Anatomy of Blood Vessels

Introduction

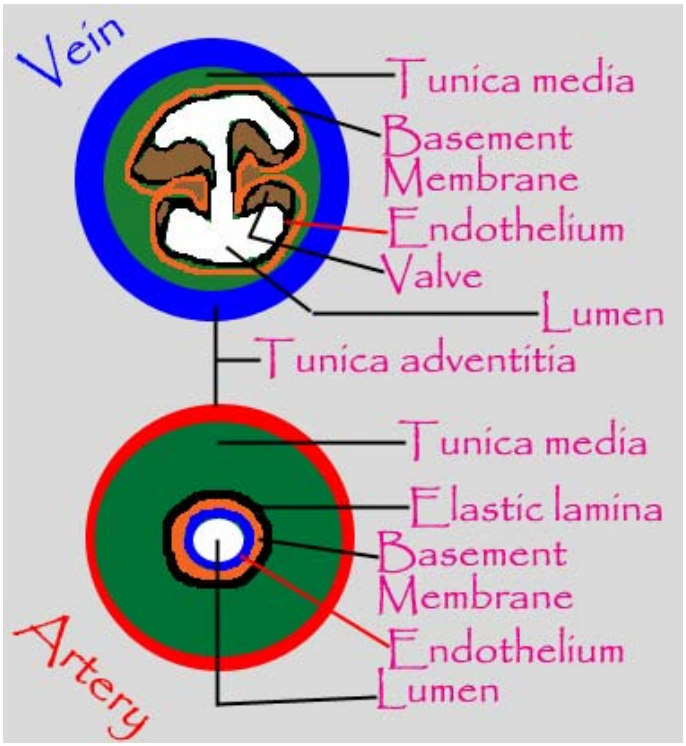
The anatomy of blood vessels helps to explain the functions/activities of these vessels. With only minor alterations, e.g., the elastic lamina in arteries and the valves in veins, there are, essentially, three (3) major layers about the arteries (thicker in general) and veins (thinner in general) called tunica (coats).

The tunica intima, aka the endothelium is the inner-most layer in arteries and veins. This tunica is a single layer of endothelium continuous with the endocardium. It is a smooth layer. In veins, this layer gives rise to the valves (endopthelial extensions); in capillaries, this is the only layer present.

The tunica media is thicker than the tunica intima. It is primarily smooth muscle and is heavier in arteries than in veins. In larger arteries, this tunica makes them more elastic and in smaller arteries, makes them more muscular.

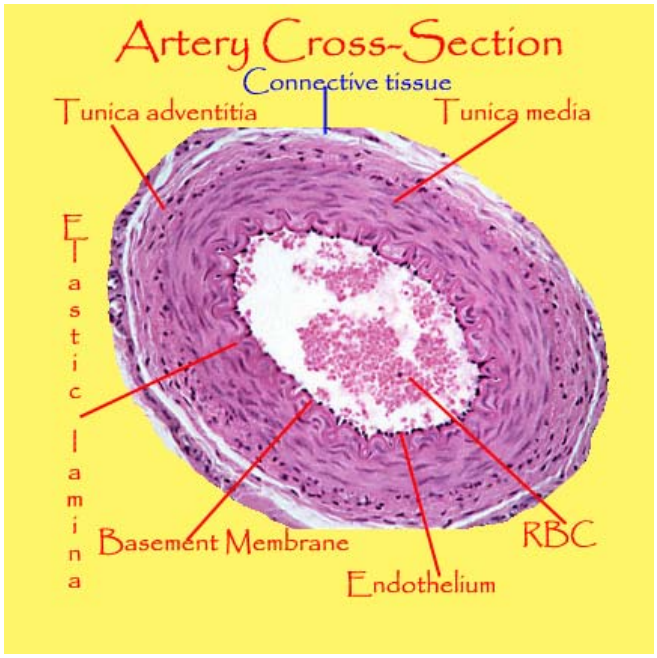
The outermost layer is the tunica adventitia. This is areolar or fibrous connective tissue (f.c.t.). It is primarily supportive and protective. This layer is thicker in veins than in arteries.

Shown below are several graphics illustrating these tunics. The first is a graphic rendition:

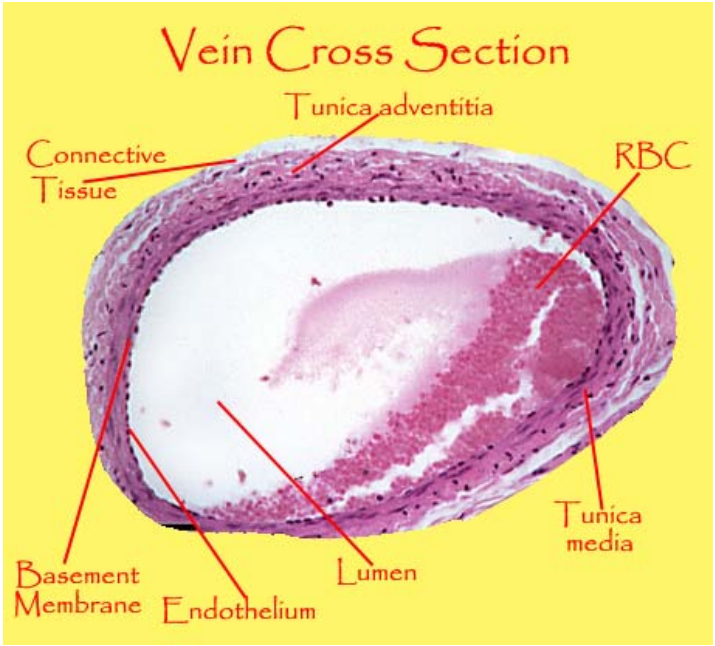


The valves assist in the return of blood to the heart. When these valves are "defeated", bulges develop in veins and are called varicosities.

The next graphic is a modified micrograph of a cross section of an artery:



The last illustration is a cross section of a vein – modified a bit:



Experimental

Obtain a microscope slide of an artery and vein. Draw what you see and label it in the boxes, below:

Microscopic view of artery	Microscopic view of vein