Microvascular proliferation

Microvascular proliferation refers to the formation of new blood vessels, specifically small capillaries and venules, within tissues. This process is a crucial component of angiogenesis, the growth of new blood vessels from pre-existing ones. Microvascular proliferation occurs in various physiological and pathological contexts, including wound healing, tissue repair, and cancer progression.

In cancer, microvascular proliferation is particularly significant as it facilitates the supply of oxygen and nutrients to rapidly growing tumors. The development of an extensive network of microvessels enables tumors to sustain their growth and metastasize to other parts of the body. Assessing microvascular proliferation is often important in cancer diagnosis and prognosis, as it can be indicative of tumor aggressiveness and the likelihood of metastasis.

Detection of microvascular proliferation is commonly achieved through histological analysis of tissue samples, where the presence of new blood vessels can be visualized using specific staining techniques. Additionally, imaging modalities such as contrast-enhanced MRI or CT scans can provide non-invasive means of evaluating microvascular density and proliferation in tumors. Targeting microvascular proliferation is also a strategy in cancer therapy, with anti-angiogenic drugs designed to inhibit the formation of new blood vessels and thereby impede tumor growth and spread.

Microvascular proliferation (MVP) is a hallmark of glioblastoma. Endothelial cell hypertrophy (ECH), also known as endothelial hyperplasia, is correlated with a shorter survival of patients with gliomas.