

Readmission and Revision Rates for Replantation: A Survey of the National Readmission Database

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Background and Objectives

- Digital replantation remains a relatively rare procedure, the limited patient numbers limit the strength of studies aimed at studying variables affecting replantation outcomes
- The use of a novel database, the National Readmission Database (NRD) has allowed us to track patients who underwent replantation at numerous hospitals across 2013-2014 for multiple hospital encounters

Objectives:

- Determine factors associated with readmission, determine the reason for readmission and the secondary procedures that patients are undergoing

Materials and Methods

- Using the NRD, 1197 patients were identified that underwent replantation of fingers or thumbs from 2013-2014
- Diagnosis and procedure code data was used to identify the cause for readmission for each patient, and the time to readmission
- The readmission group was compared to the control by hospital type, comorbidities and age

Results

- Number of patients: 1197
- Average Age: 38.9
- Percent of patients readmitted: 3.2%
- Percent of patients readmitted for amputation 2.5%
- Average length to readmission for amputation: 10.3 days
- Teaching institutions were more likely to treat failed replantation and perform revision surgeries (OR 2.57, P<0.05)

Table 1. Comparison of comorbidities between readmission groups

Diagnosis	Non-Readmission Group	Readmission group	P Value
Tobacco abuse	17.9%	58.1%	<0.001
Alcohol and Drug Use	4.5%	59.7%	<0.001
Diabetes	6.1%	17.7%	0.001
Asthma/COPD	3.9%	19.4%	<0.001
Chronic Kidney Disease	1.6%	4.8%	0.077
Liver Disease	0.2%	41.9%	<0.001
Thyroid Disease	3.7%	6.5%	0.304
Hyperlipidemia	10.8%	46.8%	<0.001
Psychiatric illness	7.7%	59.7%	<0.001
Hypertension	15.3%	72.6%	<0.001
Peripheral Vascular Disease	1.2%	4.8%	0.029
Heart Disease	4.9%	48.4%	<0.001
Coronary Artery Disease	4.1%	45.2%	<0.001

Table 2. Most common reasons for readmission

Reason for Readmission	Percentage
Infection	32.5%
Amputation	30.5%
Debridement	14.9%
Pedicle Revision	8.3%
Non-union	6.5%
Post Traumatic Stress Disorder	2.8%
Contracture	1.1%
Adhesions	11.1%

Conclusions

- Only 3.2% of replantations undergo revision surgery in the first year following the initial procedure, far less than the quoted literature
- Higher secondary revision rates at teaching hospitals further supports the establishment of regional centers of excellence
- Several comorbidities are associated with significantly higher chance of readmission following replantation procedures
- Surgeon's should consider a patients medical comorbidities when having preoperative conversations of risks and benefits, and when determining a patients disposition

Limitations

- The NRD is unable to track patients from one calendar year to the next
- If a patient transitions care, the NRD is unable to track patients from one hospital to another



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