

## **SOME PECULIARITIES OF VALVULAR STRUCTURE IN VARICOSE VEINS**

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Changes of valvular apparatus of lower limb veins are widely discussed in the development of essential varicosis. However, morphological alterations of valves with this disease are not completely clarified yet (1-4). We study some morphological peculiarities of valvular cusps from surgically removed great saphenous vein (GSV) with essential lower limb varicosis from 20 patients without data about previous thrombophlebitis. Routine histologic and electron-

microscopic techniques have been applied. Venous valves without varicose alterations have been used as controls. In primary varicose GSV, its valvular cusps are often irregularly thick - they thicken at some places but become thinner at other ones. In thickened areas, there is connective tissue enlargement, either across the whole thickness of the cusp, or between endothelium covering the axial surface of the cusp and the elastic membrane. In the first case, collagen fibres grow-up and elastic ones lose their regular order thus seeming fragmented while in the second case, there is a subendothelial connective



*Fig. 1. Histological section of valvular cusp with irregular thickness; orcein; oc. 10; ob. 20*

tissue enlargement without elastic fibres in it. There is an alternating order of thickened and thinned areas of the cusp: when the thinning is strongly manifested the parietal connective tissue is correspondingly reduced. While in individuals without any varicosis crypt depth does not overcome the half of cusp thickness, in varicose veins cryp-

tes are deeper and can even penetrate up to the elastic membrane (fig. 1). On both luminal and basal endothelial surfaces numerous micropinocytotic vesicles can be seen. Micropinocytotic vesicles can fuse mainly in extranuclear regions thus forming transcellular channels. Some cisterns of rough endoplasmic reticulum are dilated and filled-up with a content of low electron density. Vacuoles of different size and irregular shape which can become confluent can be seen, too. At some places, Weibel-Palade's bodies sometimes in the immediate vicinity of the above described vacuoles are observed. Endothelial cell cytoskeleton is strongly-developed in peri- and extranuclear regions as well.



*Fig. 2. Endothelial cell from valvular cusp. TEM, x 20 000*

It is built-up by numerous bundle-forming intermediate filaments and by microtubules (fig. 2). Changes of valvular cusp depth are interpreted as an important alteration setting in in venous valves with essential varicosis (1). Lesions of valvular cusp cryptes are of particular interest as due to them the cusp can become critically thin, indeed. Ultrastructural alterations of endothelial cells in varicose veins demonstrate a strong development of cytoskeleton and organelle complex related to transendothelial transport and to synthetic intracellular processes. Their more comprehensive interpretation can be done only if one considers fine-structural peculiarities of the rest cellular and tissue components of the valvular cusp, too.

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