Thrombosis is the manifestation of coagulation and platelet activation. Our paradigms of both of these processes are largely based on reductionist approaches in vitro. Intravital microscopy of thrombosis in animals offers a model to test these paradigms. Using studies on weak platelet inhibitors, and on procoagulant microparticles, as an example, the utility of intravital microscopy will be discussed.

Specifically the concept of platelet activation within a thrombus will be introduced. Measurement of this uncovers the potency of weak but clinically important platelet inhibitors such as acetylsalicylic acid and statins.

Lastly the procoagulant properties of microparticles generated in vitro will be discussed. Microparticles are vesicles shed from cells that are elevated in disease states, but their characteristics in vitro are poorly understood. Work defining their properties in vitro and in vivo will be presented.

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