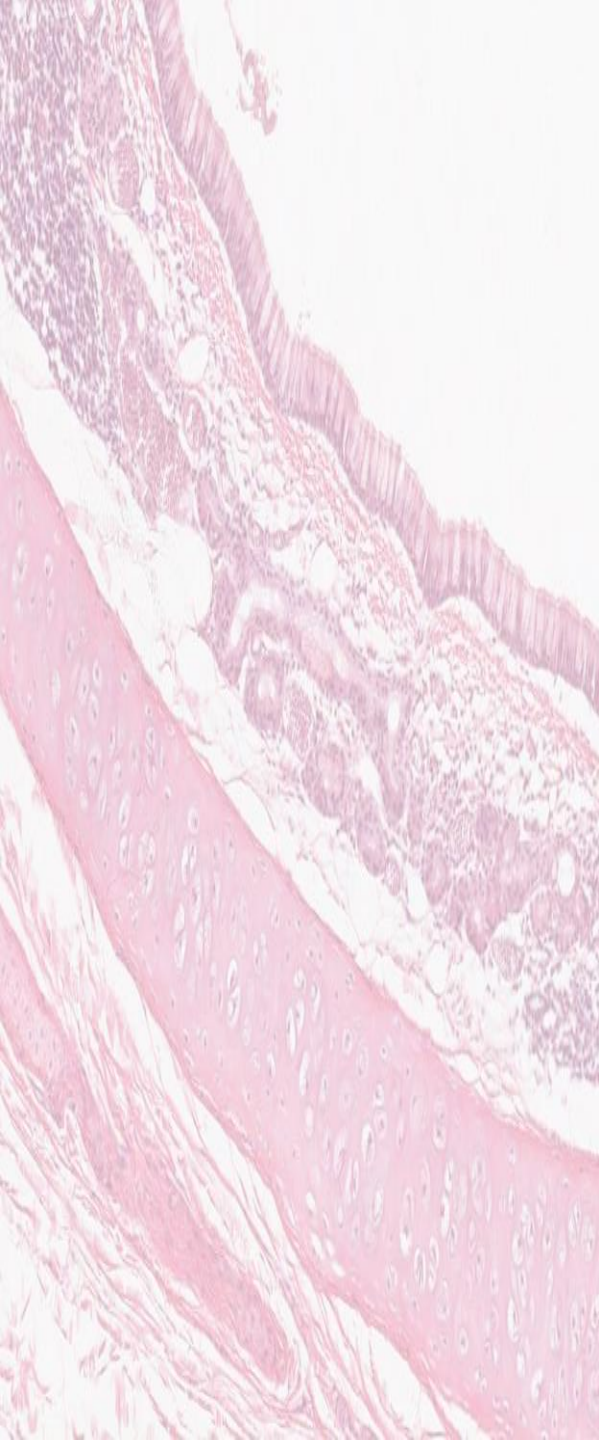




Practical Histology

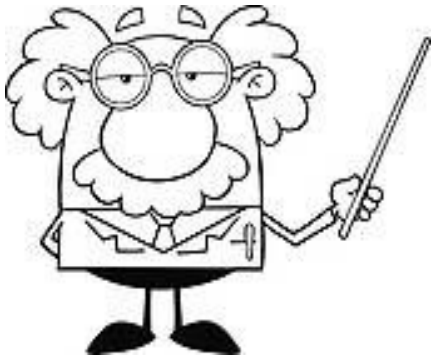
Cardiovascular block



وَمَنْ يَتَوَكَّلْ عَلَى اللَّهِ فَهُوَ حَسْبُهُ

Things you need to know before the exam :

- The pictures in the exam will be the same as the ones included in the slides.
- Don't try to take short cuts during the exam so avoid using abbreviations so you don't lose marks.
- Please keep in mind that this work is done by students , so if there are any mistakes please inform us .
- This work is not by any means a reference.
- Please study hard and don't worry the exam will be easy!!



Wall of the Heart

The wall of heart composed of:

- ✓ Endocardium (most inner layer)
- ✓ Myocardium
- ✓ Epicardium (most outer layer)

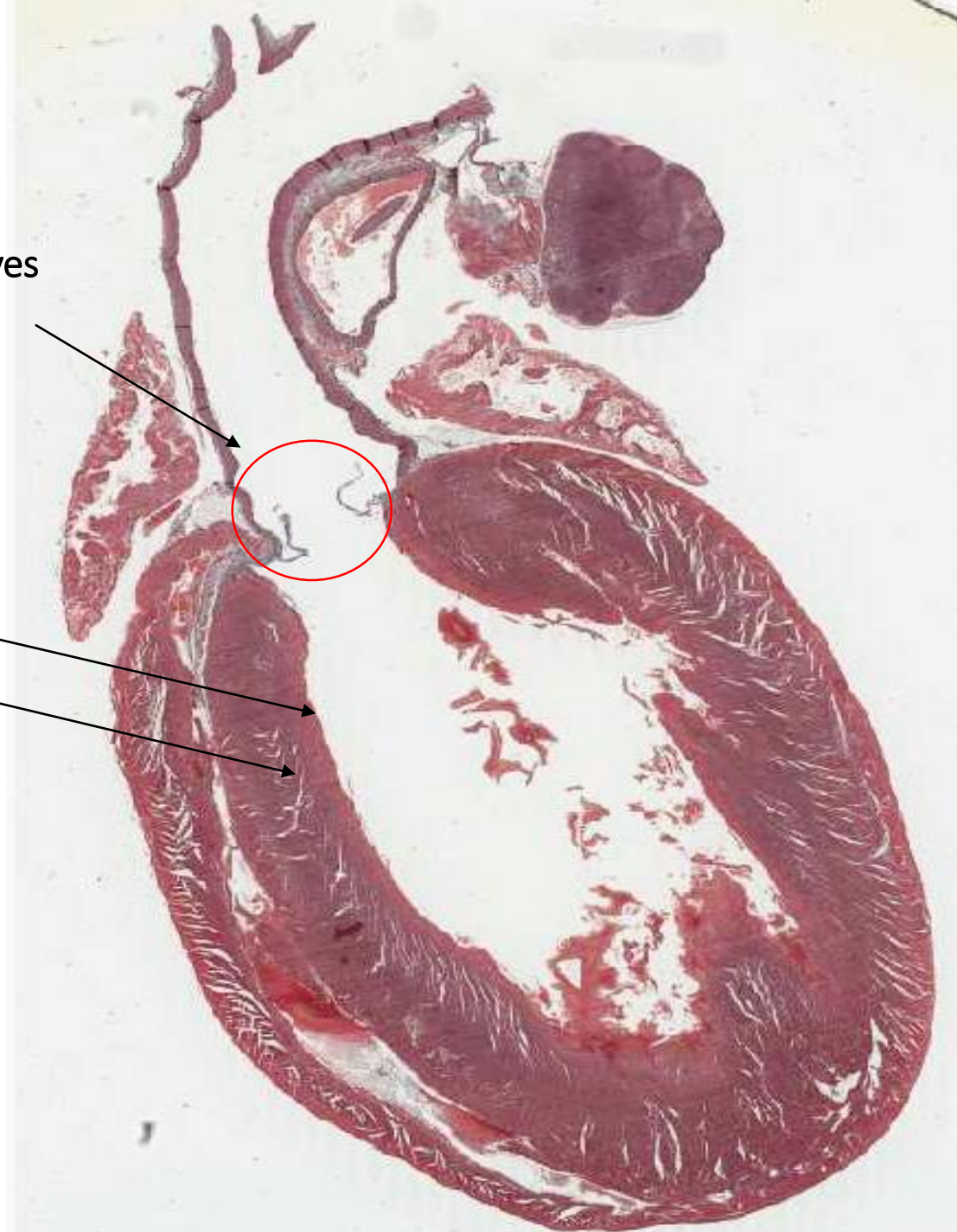
Type of epithelium found endocardium :

- ✓ Endothelium which is SIMPLE SQUAMOUS EPITHELIUM

Type of epithelium found in epicardium :

- ✓ Mesothelium which is SIMPLE SQUAMOUS EPITHELIUM

Cardiac Valves
" cusps "



Cardiac Valve

Identify the structure :

✓ Cardiac Valve

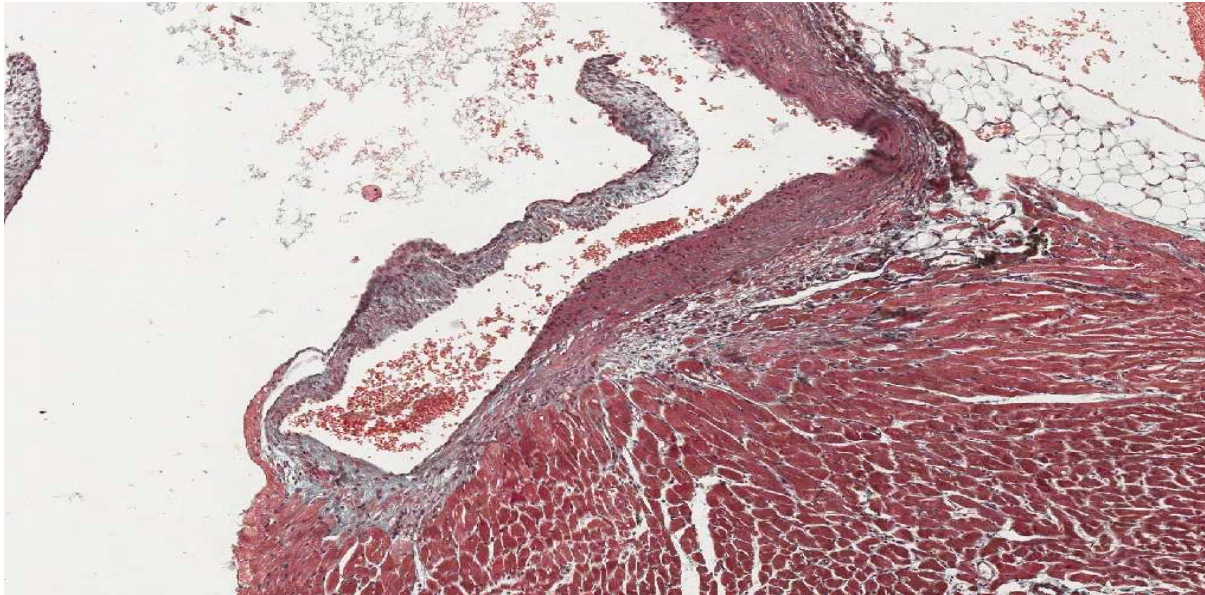
Each cusp of the heart valve is formed of :

✓ A core of Dense irregular C.T., this core is cover by endothelium

Features:

✓ Avascular

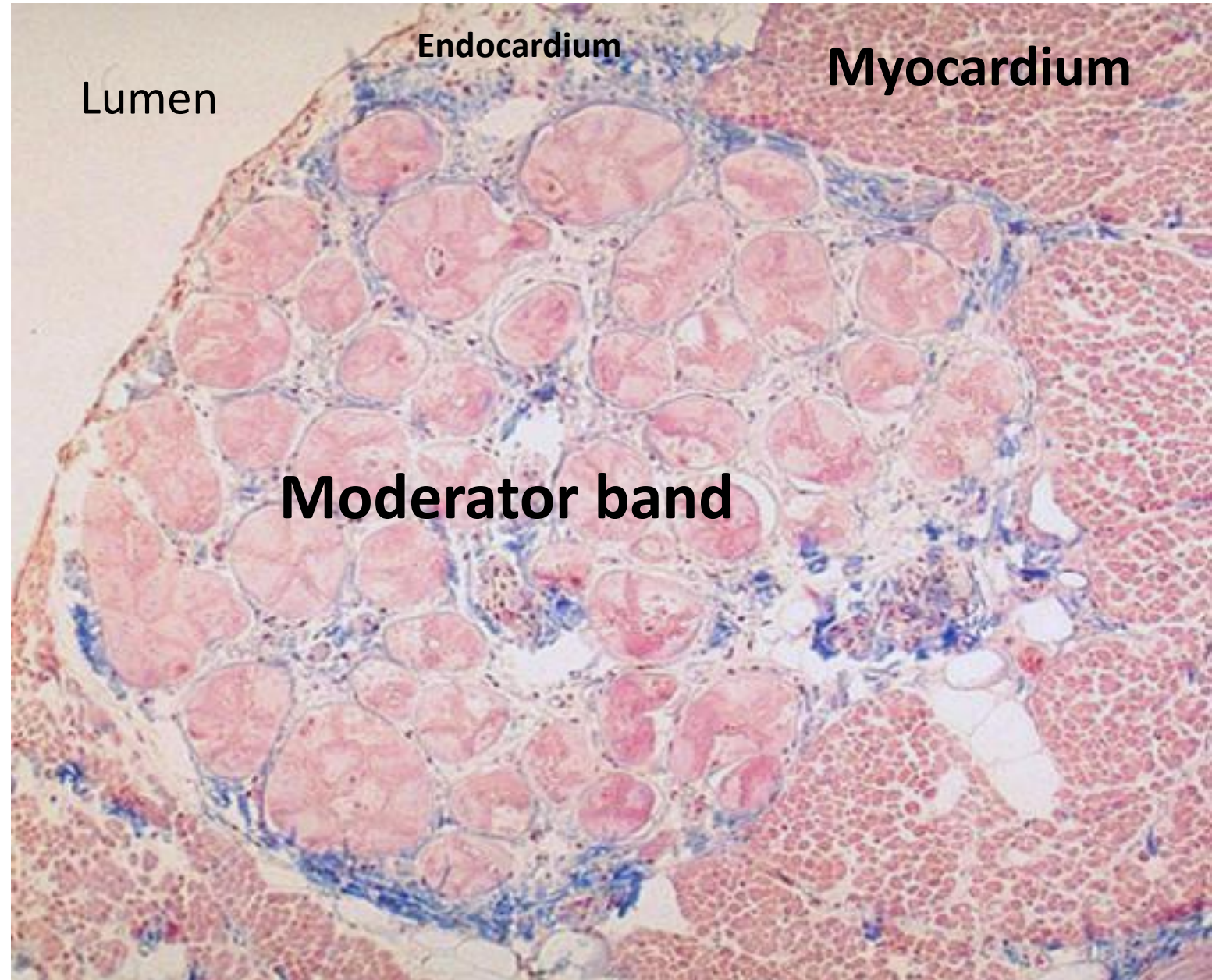
✓ Blood capillaries can be found only in the base "root" of the cusp.



Moderator Band

Features:

- ✓ Present in the right ventricle.
- ✓ Contains **purkinje fibers**.
- ✓ it's a modified cardiac muscle



Endocardium and Myocardium

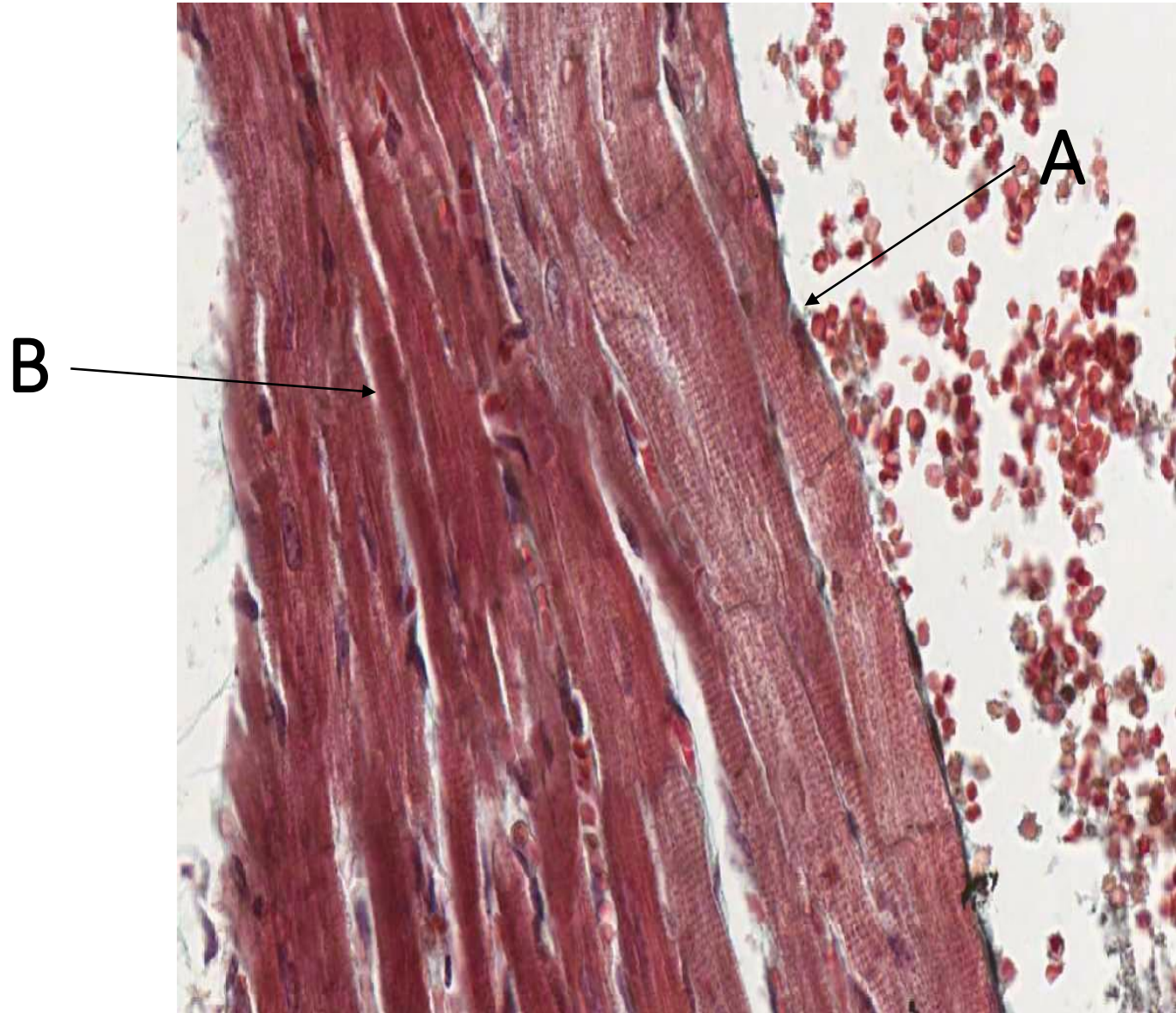
Identify A and B :

A: Endocardium

B: Myocardium.

Features of the endocardium:

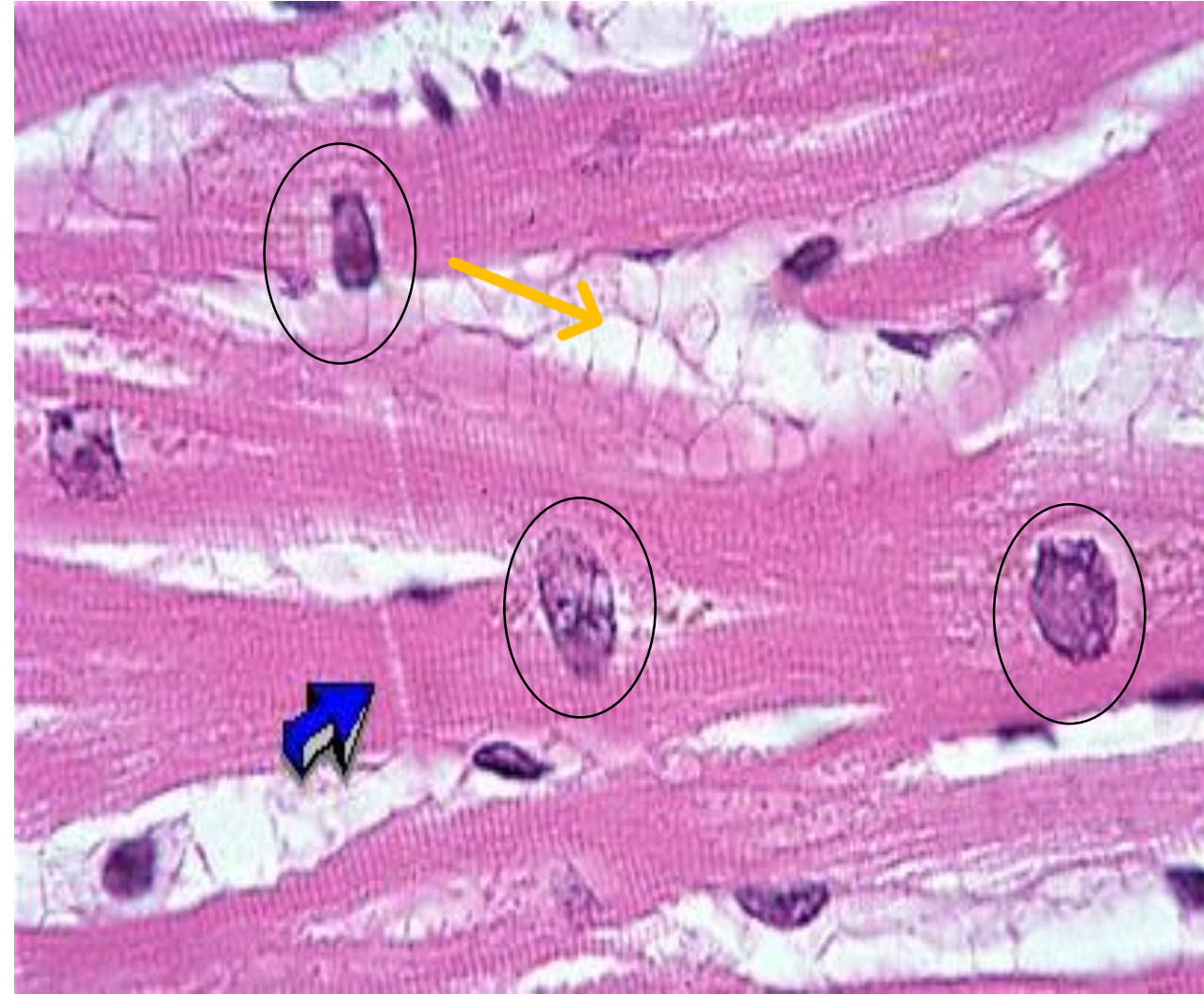
- ✓ Endothelium.
- ✓ Subendothelial C.T.
- ✓ Dense C.T. layer.
- ✓ Subendocardial layer.



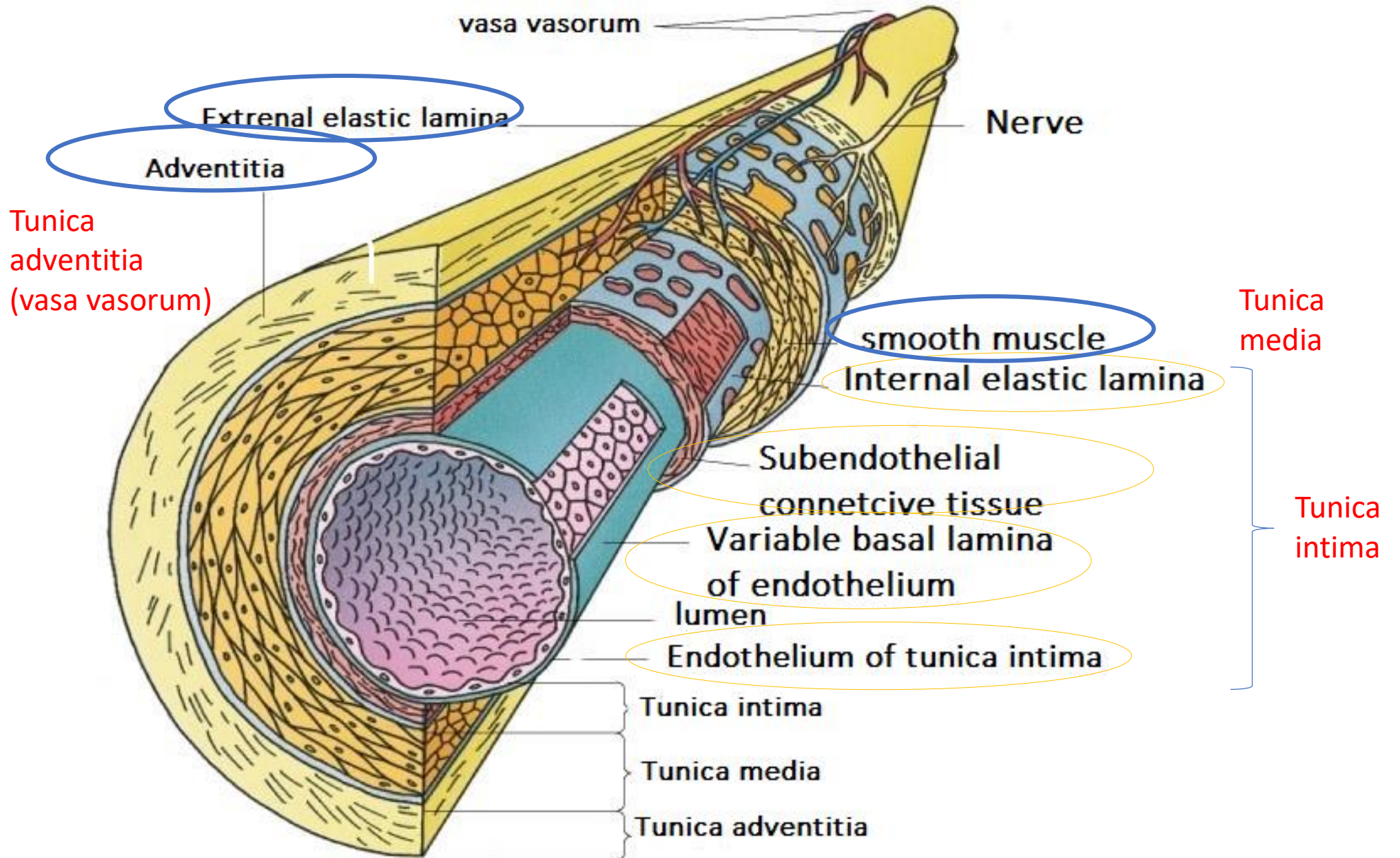
Myocardium

Features:

- ✓ Intercalated discs (**blue arrow**).
- ✓ Endomysium which is a loose C.T. (**Yellow arrow**)
- ✓ Nuclei of myocardial cells:
Central and round nuclei.
(**Black Circles**)



EXTRA FOR UNDERSTANDING THE LAYERS OF A BLOOD VESSEL



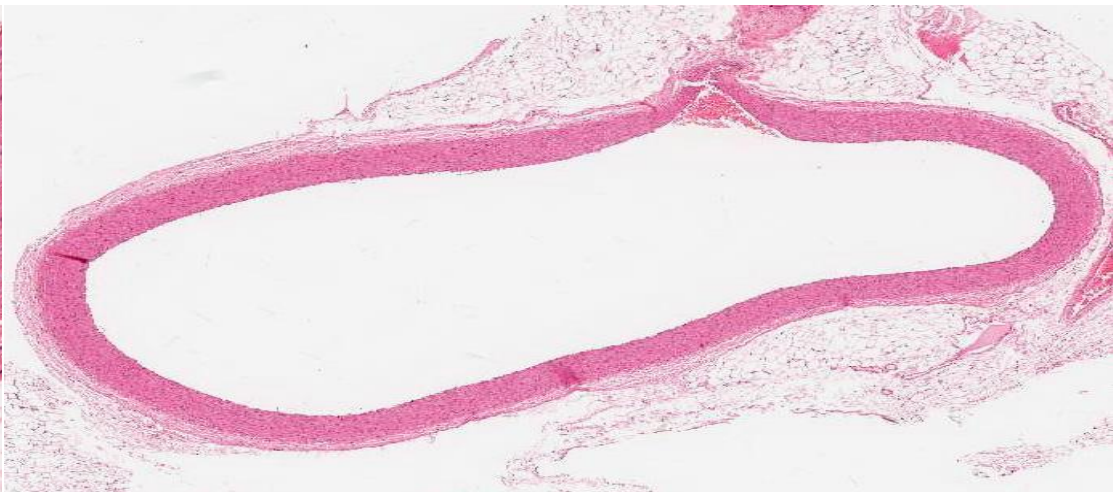
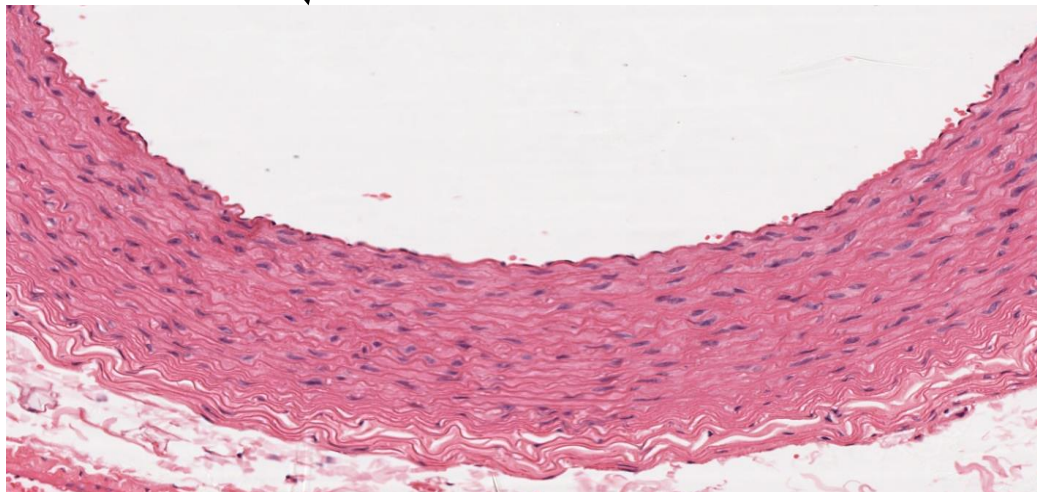
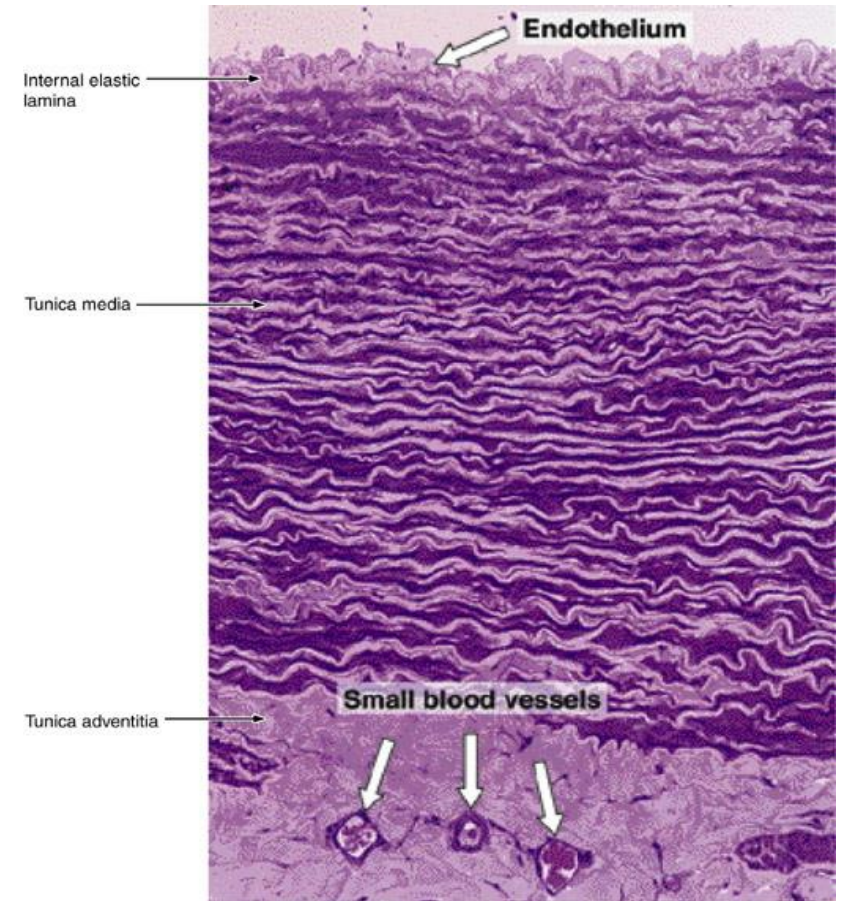
Elastic Artery

Features:

- ✓ Endothelium in the Intima
- ✓ Fenestrated elastic lamellae (membrane) in the media.
- ✓ **Vasa vasorum** in adventitia and outer part of media (for blood supply)

Examples:

Aorta and Pulmonary Trunk



Muscular Arteries (Medium-sized Artery)

Identify the structure:

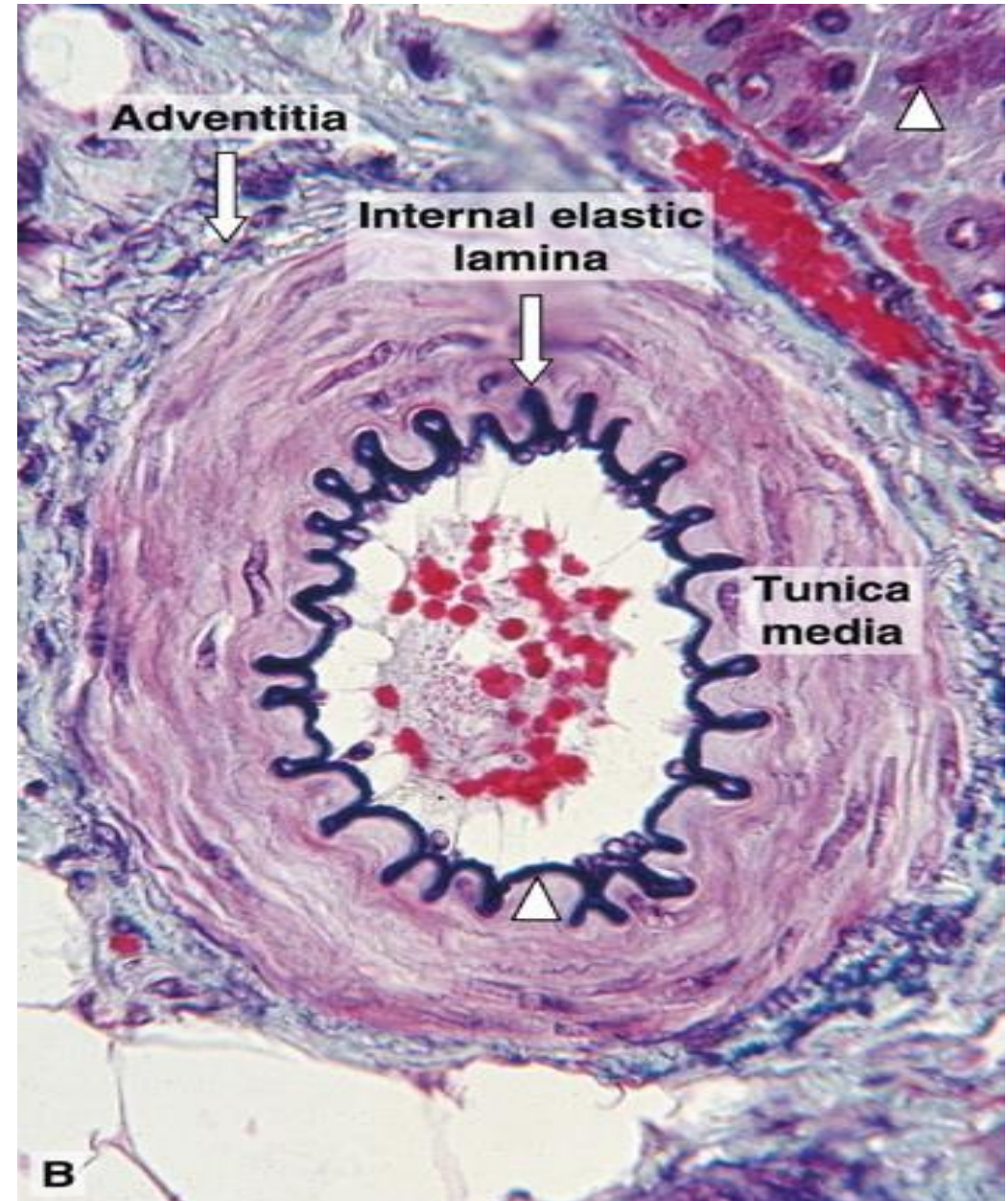
- ✓ Muscular Arteries or Medium-sized Artery

Features:

- ✓ Prominent internal elastic lamina.
- ✓ T. Media is rich in smooth muscle cells.
- ✓ T. Media is **Thicker** than T.Adventitia.

Examples:

Brachial, Ulnar and Renal Artery



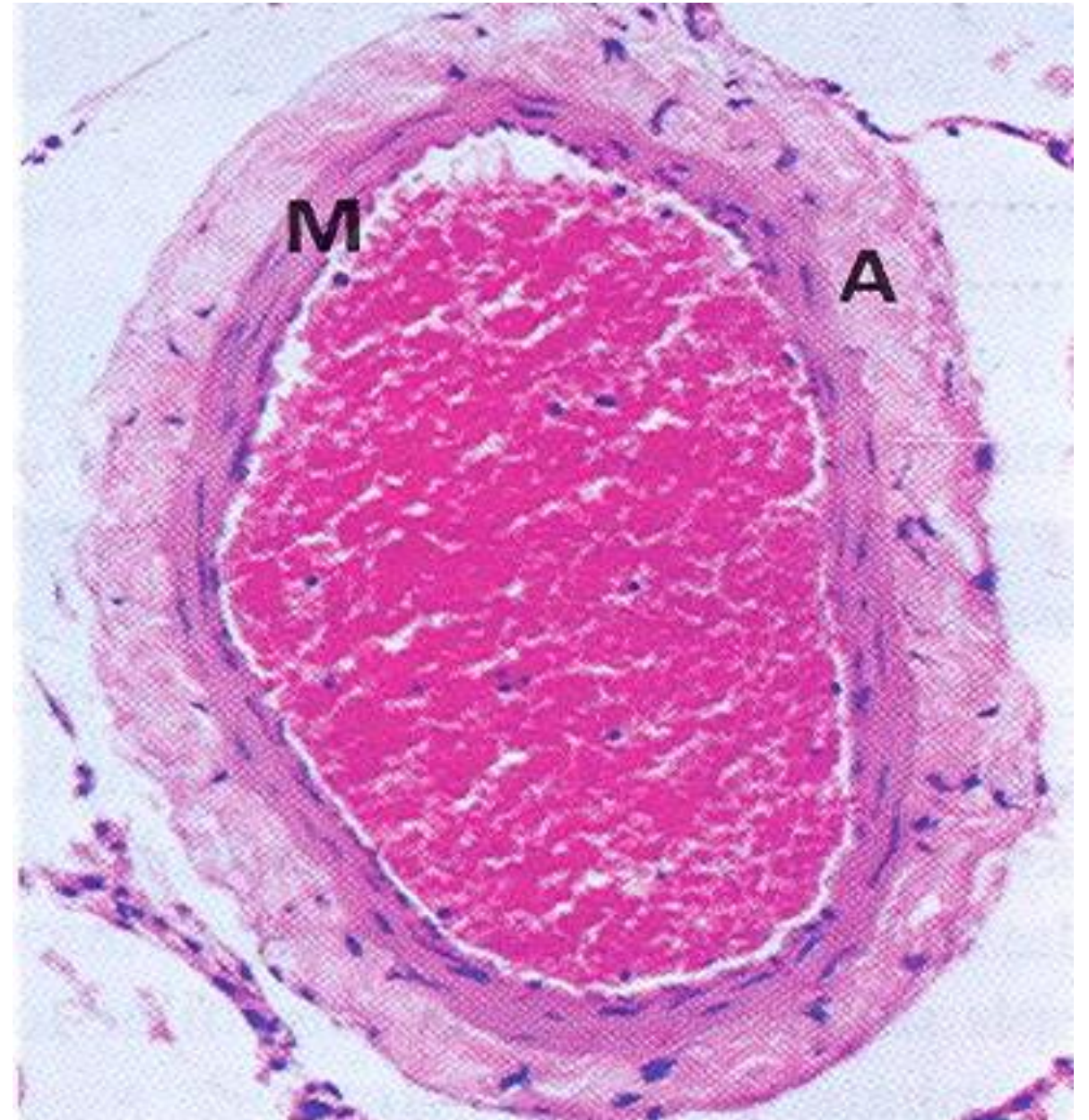
Medium-sized Vein

Identify:

- ✓ Medium-Sized Vein

Features:

- ✓ NO internal elastic lamina.
- ✓ Type I & III Collagen fibers in T. Media.
- ✓ T. Media is Smaller than T.Adventitia.
- ✓ T. Media contains smooth muscle cells

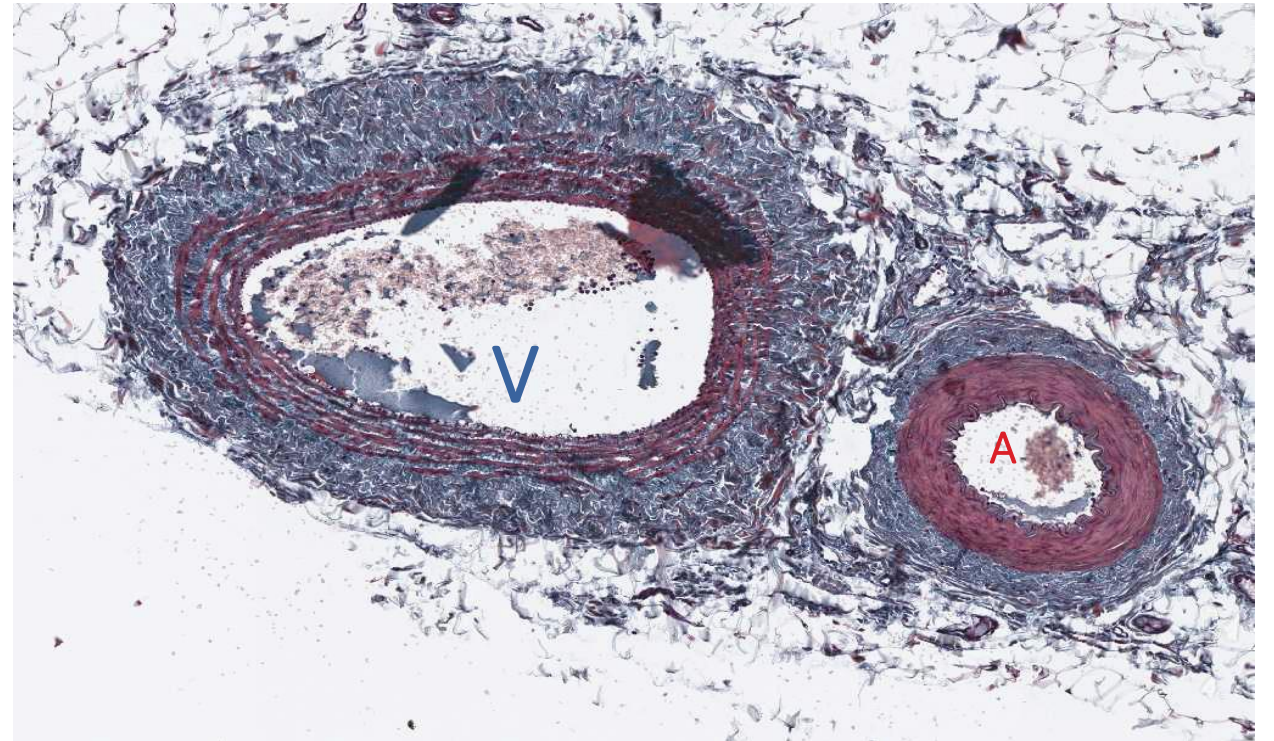
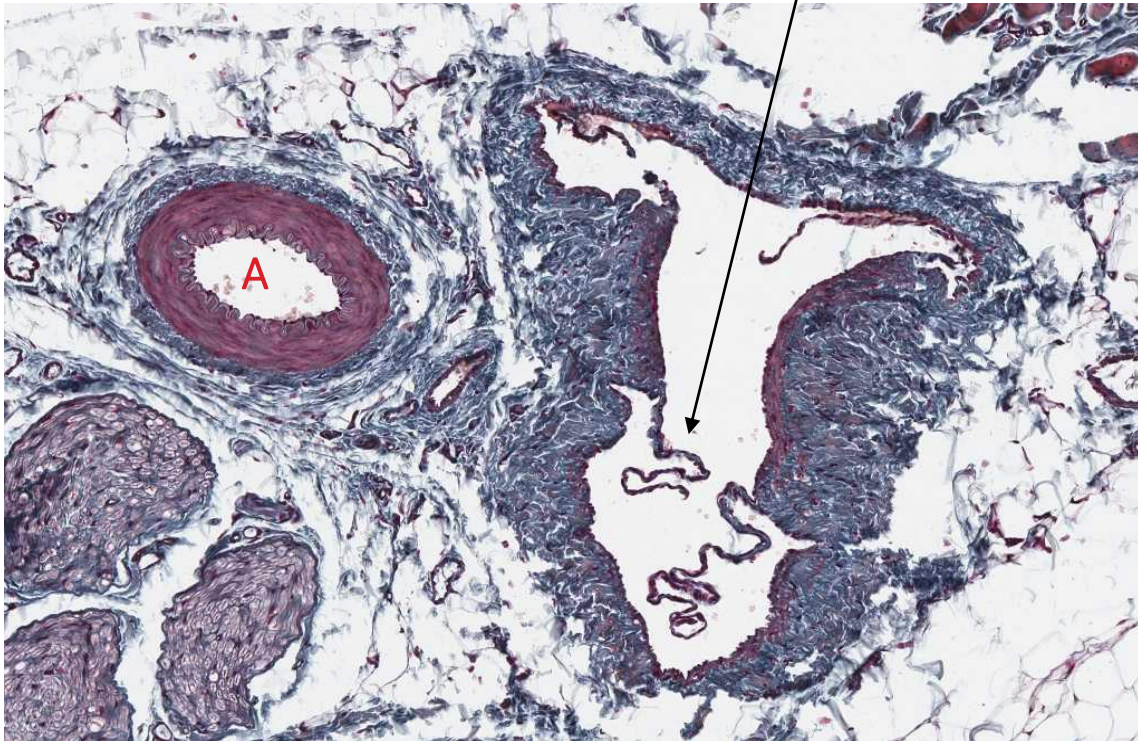


Comparison between medium-Sized Artery and Vein

A : Artery

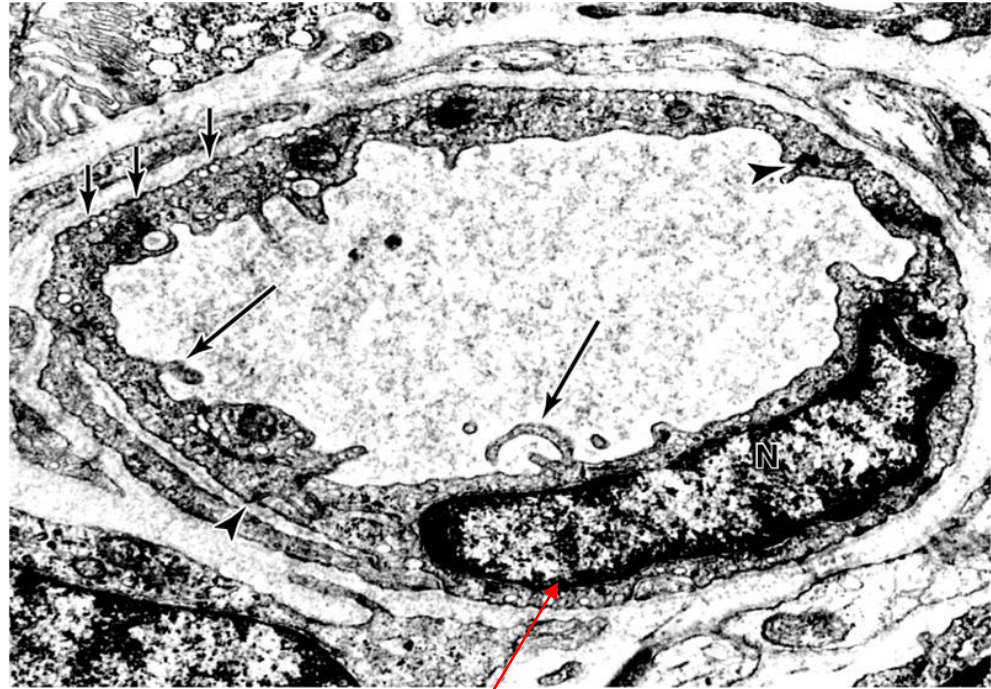
V : Vein

Valve



Blood capillaries

Continuous Blood Capillary



Nucleus of the endothelial cell

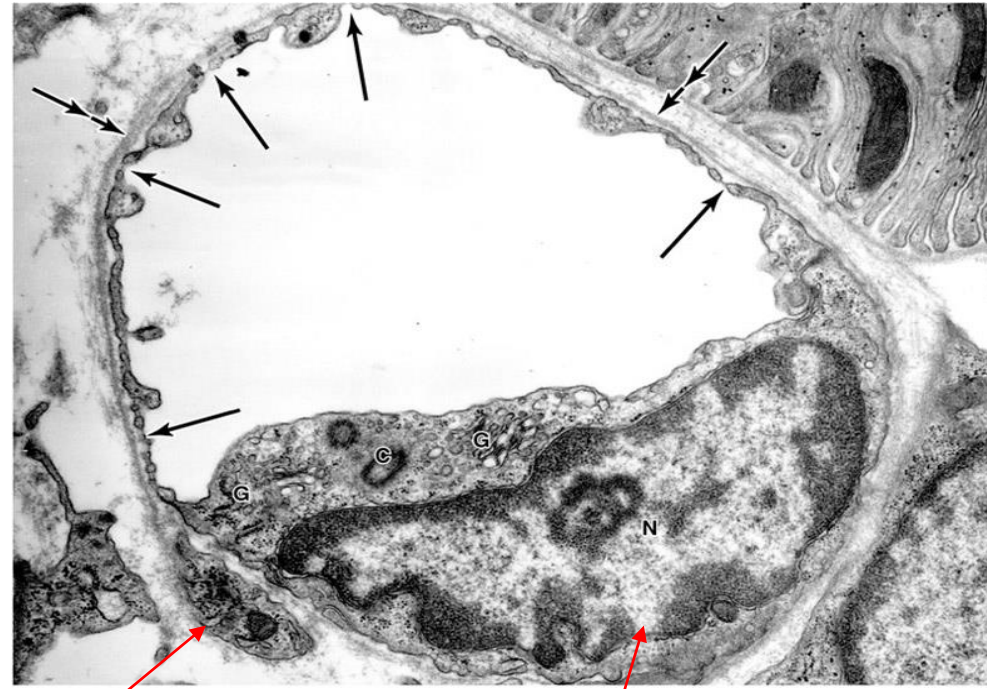
Features:

Continuous Blood Capillary no pores "fenestrae".

Distribution:

- ✓ Muscle.
- ✓ Nervous Tissue.

Fenestrated Blood Capillary



Pericyte

Nucleus of the endothelial cell

Features:

- ✓ Fenestrated Blood capillary with **diaphragm**.

Distribution:

- ✓ Intestine.
- ✓ Pancreas.
- ✓ Endocrine glands.



Note: The fenestrated blood capillaries without diaphragm are found only in the kidney

Thank you & good luck

- Histology team

Done by :
✓ Team leaders

Team leaders:
Rana Barasain
Faisal Alrabaii

Please if you need anything or even further explanation contact us on :

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