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Title

Evaluating the Effect of Comorbidities on the Success, Risk, and Cost of Digital Replantation

Purpose

The clinical decision to replant an amputated digit is driven primarily by surgical indication. This study was designed to determine the effect of patient comorbidities on the success, risk, and cost of digital replantation.

Methods

All amputation injuries and digital replantation procedures captured by the National Inpatient Sample during 2001 to 2012 were identified. A successful replantation procedure was defined as one in which a replantation occurred without a subsequent revision amputation. Patient comorbidities were tested for association with failure of replantation, risk of postoperative complications, and overall hospital costs.

Results

We identified 11,788 digital replantation procedures. A total of 3,604 patients (30.6%) experienced revascularization failure associated with replantation. The risk for replant failure was highest among patients with psychotic disorders, peripheral vascular disease, and electrolyte imbalances. The risk for postoperative complications was highest among patients with electrolyte imbalances, drug abuse, or chronic obstructive pulmonary disease. Hospital costs were greatest among patients with deficiency anemias, electrolyte imbalances, or psychotic disorders. Patients with more than 3 comorbidities experienced significantly higher failure, risk of postoperative complications, and cost of digital replantation.

Conclusion

These data suggest that even when surgical indications are met, patients with more than 3 comorbidities and those who have a history of alcohol abuse, deficiency anemias, electrolyte imbalances, obesity, peripheral vascular disease, or psychotic disorders are at increased risk of replantation failure and associated postoperative complications. Assessment of this risk should have a role in decision making regarding whether a digit should be replanted.