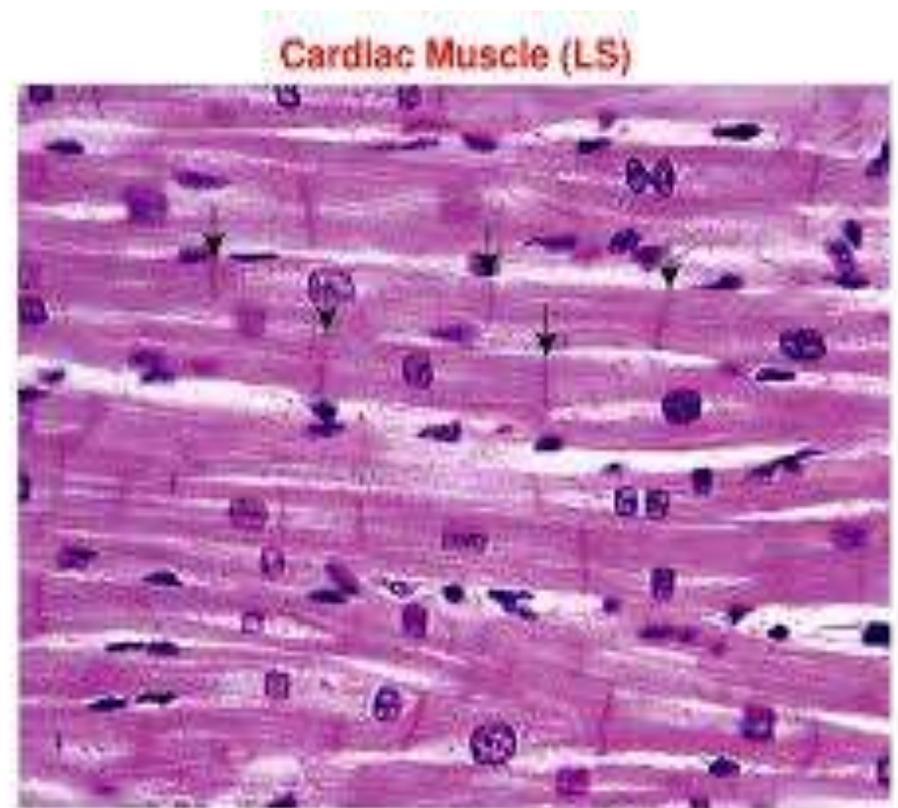
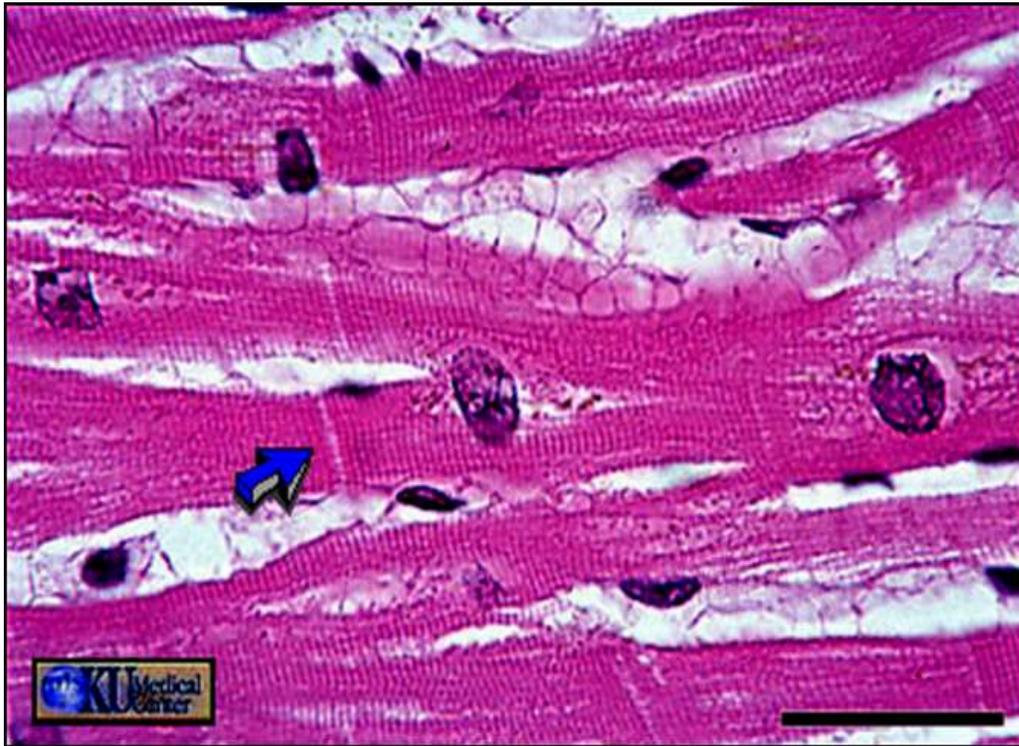


Practical CVS

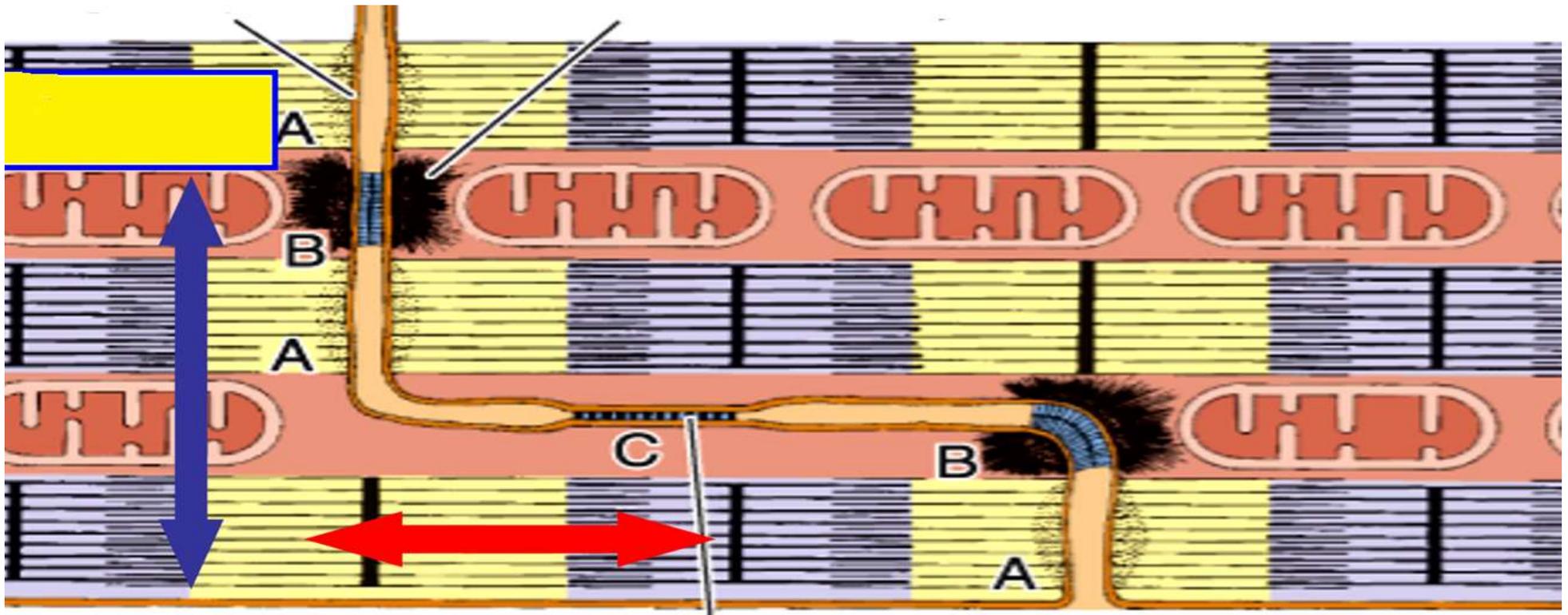
Cardiac muscle



LM:

- Shorter than skeletal muscle
- Cylindrical in shape
- Branched. Striated.
- Has one nucleus in the center of the cell.
- Adjacent cells are interconnected end-to-end by **intercalated discs**.

Intercalated discs



□ Intercalated discs

➤ **Transverse Part:**

- zonula (fasciae) adherents
- desmosomes (macula adherentes)

prevent the cells from pulling apart under the strain of contraction

➤ **Lateral Part:**

- **Gap junctions (nexus)** - for **impulse transfer** providing ionic continuity between adjacent myocytes (**electrical communication** between cardiac muscle cells)

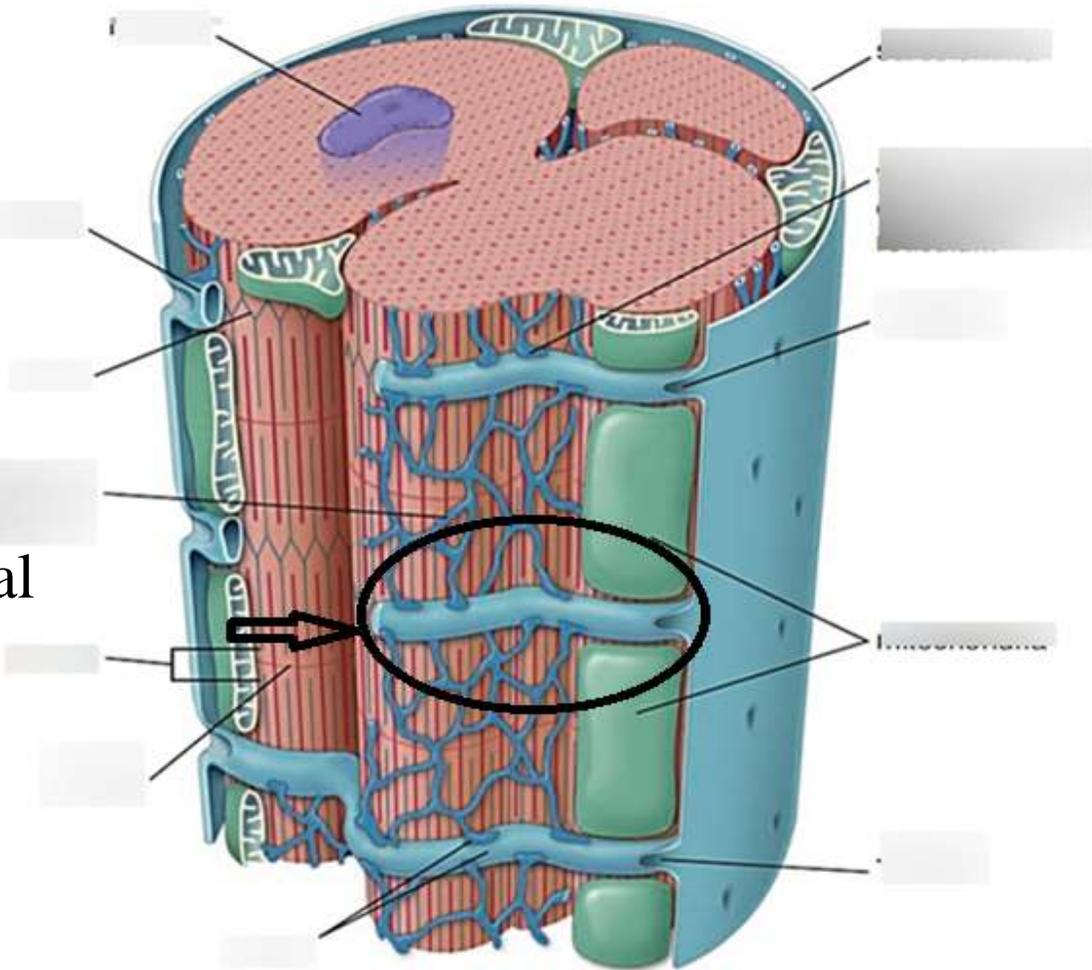
Diad in cardiac muscle at **Z- line**

□ **T- tubules :**

- Larger than those in skeletal m
- At Z –line instead of A-I Junction in skeletal M

□ **Sarcoplasmic reticulum :**

- **Not** well developed as in skeletal m
- Irregular and narrow with no terminal cisternae this arrangement is known as **diads**
- **In skeletal m at A-I junction called triad**



Purkinje fibers

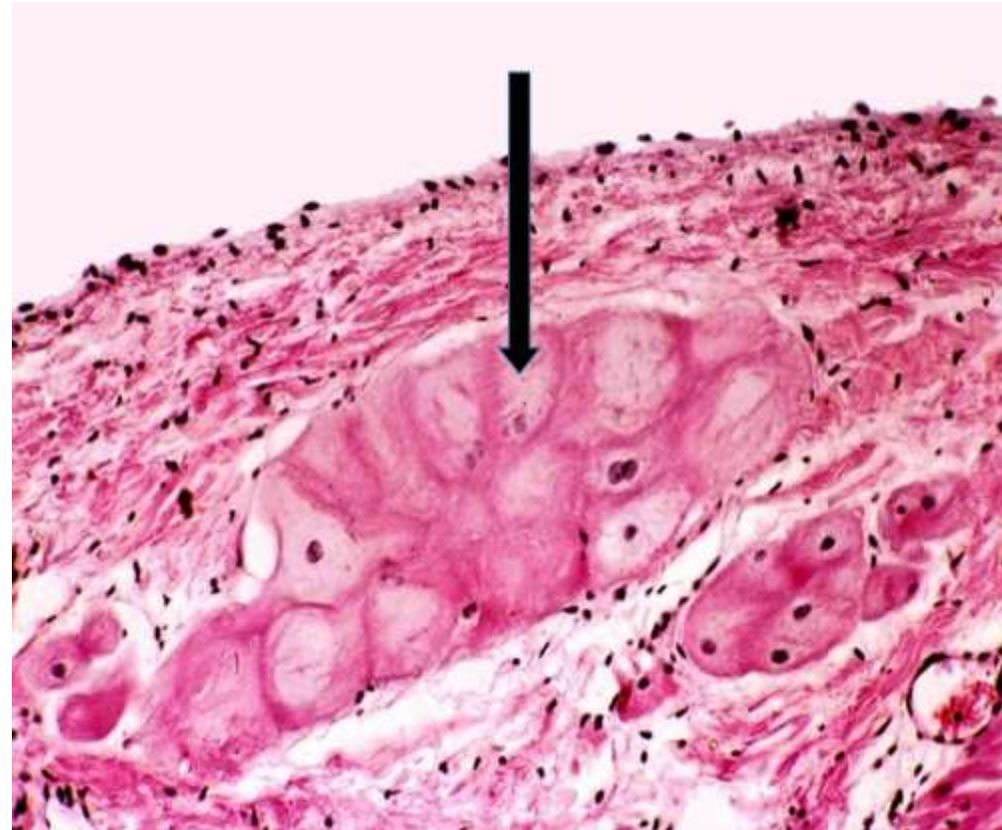
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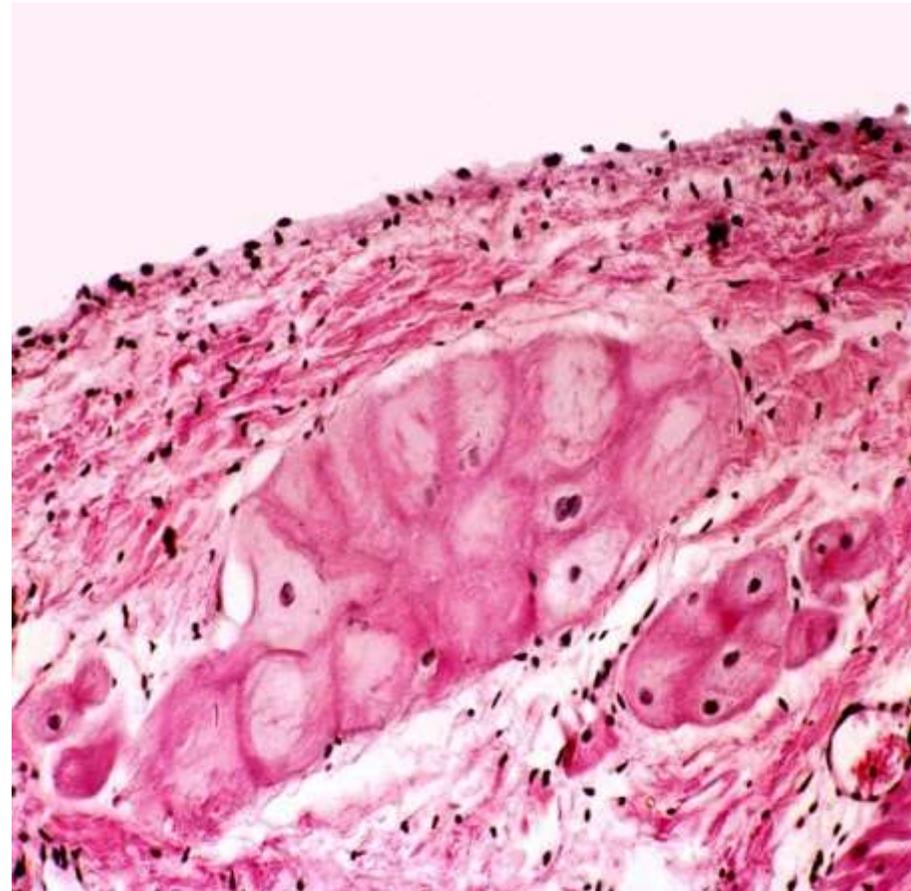
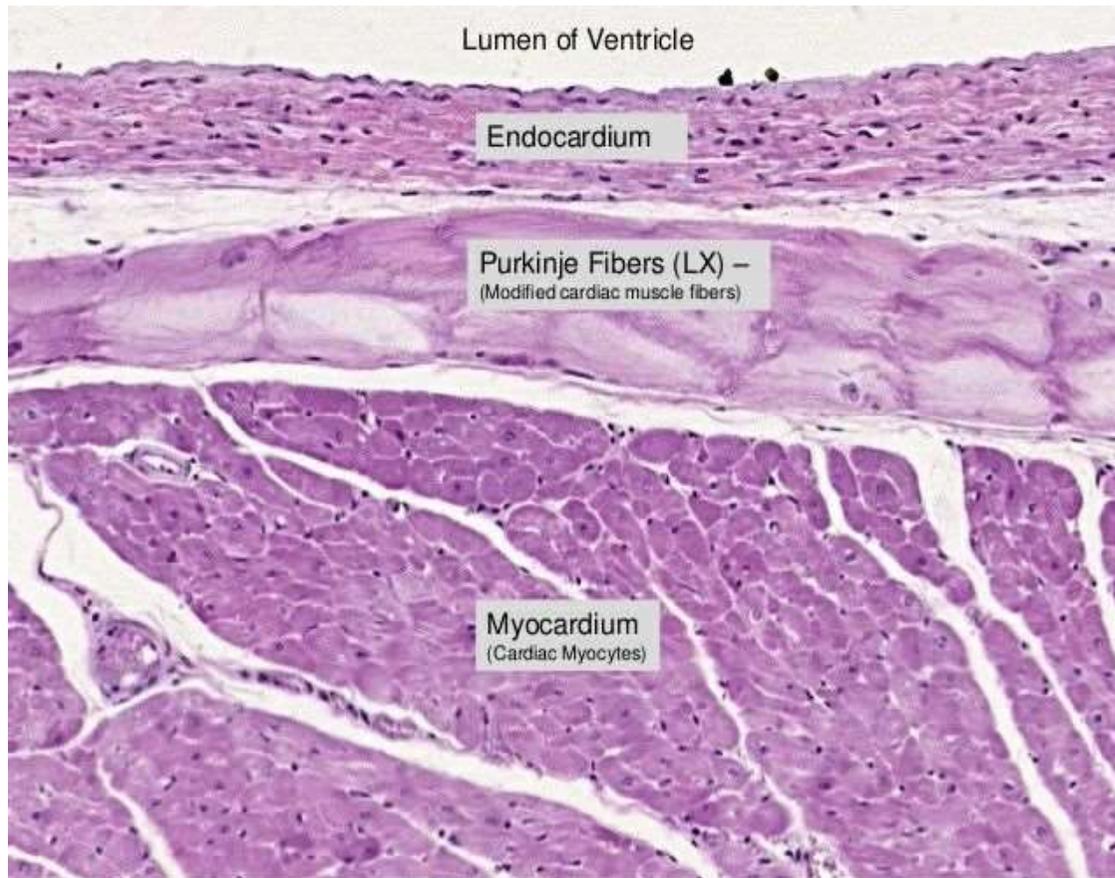
❑ Subendocardium.

- ❑ Present in group **2 or more**
- ❑ They are often binucleated cells.
- ❑ Purkinje fibers are shorter, larger, **pale** .
- ❑ They are **larger** than cardiomyocytes with **fewer myofibrils** at the periphery and many mitochondria.
- ❑ Purkinje fibers take up stain differently from the surrounding muscle cells because of having relatively **fewer myofibrils** than other cardiac cells.
- ❑ The presence of **glycogen** around the nucleus causes
- ❑ **Not** contain T- tubules or **intercalated discs**

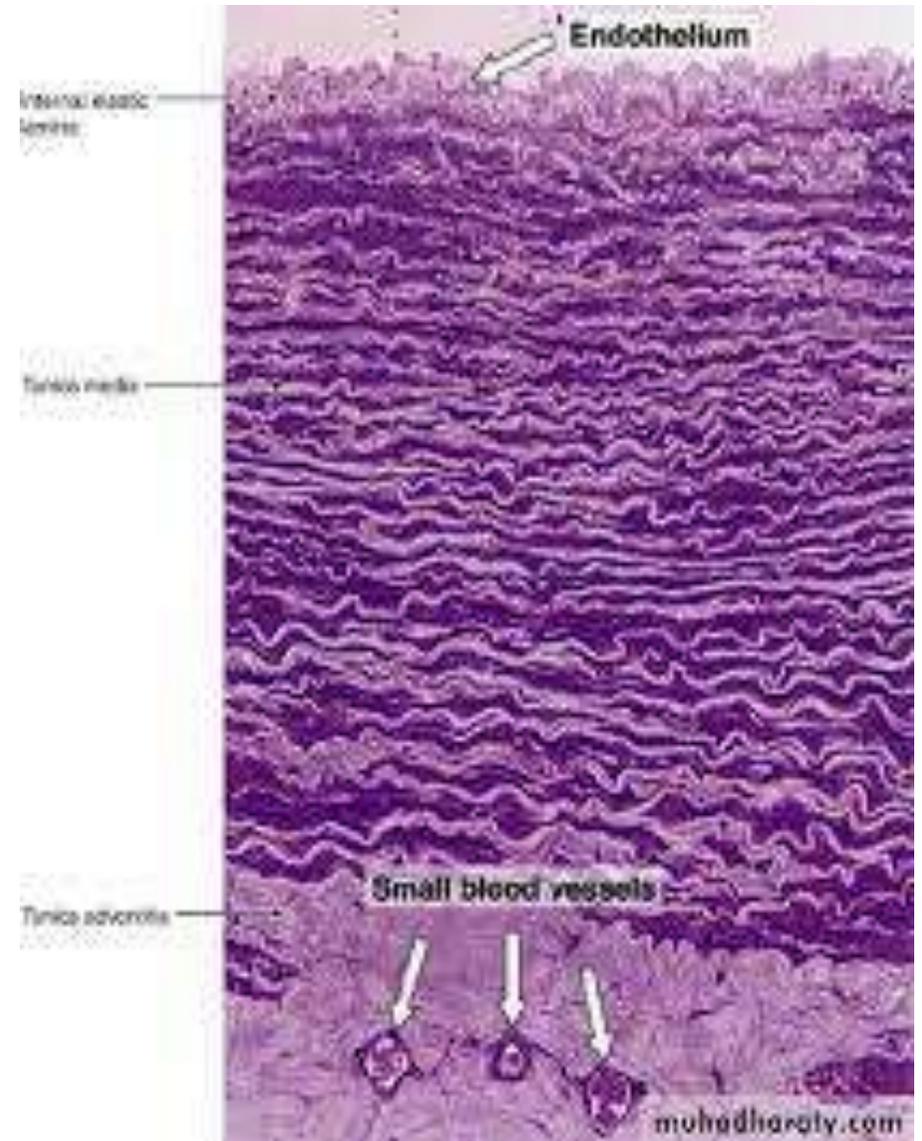
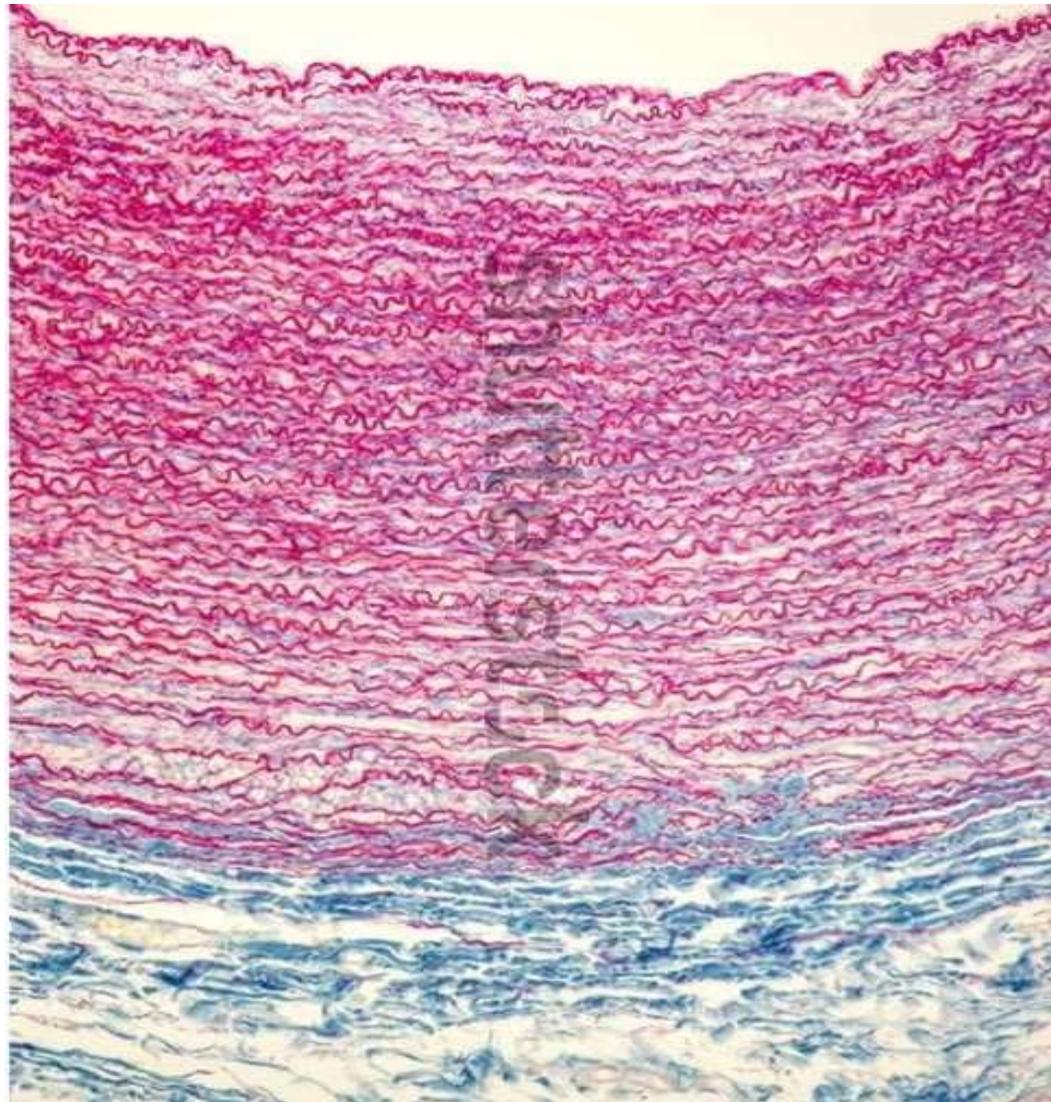
Function :

- ❑ They conduct cardiac action potentials **more quickly** than any other cells in the heart.

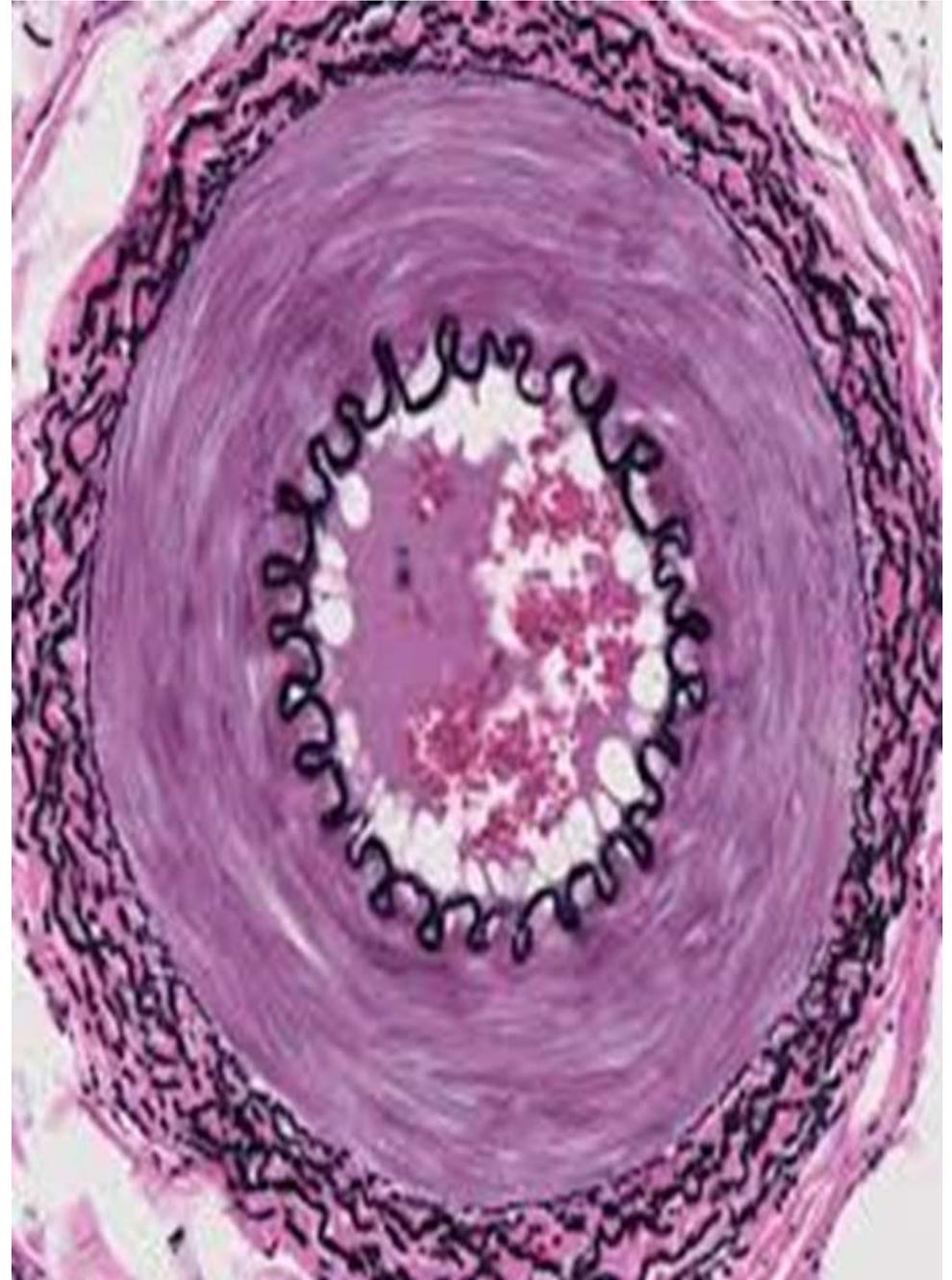
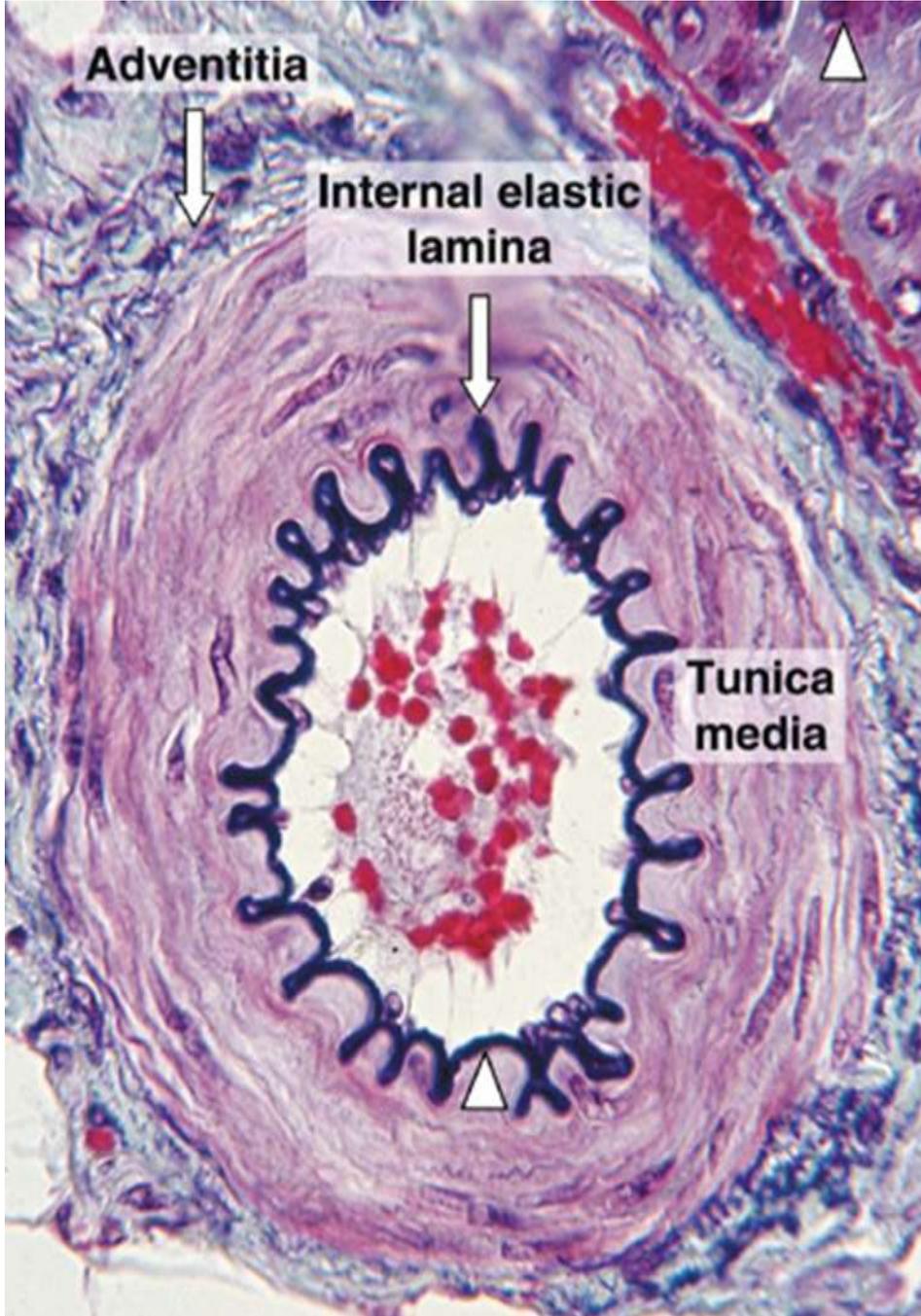




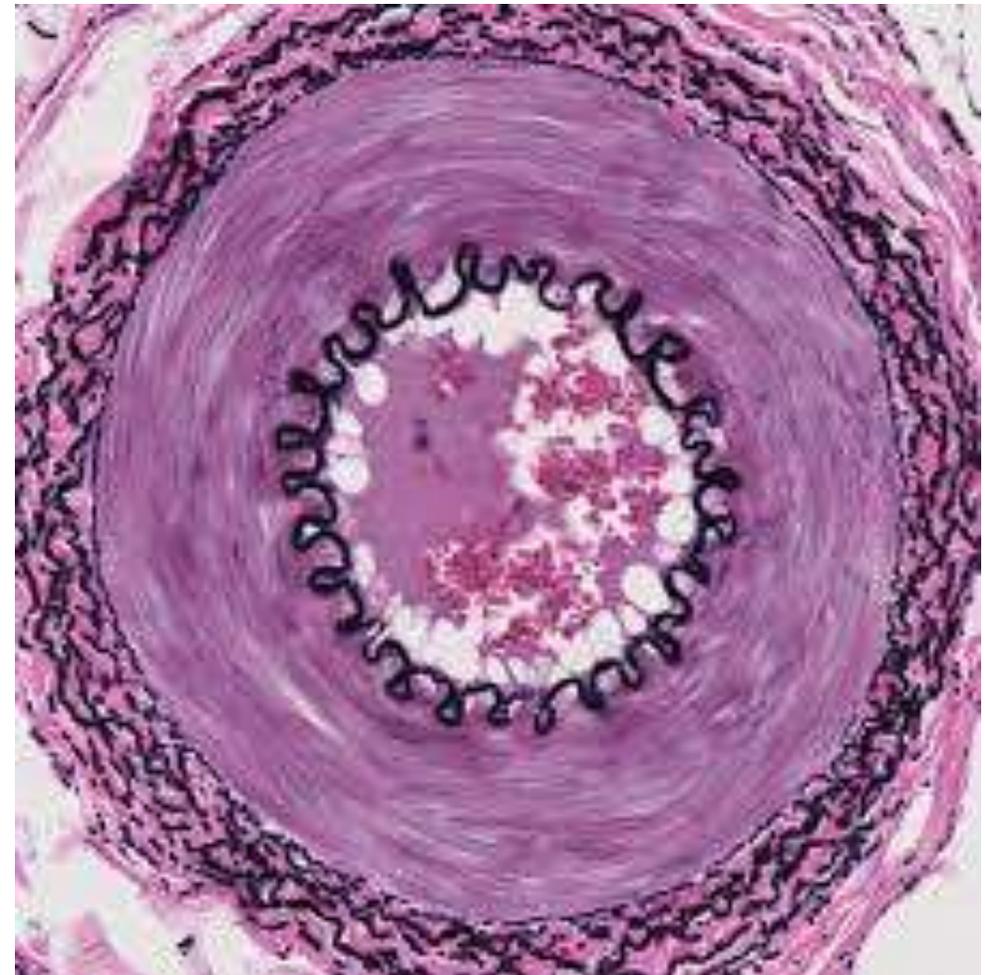
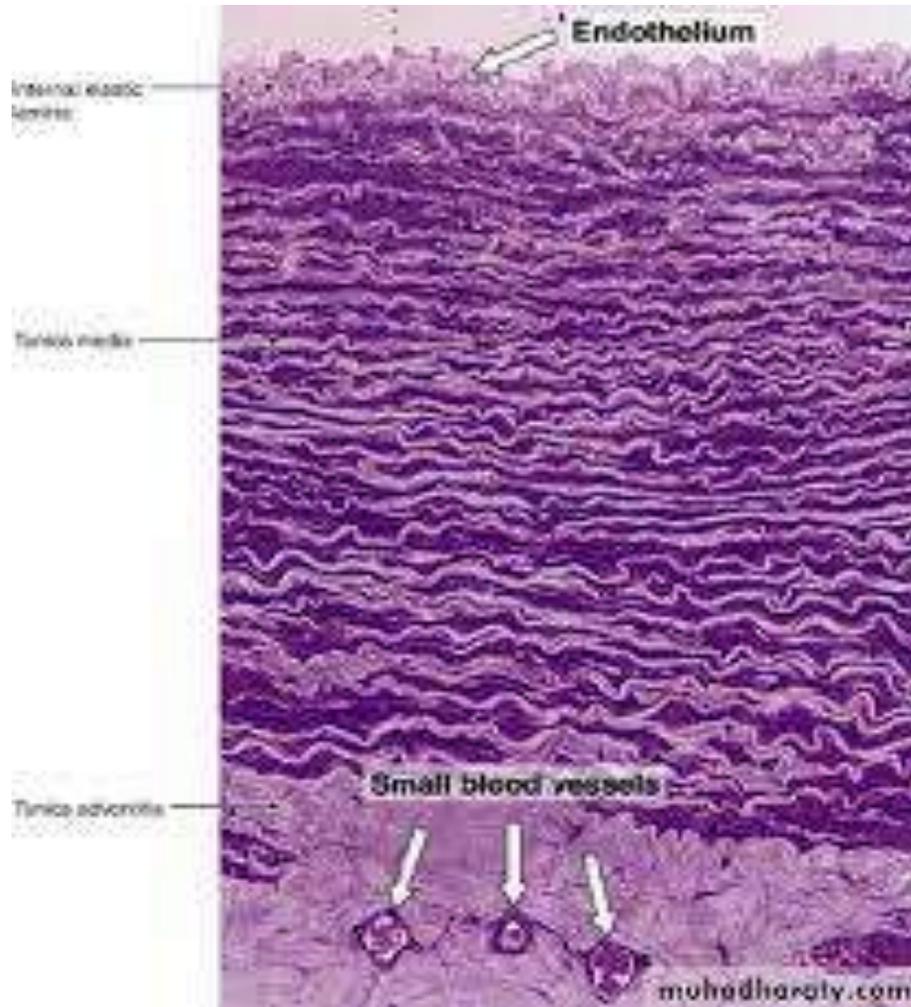
Conducting or Elastic Arteries

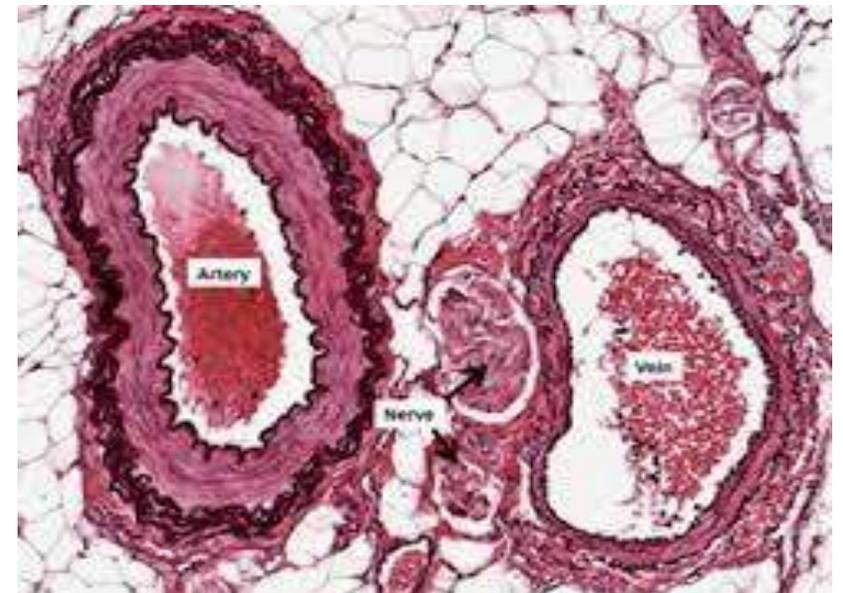
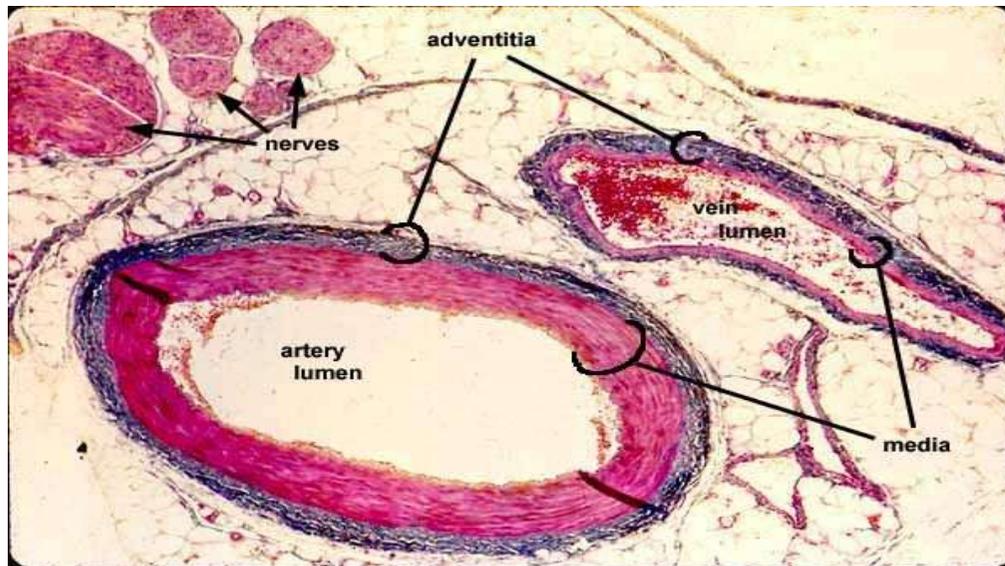
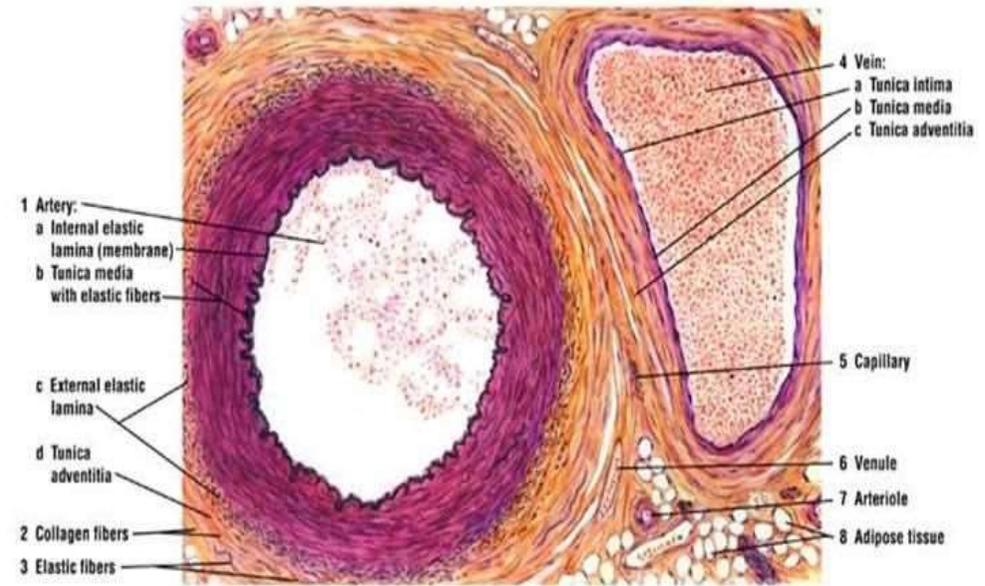
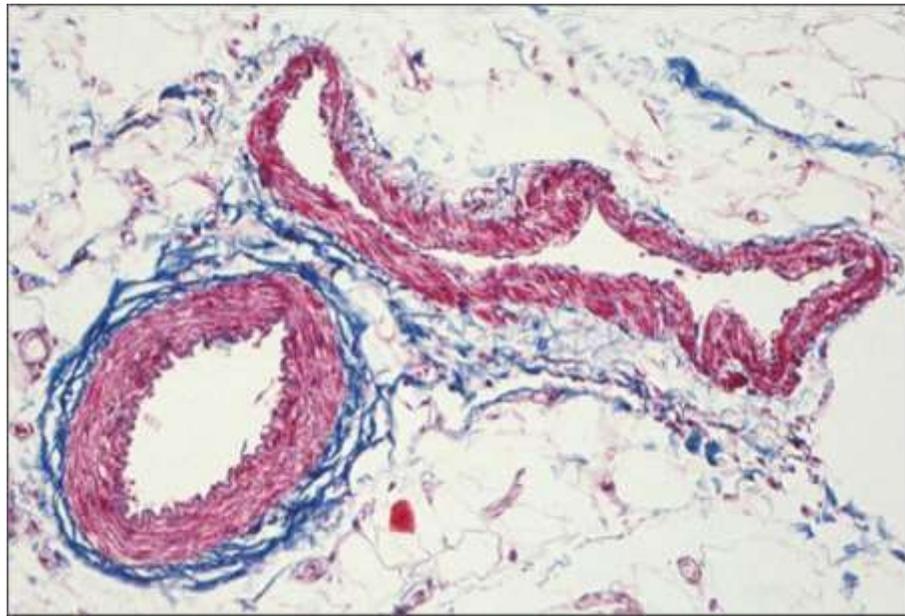


Medium size artery = muscular artery

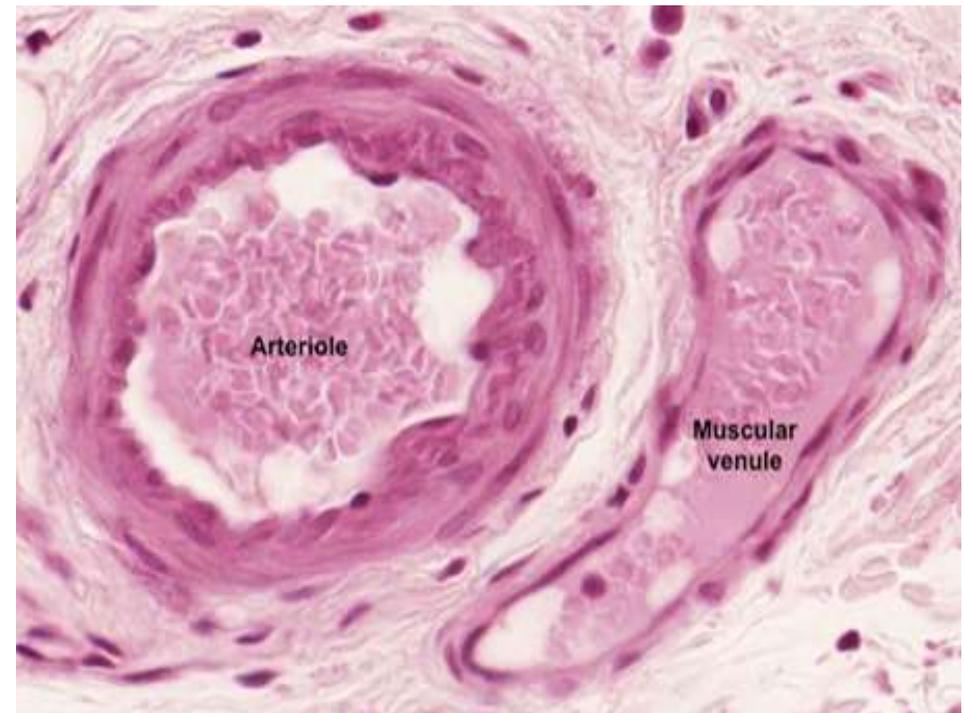
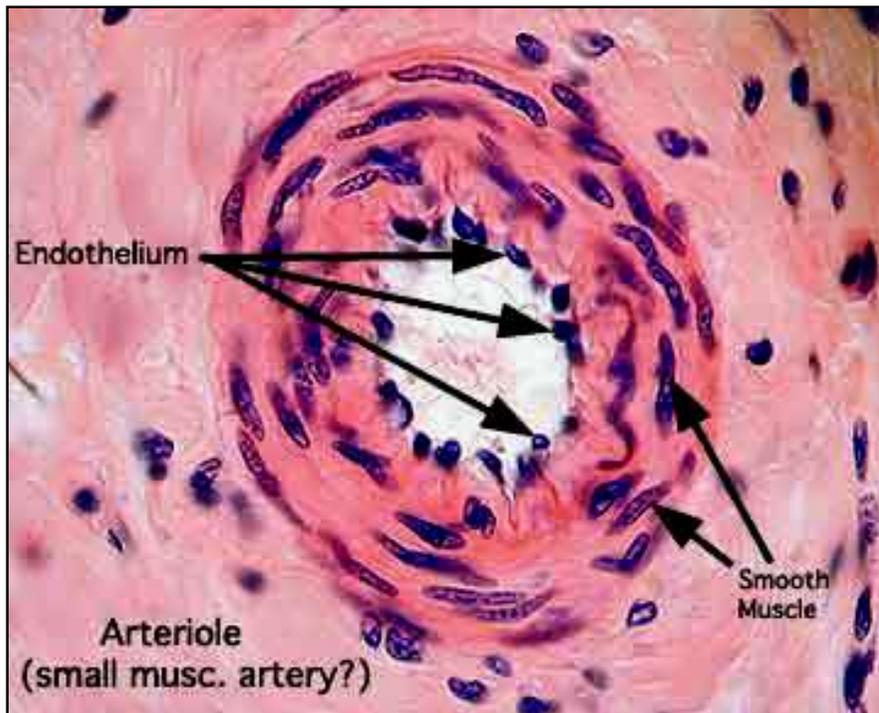


Large & medium size arteries





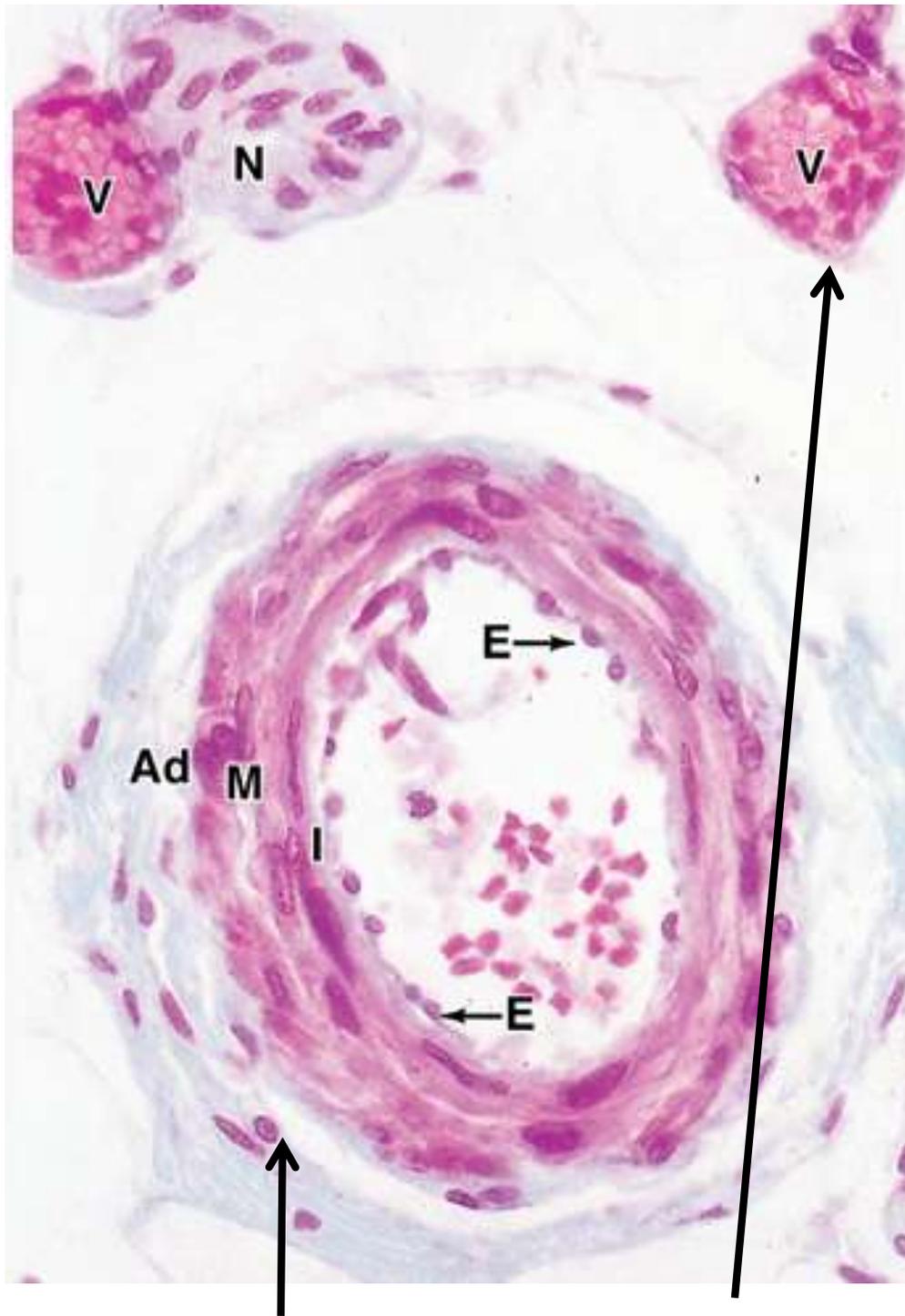
Arteriole



Tunica intima is smaller with **endothelium** and internal elastic lamina which may be **incomplete** and (absent in small and terminal arteriole but present in large arterioles)

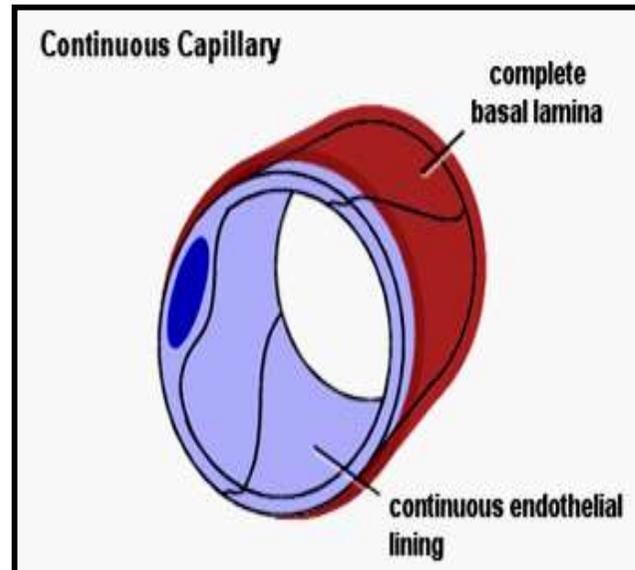
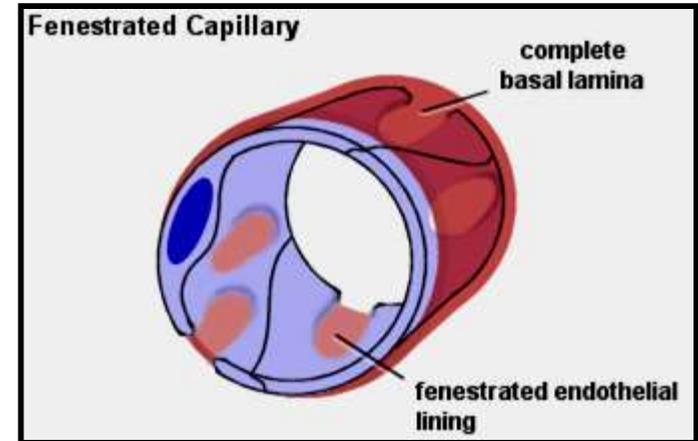
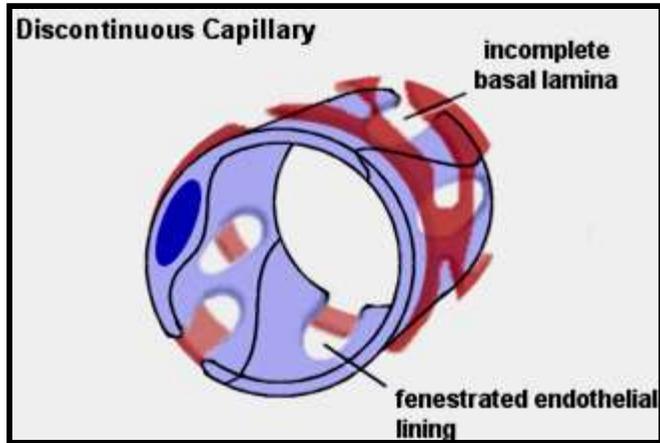
Tunica media is made up of **circular smooth muscles** i.e. single smooth muscle layer in small arterioles; **2-4 layers in large arterioles**

Tunica adventitia possesses **autonomic** nerve fibres to control the size of the lumen which is responsible **peripheral resistance** necessary to control arterial **blood pressure**

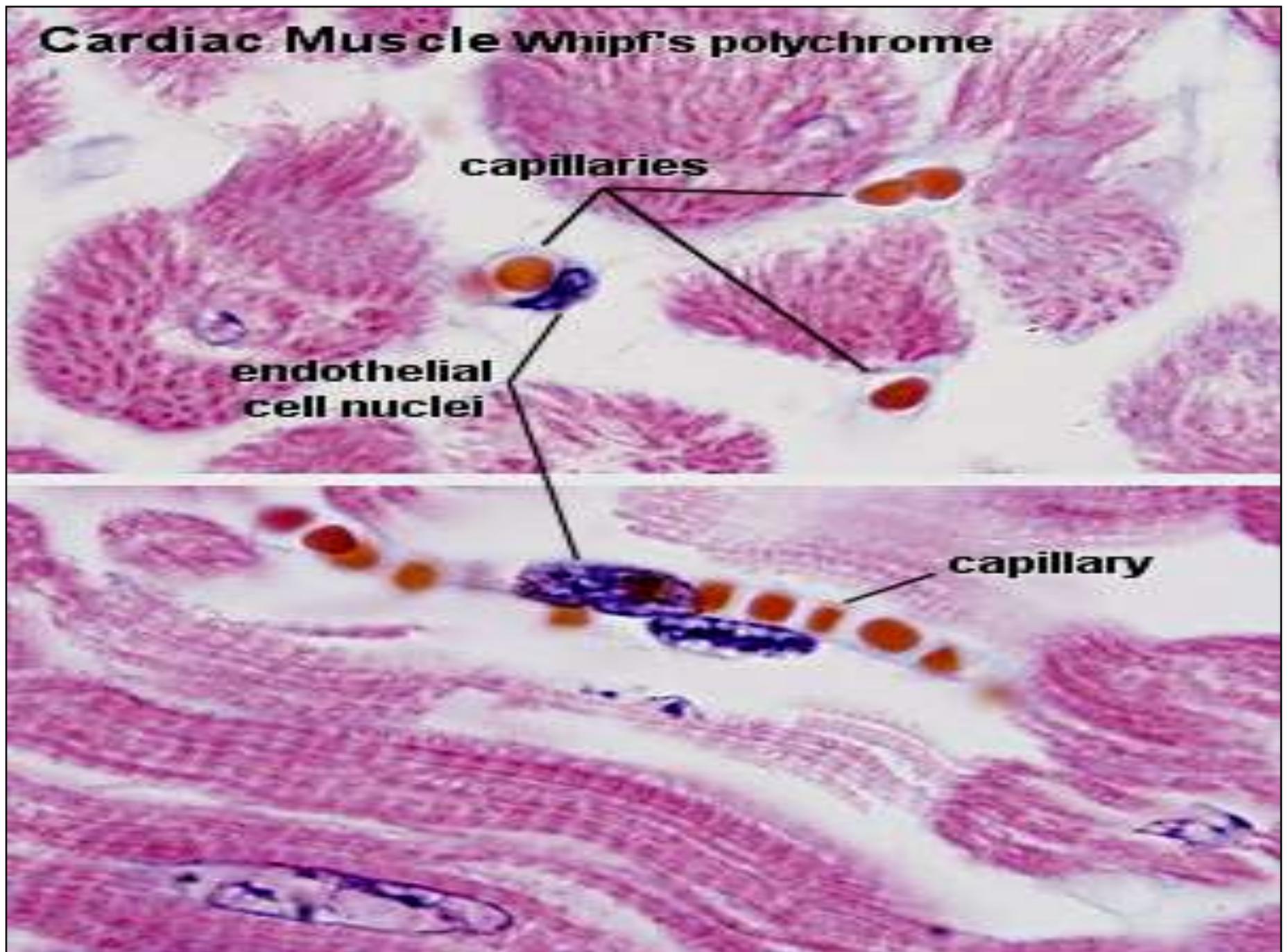


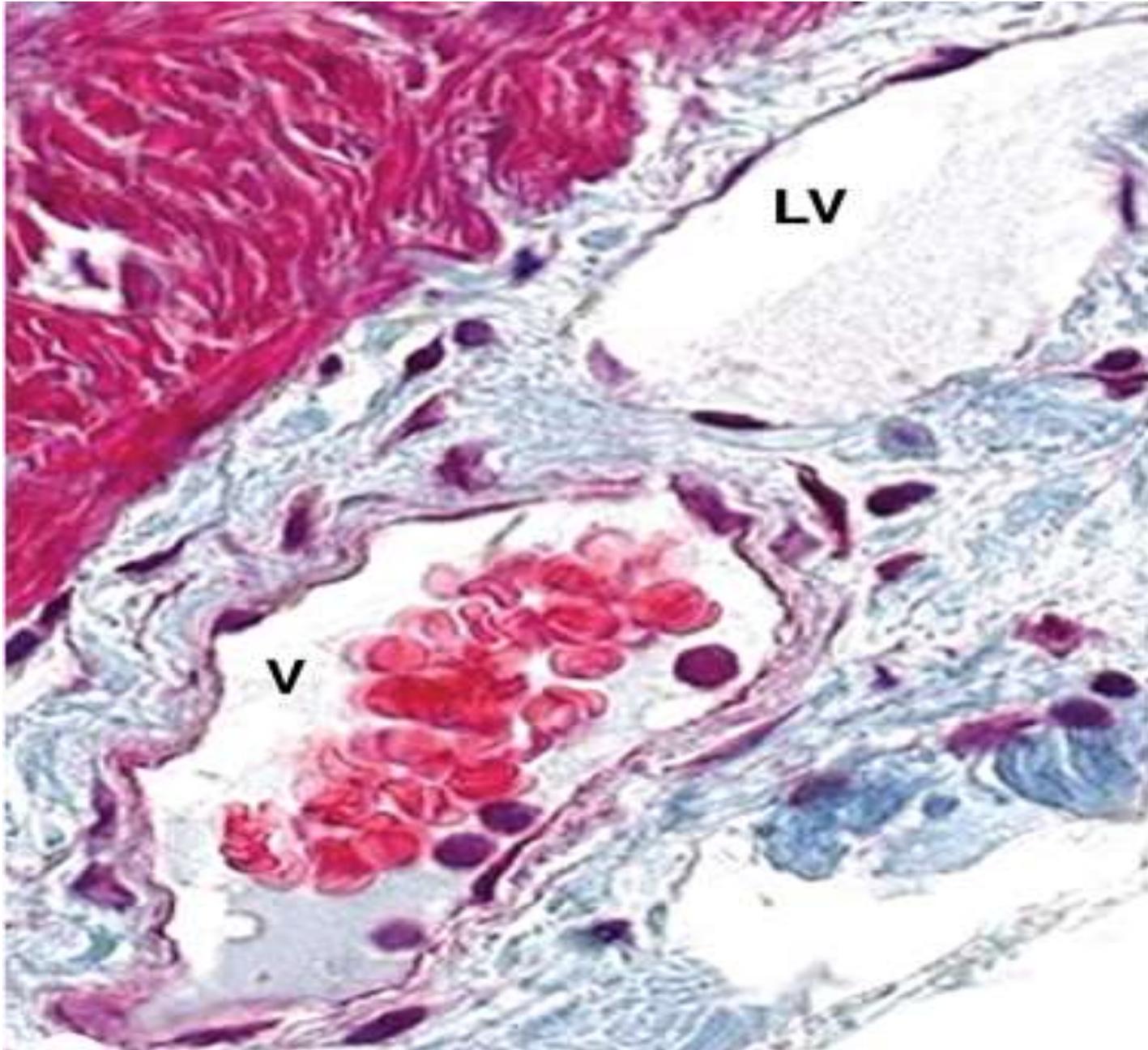
Arterioles and venules

Types of capillaries



Cardiac Muscle Whipf's polychrome





Venule and lymphatic vessel