

Histology Practical

Histology of blood vessels



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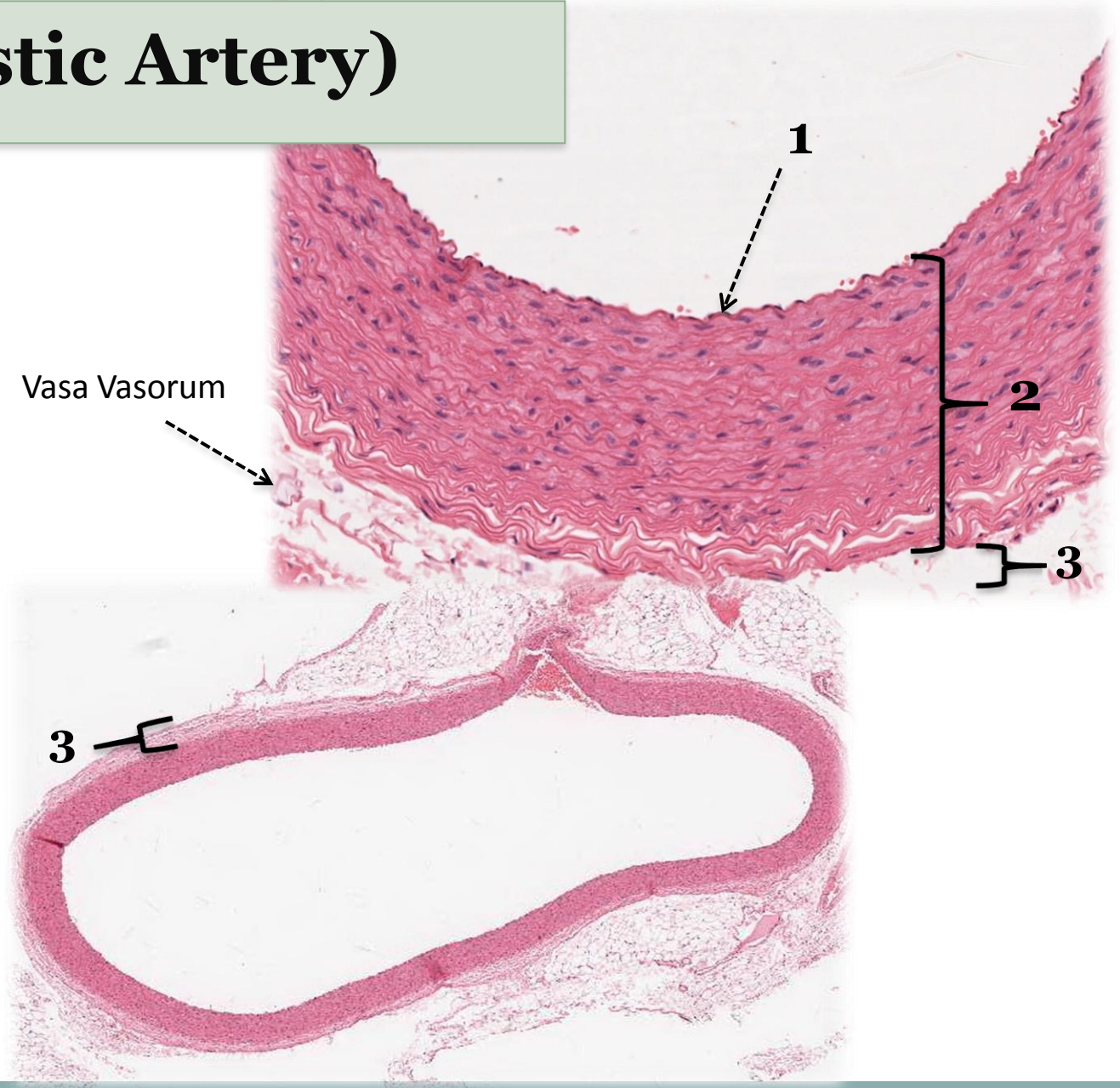
Reviewed by :
Wael Al Saleh

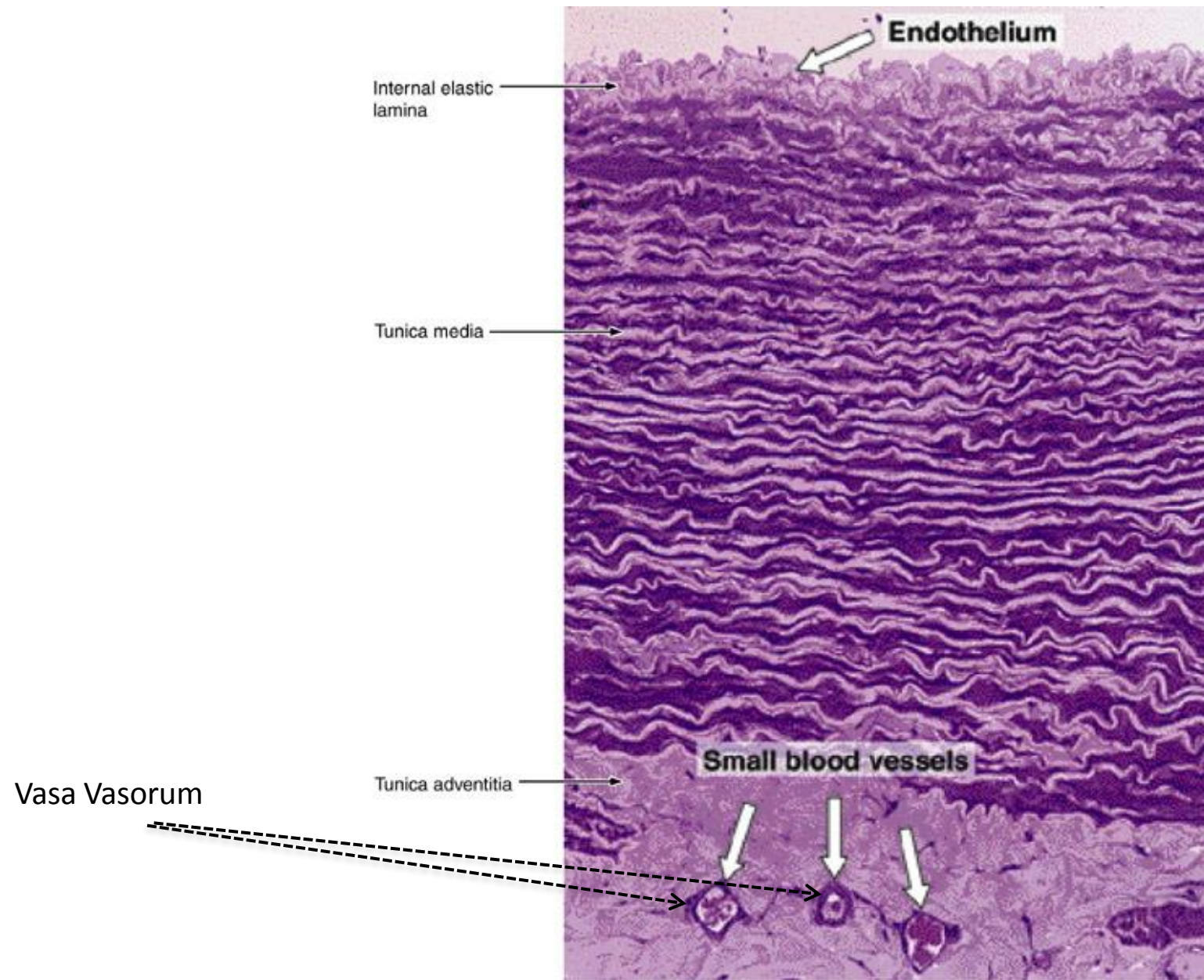
Please send us any questions or mistakes on : 432histologyteam@gmail.com

Aorta (Elastic Artery)

Features

- **The wall of blood vessel is formed of three layers:**
 1. Tunica intima
 2. Tunica media
 3. Tunica adventitia
- **Other clear features :**
 - Fenestrated elastic lamellae (membranes) in the media
 - Smooth muscle cells in media.
 - Elastic fibers in media.
 - Adventitia contains vasa vasorum
 - Adventitia thinner than media
 - loose C.T in adventitia
 - The internal elastic lamina in the T. Intima and the external elastic lamina between the T. Media and T. Adventitia are not prominent



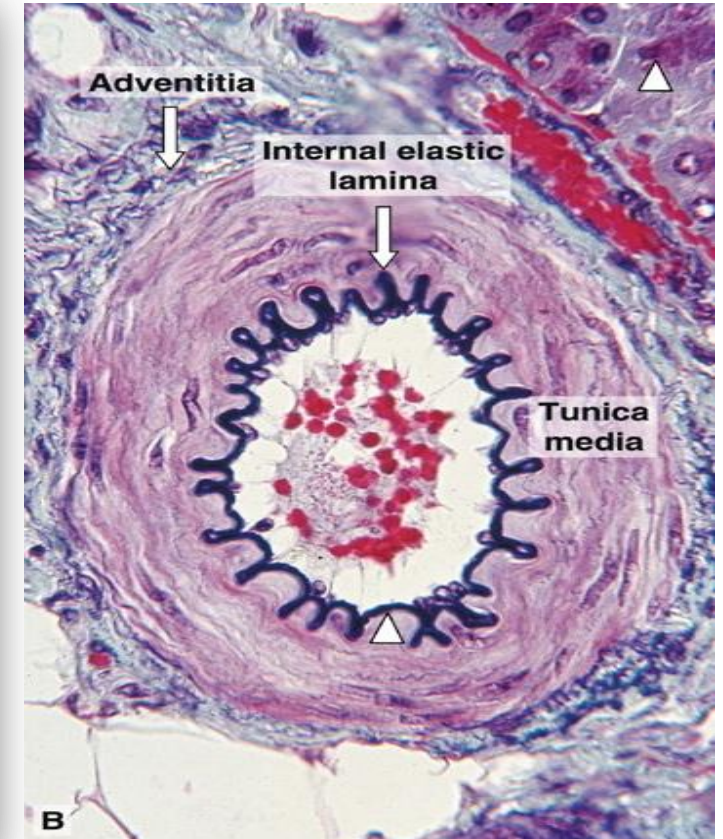
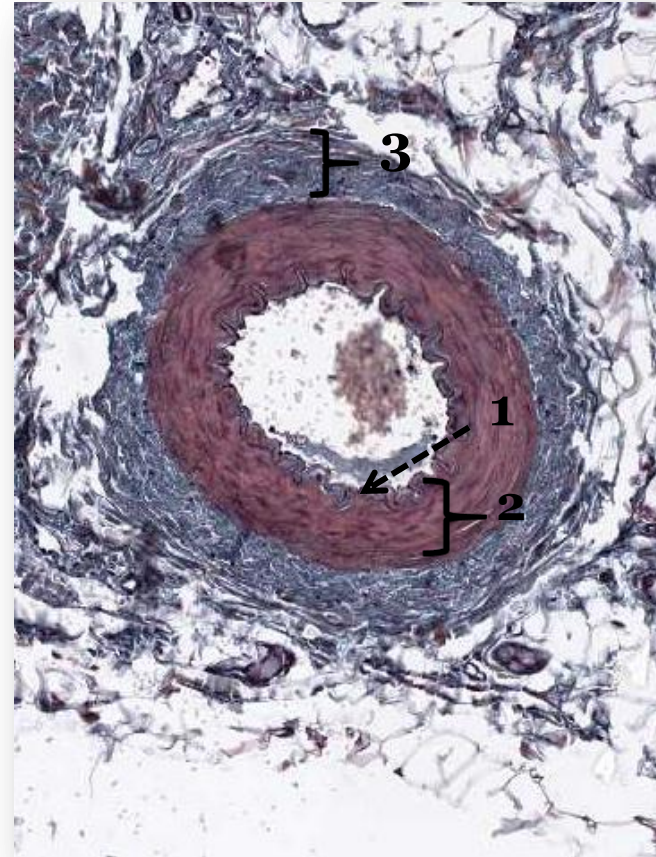


Medium-Sized Muscular Artery

We know it's a medium-sized and not large muscular artery because there is no external elastic lamina

Features of artery :

- The wall of artery is formed of three layers:
 1. Tunica intima
 2. Tunica media
 3. Tunica adventitia
- Other **clear** features :
 - **Prominent** internal elastic lamina
 - **T. Media is rich in smooth muscle cells.**
 - Elastic fibers in T. media.
 - Media Thicker than Adventitia
 - loose C.T in adventitia



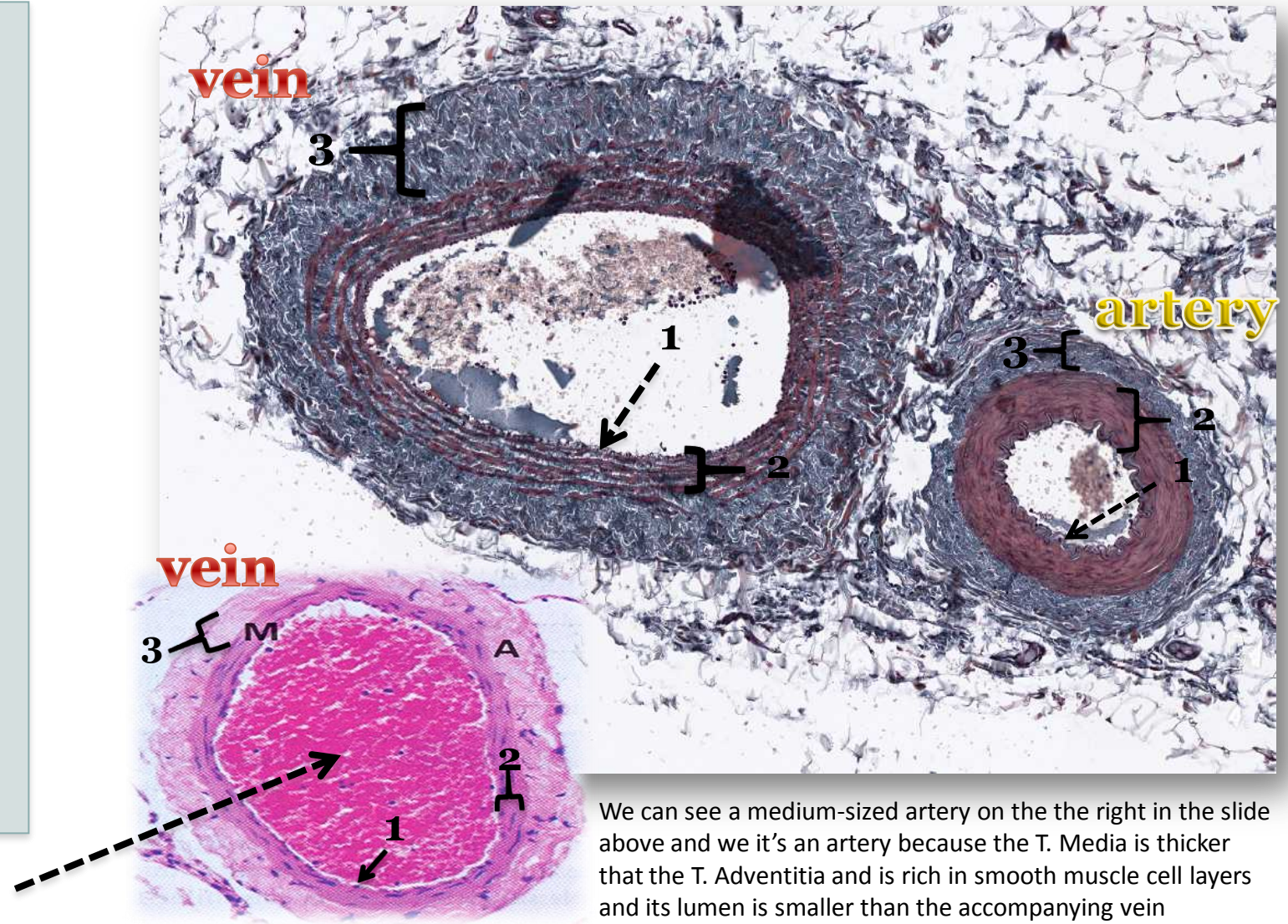
You can see the prominent internal elastic lamina

Medium-Sized Vein

Features of vein :

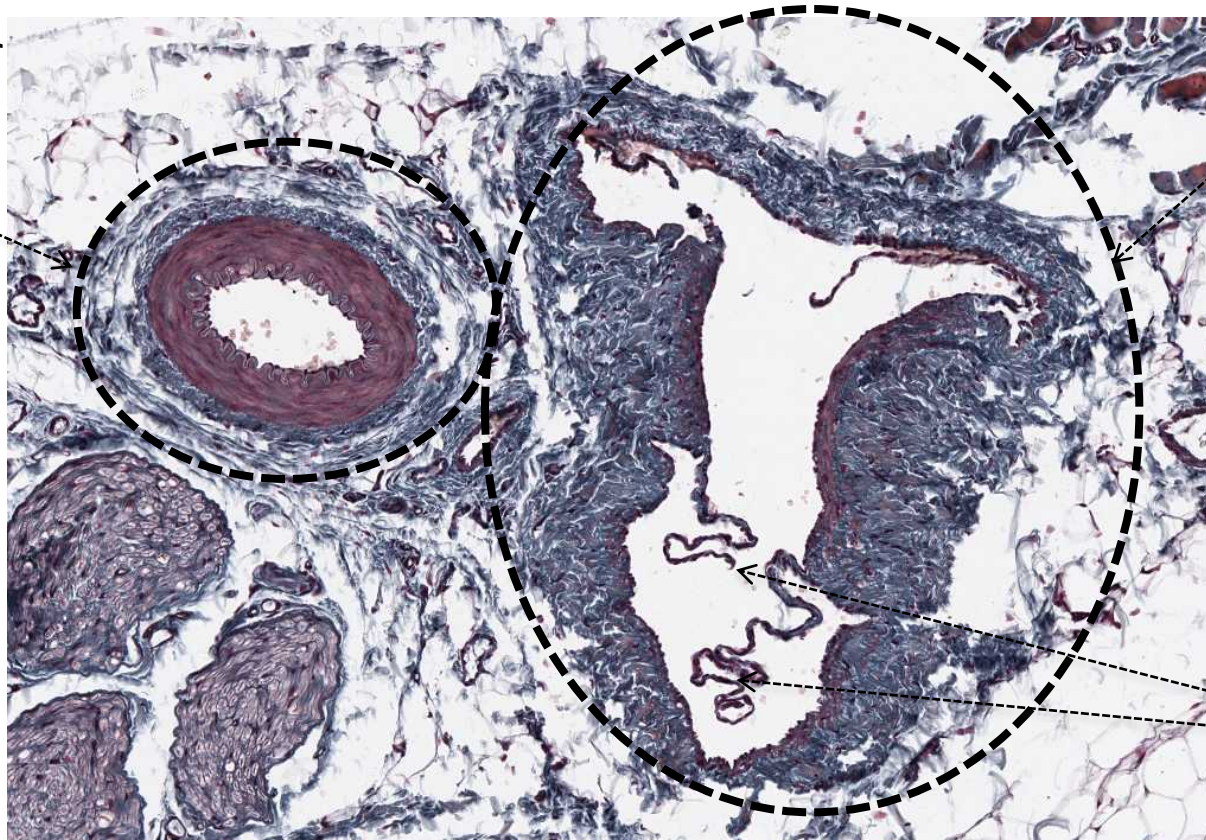
- **The wall of vein is formed of three layers:**
 1. Tunica intima
 2. Tunica media
 3. Tunica adventitia
- **Other clear features :**
 - **NO** internal elastic lamina
 - Few smooth muscle cells in T. media.
 - Types I & III Collagen fibers in T. media.
 - T. Adventitia thicker than T. media.
 - T. Intima folds forming valves

In the slides of veins the lumen often contains stagnant blood (to help you identify it)



We can see a medium-sized artery on the the right in the slide above and we it's an artery because the T. Media is thicker that the T. Adventitia and is rich in smooth muscle cell layers and its lumen is smaller than the accompanying vein

Medium-sized muscular artery



Medium-sized vein

Valves of vein
(Formed by an extension of the T. intima)

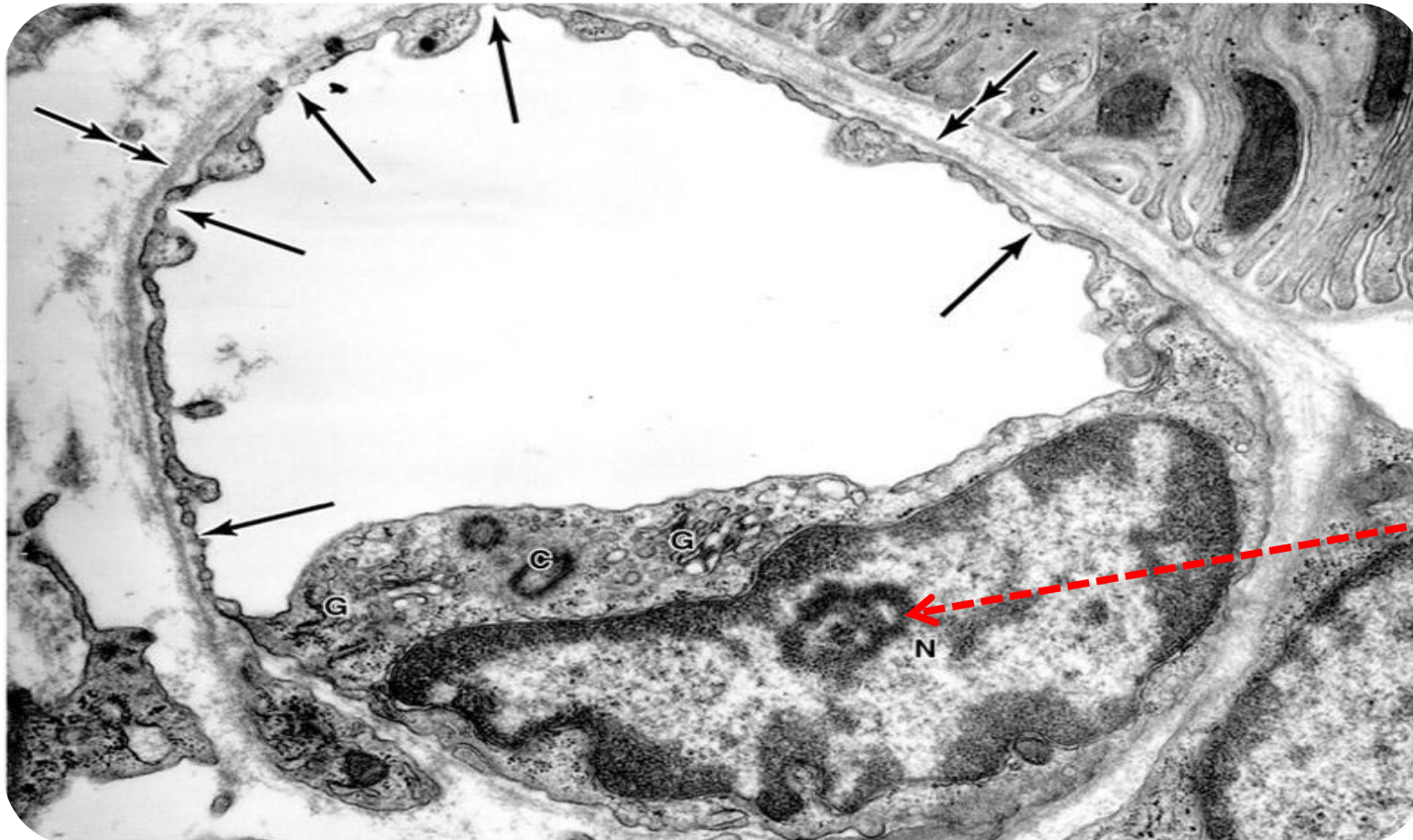
Fenestrated Blood Capillaries with Diaphragms

No need to write
"with diaphragms"

- In intestine, pancreas
- In endocrine glands

* Single arrow :
Fenestrae .

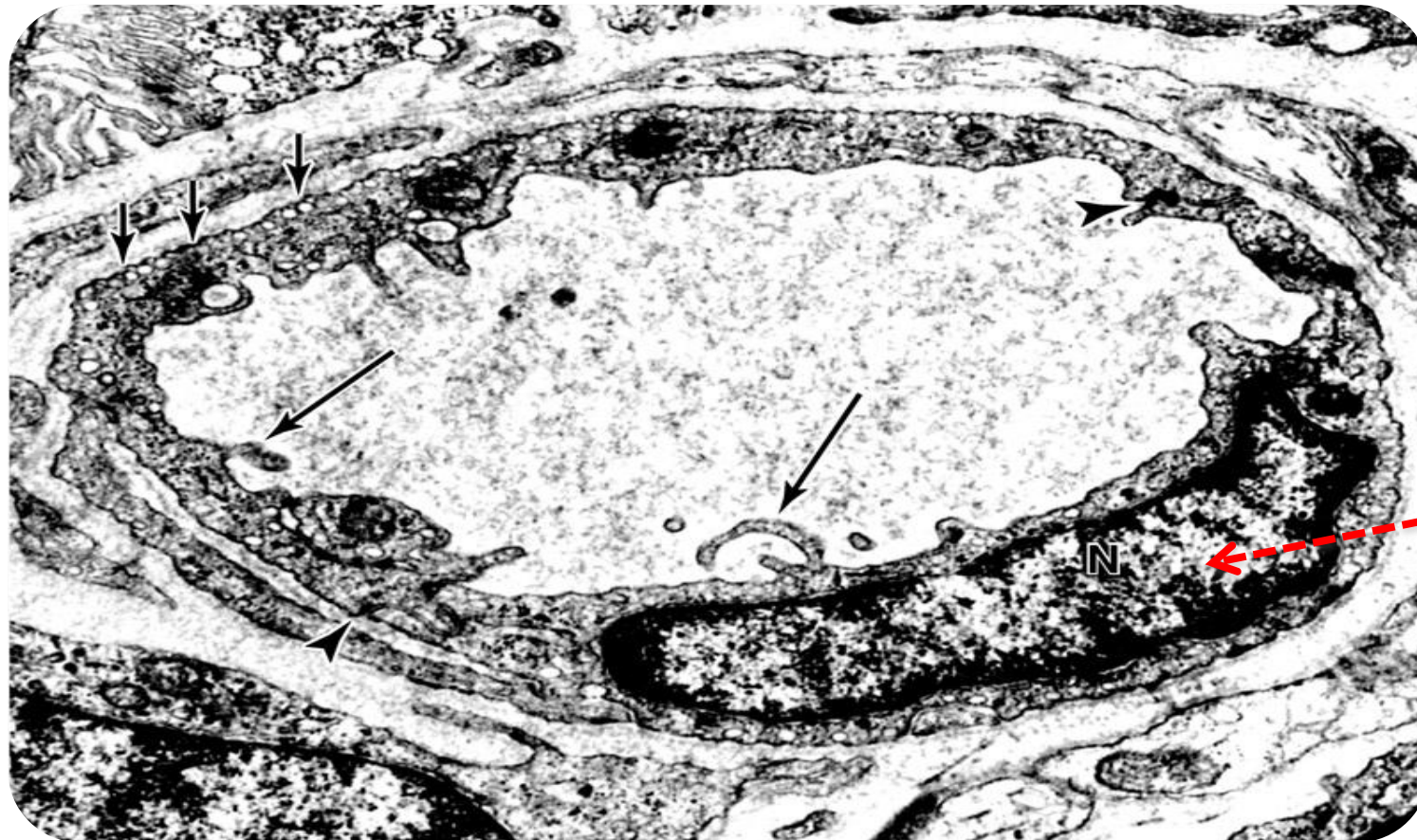
* Double arrow
is basal lamina
but not
important .



Nucleus of the
endothelial cell

Continuous Blood Capillaries

- No pores or fenestrae in walls
- In muscles , nervous



Nucleus of the
endothelial cell

Notes

- The internal elastic lamina is found in all arteries but is absent in veins
- The external elastic lamina is found in elastic arteries and large muscular arteries only and is absent in smaller arteries and in all veins
- The T. Media is thicker than the T. Adventitia in arteries
- The T. Adventitia is thicker than the T. Media in veins
- All arteries and vein contain vasa vasorum (especially veins)