

INTRAPROSTATIC LYMPHATIC VESSELS: NEGLECTED DISTRIBUTION, ORGANISATION AND ONCOLOGICAL CONSEQUENCES

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Introduction: In spite of century-long research, the zonal architecture of the prostate was first discovered 1968(McNeal); the intraprostatic distribution and organisation of lymphatic vessels (lvs) in normal and neoplastic prostate is unknown in spite of their oncological importance.

Materials and Methods: 10 FFPE prostatectomy specimen (each consisting of 40-50 paraffine blocks) were processed for H+E, PAS, endothelial marker CD31 (DCS, Hamburg) and lv-marker D2-40 (antibody reacting with an O-linked sialoglycoprotein epitope of lvs; DCS Hamburg, Germany) and strictly oriented and analysed for localisation, direction and diameter of lvs.

Results: The density of intraprostatic lvs is low – in contrast to other organs. The lvs of the transition zone are small and oriented parallel to urethra and drain to the lymphatics of the prostatic apex and (perhaps less) to the mural lymphatics of the bladder. Apparently, they do not connect to the lymphatics of central and peripheral zones.

The central zone shows in its apical part paraurethrally oriented vessels, and in the basal parts radiary oriented lvs, draining into the radial oriented lymph vessels of the peripheral zone. In the outer, subcapsular muscle coat of the prostate, lvs show a circumferential orientation, draining the lymph to the large network of vertically oriented lvs in vicinity of seminal vesicles and from here to the network of the pelvis.

Conclusions: Prostatic lvs show a highly oriented architecture, explaining the various patterns of intraprostatic and periprostatic tumour cell propagation.