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INTRODUCTION

- Severe trauma to the upper extremities often results in complex traumatic injuries requiring extensive tissue reconstruction
- Processed nerve allograft (Avance[®] Nerve Graft, AxoGen, Inc. Alachua, FL) has seen increased utilization in the reconstruction of traumatic nerve injuries
- Here we report our findings from a national registry study on the outcomes of complex peripheral nerve injuries reconstructed using processed nerve allografts

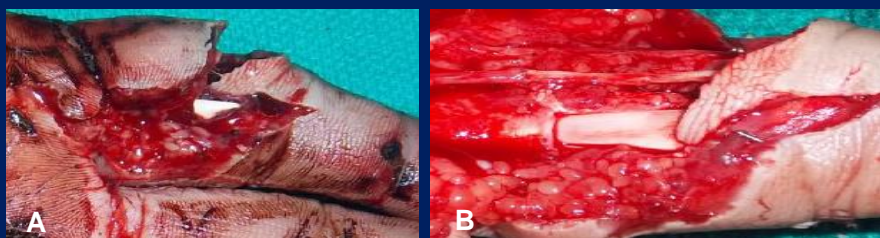


Figure 1: A. Crush avulsion injury to the left index finger from a helical weld machine resulting in boney, tendon and soft tissue injuries. B. Tissue reconstruction including nerve repair with processed nerve allograft. Images courtesy of The Buncke Clinic

METHODS

- The RANGER[®] registry is designed to continuously incorporate injury, repair, safety and outcomes data
- The database was queried to identify a subset of patients with multi-tissue, high energy and extensive injuries
- Outcomes from repairs reporting a minimum of 6 months quantitative data were evaluated for meaningful recovery
- Meaningful recovery was defined as S3-S4 and M3-M5 for sensory and motor function

RESULTS

Study Population

- Thirty subjects with 37 nerve injuries met inclusion criteria
- 25 sensory and 12 mixed/motor nerves identified with complex nerve reconstructions
- The mean age was 37 ± 19 (19, 70) years
- The mean gap length was 24 ± 15 (8, 65) mm
- The time-to-repair was 23 ± 75 (0,456) day, with median time of 1 day

Mechanisms of Injury	No. Repairs
Amputation	5
Avulsion	9
Crush	9
Combined Crush Avulsion	3
Blast	3
Gunshot	8

Analysis of Outcomes Population

- Meaningful recovery was observed in 78% of all repairs
 - 80% in sensory repairs
 - 75% in mixed /motor repairs
- There were no related adverse events reported

RESULTS Cont'd

Publication	n	Gap (mm)	Nerve	Technique	Recovery
Kallio et al.	77	<50	Sensory	Autograft	60%
Frykman and Gramyk	141	<50	Sensory	Autograft	88%
Chiriac et al.	16	2-25	Sensory	Conduit	44%
Frykman and Gramyk	--	--	Mixed	Autograft	60- 80%
Kim and Kline	7/15	--	Mixed	Autograft	57- 67%
Vastamaki et al	14	≤ 35	Mixed	Autograft	57%
Chiriac et al.	12	2-25	Mixed	Conduit	8%

* M3-M5, S3-S4 by MRCC

CONCLUSIONS

- Processed nerve allografts performed well when utilized in complex reconstructions
- Meaningful recovery was reported for both sensory, mixed, and motor nerve repairs
- Outcomes compare favorable to historical data in the literature
- Additional data incorporated into the registry will allow for continued analysis on the role of processed nerve allografts for peripheral nerve injuries

Disclosure

This study was sponsored through a research grant by AxoGen Inc.