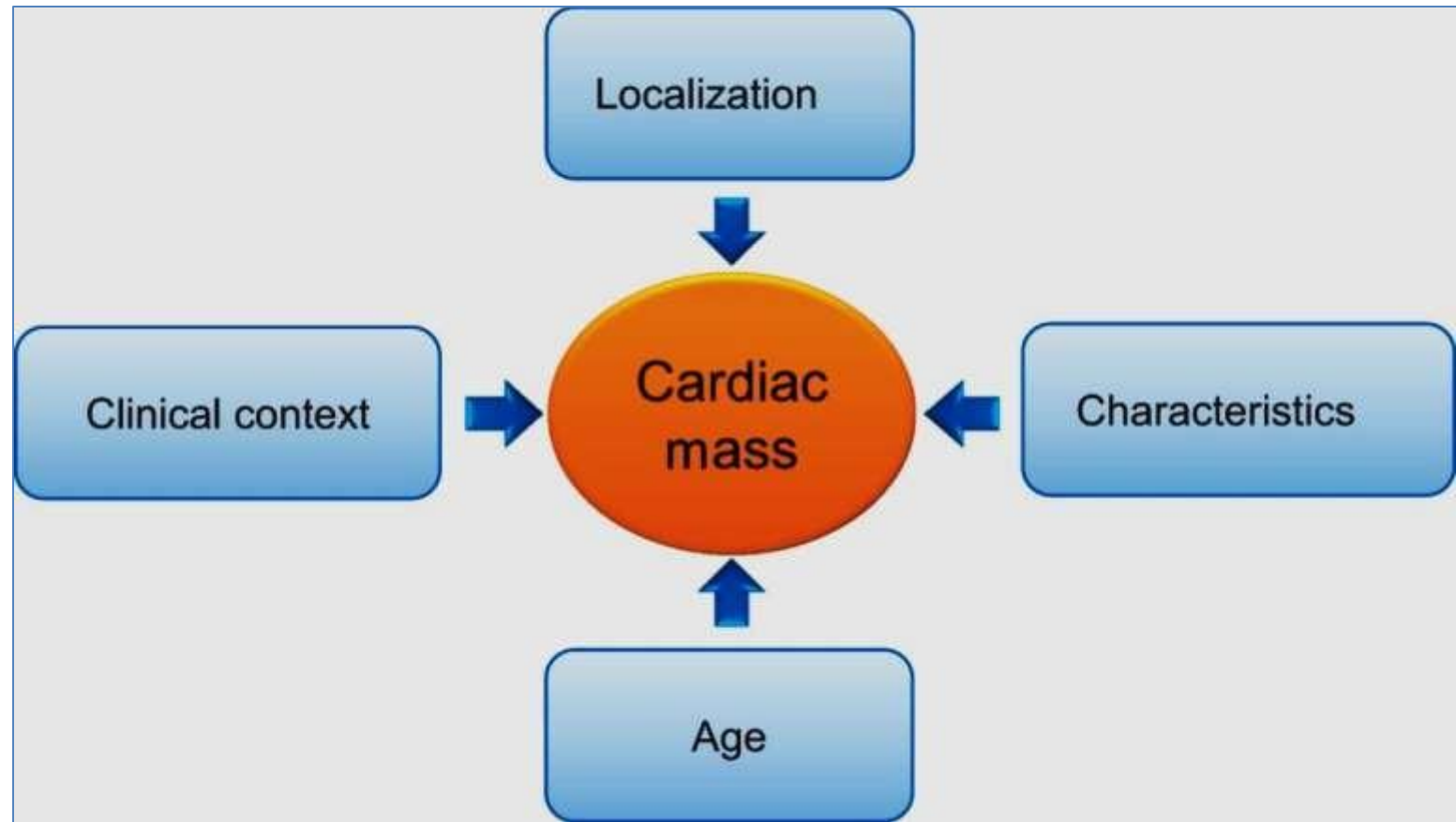
- **Angiosarcoma:**
- Lesions can occur **at any site**, but most often involve the **skin**, **subcutaneous tissue**, soft tissue, breast, and liver.
- **Pathogenesis:** Some cases are linked to specific **carcinogens**, but generally it is idiopathic.
- **Latency:** A distinct latent period (often years) is noted between exposure to the carcinogen and tumor development.

Risk Factors of Angiosarcoma

- **Chemical Carcinogens:** These are regarded as a risk factor, specifically for **Liver Angiosarcoma**.
- **Irradiation:** Radiation therapy of any organ can be a risk factor for the development of **Angiosarcoma** in that particular organ.
- **Lymphedema:**
 - Examples: **Ipsilateral lymphedema in the upper extremity that develops several years after radical mastectomy with lymph node resection for breast cancer.**
 - **Incidence:** It is very rare. Only a small percentage of people treated for breast cancer develop lymphedema, and only a small group of *those* are at risk for Angiosarcoma.
- **Presence of Foreign Bodies** → Long-term presence (years) of **foreign bodies**.

Cardiac Tumors

- **Many factors play a role** in the prognosis and outcome of the lesion:
- **Location:** Specifically, whether it is within a **chamber** or involving a **valve**.
- **Clinical context:** The manner in which the cardiac mass **presents**.
- **Patient age.**
- **Lesion characteristics:** Including the specific **behavior** of the tumor.



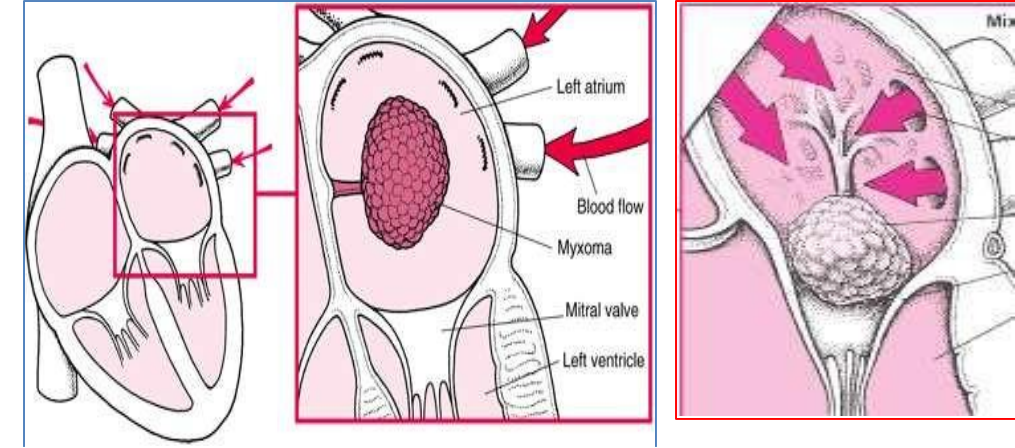
Cardiac Tumors

- **Very rare**
- **Metastatic Neoplasms** are the most common **malignancy** of heart (**about** 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

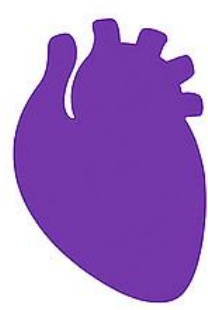


Cardiac Magnetic Resonance Imaging (CMRI)

Clinical Features & Significance



1. The presence of **"Ball-valve" obstruction**:
 - The tumor, with its pedunculated stalk, can move during systole and diastole with the blood flow.
 - This leads to transient occlusion of the valve
2. The risk of **Embolization**: A fragment of the friable tumor can embolize and enter the systemic circulation.
3. **Fever** and **malaise** → The systemic manifestations of inflammation that are related to tumor elaboration of **interleukin-6**
 - **Diagnosis**: Echocardiography
 - **Treatment**: depends on type and the exact location but generally include Surgical resection in **benign** tumors.



PATHOLOGY QUIZ

LECTURE 9

Scan the QR code or click it for FEEDBACK



Corrections from previous versions:

Versions	Slide # and Place of Error	Before Correction	After Correction
V0 → V1			
V1 → V2			