

High Rate of Deep Vein Thrombosis following Multiligament Knee Injury Prior to Reconstruction

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INTRODUCTION: Multiligament knee injuries generally occur as a result of high-energy athletic or motorized accidents. These are known to be associated with significant neurovascular injury. However, the rate of deep vein thrombosis following multiligament injuries has not yet been defined in the literature. The purpose of this study was to determine the rate of post-injury deep vein thrombosis following multiligament knee injury, and to assess the risk factors for post-injury deep vein thrombosis in this patient population.

METHODS: This was a retrospective cohort study performed at a Level I trauma center. Patients who underwent surgery following multiligament knee injury between January 1st, 2012 and May 1st, 2022 were identified. It was common practice for some surgeons at our institution to obtain pre-operative doppler ultrasounds on all patients presenting with an acute injury. Patients with single-ligament injuries and those without a doppler were excluded. Bivariate analysis using the Pearson coefficient was performed.

RESULTS: Forty-six patients were included, and 45/46 underwent acute/delayed reconstruction. The mean age was 38.3 ± 29.7 years, 73.9% were male, and the mean body mass index was 27. Injury severity according to the Schenck Knee-Dislocation classification was as follows: 18/46 grade II, 19/46 grade III, 5/46 grade IV, and 4/46 grade V. There were 9/46 (19.6%) polytraumatized patients. Overall, there was a 35% rate of post-injury deep vein thrombosis, with 1/16 being above-knee. There was a significant association between polytraumatized patients and post-injury deep vein thrombosis ($p=0.025$). However, deep vein thrombosis was not independently associated with patient age, BMI, smoking status, hypertension, or injury severity ($p>0.05$).

DISCUSSION AND CONCLUSION: There was a high rate (35%) of deep vein thrombosis following multiligament knee injury, particularly in polytraumatized patients. The majority of these occurred below the knee. Post-injury anticoagulation should be considered in this patient population for prophylaxis prior to surgery.