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Title

Effect of Post-Operative Heparin on Digit Replant and Revascularization Success

Purpose

The use of intravenous (IV) heparin following digital replantation or revascularization (DRR) varies greatly. The lack of evidence does not provide the clinical equipoise needed for a randomized trial; as such, a matched propensity score analysis was performed to evaluate the use of post-operative heparin following DRR.

Methods

A retrospective cohort of patients who underwent DRR from 2005 to 2016 was identified. A propensity score was calculated based on age, smoking, injury mechanism, procedure type, vein graft and number of digits injured. Patients were matched 1:3 by one standard deviation caliper width of the propensity score, to create two groups of patients with similar risks of receiving IV heparin post-operatively. McNemar test was used to determine differences in failure rates between groups.

Results

DRR was performed on 282 patients (92% male; median age: 43 years; 37% smokers). Post-operative heparin was administered in 69 patients (25%), with continuous IV heparin in 34 (49%) and IV heparin with dextran in 35 (51%). Failure occurred in 88 patients (31%), of whom 30% received IV heparin. Heparin-related complications were noted in 6 patients (2%). After propensity score matching, any heparin, heparin alone or with dextran was not found to be associated with failure ($p=0.71$, $p=0.74$, $p=0.89$).

Conclusion

Among DRR patients with similar predisposing characteristics for post-operative heparin, the use of therapeutic heparin does not appear to have a protective effect against digital failure. Studies are needed to define the role of post-operative heparin in DRR and to justify the risk of its administration.