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Titel des Beitrags:
Ischemic tissue injury in the dorsal skinfold chamber of the mouse: a skin flap model to investigate acute persistent ischemia.

Abstract:
Despite profound expertise and advanced surgical techniques, ischemia-induced complications ranging from wound breakdown to extensive tissue necrosis are still occurring, particularly in reconstructive flap surgery. Multiple experimental flap models have been developed to analyze underlying causes and mechanisms and to investigate treatment strategies to prevent ischemic complications. The limiting factor of most models is the lacking possibility to directly and repetitively visualize microvascular architecture and hemodynamics. The goal of the protocol was to present a well-established mouse model affiliating these before mentioned lacking elements. Harder et al. have developed a model of a musculocutaneous flap with a random perfusion pattern that undergoes acute persistent ischemia and results in ~50% necrosis after 10 days if kept untreated. With the aid of intravital epi-fluorescence microscopy, this chamber model allows repetitive visualization of morphology and hemodynamics in different regions of interest over time. Associated processes such as apoptosis, inflammation, microvascular leakage and angiogenesis can be investigated and correlated to immunohistochemical and molecular
protein assays. To date, the model has proven feasibility and reproducibility in several published experimental studies investigating the effect of pre-, peri- and postconditioning of ischemically challenged tissue.

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