Abstract Title: Revisiting tumor angiogenesis: Vessel co-option and remodeling

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Tumor growth and metastasis depend on the establishment of tumor vasculature to provide oxygen, nutrients, and other essential factors. The well-known vascular endothelial growth factor (VEGF) signaling is crucial for sprouting angiogenesis as well as recruitment of circulating progenitor endothelial cells to tumor vasculature, which has become therapeutic targets in clinical practice. However, the survival benefits gained from targeting VEGF signaling have been very limited, with the inevitable development of treatment resistance. In the presentation, we will discuss the most recent findings and understanding on how solid tumors evade VEGF targeting therapy, with a special focus on vessel co-option, vessel remodeling, and tumor cell-derived vasculature establishment. Vessel co-option may occur in tumors independently of sprouting angiogenesis. And sprouting angiogenesis is not always required for tumor growth. The differences between vessel-like structure and tubule-like structure formed by tumor cells will also be introduced. The exploration of the underlying mechanisms of these alternative angiogenic approaches would not only widen our knowledge of tumor angiogenesis, but also provide novel therapeutic targets for better controlling cancer growth and metastasis.