**NOVEL MURINE DEEP VENOUS THROMBOSIS (DVT) MODEL ENABLES REAL-TIME IN VIVO IMAGING OF CLINICALLY RELEVANT DVT**

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**Background:**The pathogenesis of deep venous thrombosis (DVT) is still unclear, largely due to a lack of an adequate animal model. Although stasis is a major cause of DVT formation, inferior vena cava stasis model is not suitable for in vivo imaging because of its deep location. Other thrombosis models allowing in vivo imaging such as FeCl3and laser injury induce platelet thrombus, but not erythrocyte-rich DVT.

**Method:** We established a novel clinically relevant murine DVT model, suitable for in vivo imaging. Thrombus was induced during the observation with fluorescence microscopy at ligated femoral vein, suggesting that filtered excitation light is the trigger of DVT formation.

**Results:**Formed DVT resembled human DVT morphologically, histologically, and rheologically. The thrombus extended in a long axis direction of the blood vessel. Histological analysis showed red-thrombi with fibrin network. DVT was frequently initiated at venous valves which are common sites of human DVT. In vivo imaging revealed that erythrocyte accumulation preceded the deposition of platelets and leukocytes, indicating significant roles of erythrocytes in the initiation of DVT.

**Conclusion:** Our novel murine DVT model indicates significant roles of erythrocytes in the initiation of DVT.

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