

Donor Site Morbidity After Sural Nerve Grafting: A Systematic Review

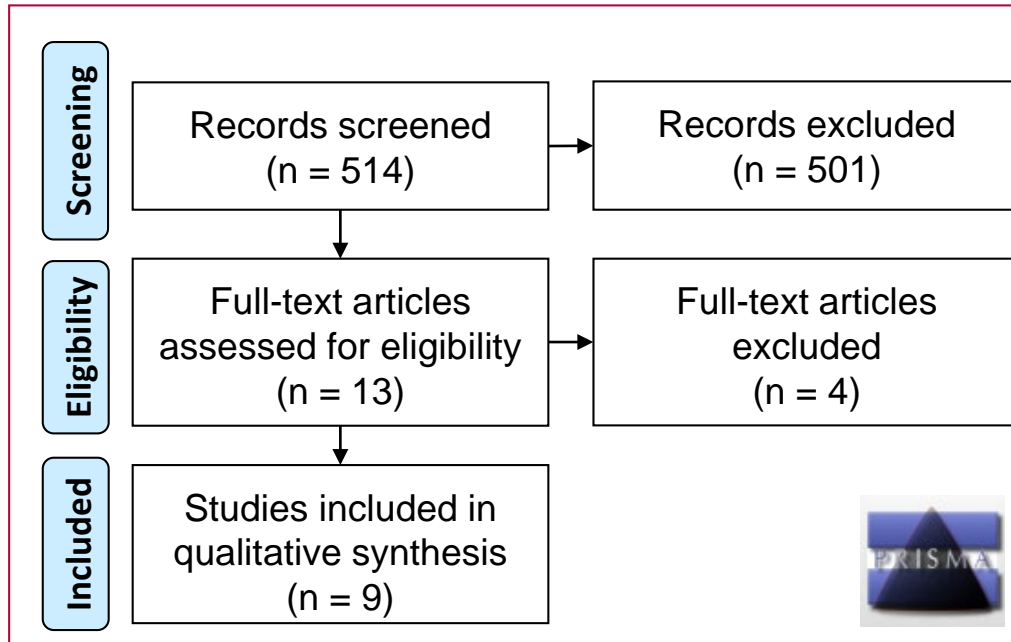
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Introduction

- The sural nerve receives sensory input from the lateral aspect of the foot and is commonly used as a nerve graft
- Understanding the morbidity of sural nerve harvest is important when counseling patients regarding nerve graft options
- The objective of this study was to systematically review the literature and pool the current data for postoperative outcomes after sural nerve graft harvest

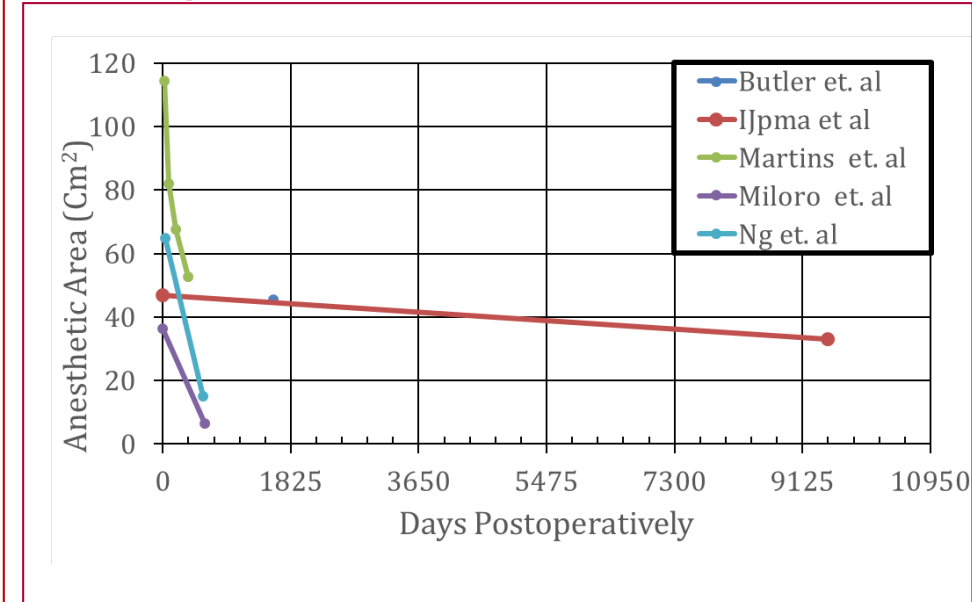
Figure 1. Abridged PRISMA Flow Diagram



Methods

- A systematic review of the English literature published in PubMed and MEDLINE databases was conducted to identify studies that examined donor site outcomes of patients who underwent harvest of a sural nerve graft
- PRISMA guidelines were used

Figure 2. Sensory loss at reverse sural nerve graft donor site over time



Authors	Year	Location	Patients	Time Interval	Evaluation	Sensation loss	Pain	Cold Sensitivity	Functional Impairment
Ehretsman	1999	St. Louis, Missouri	16	5.4y	Survey	56.3% (9)	25% (4)	18.8% (3)	18.8% (3)
Miloro	2005	Omaha, Nebraska	26	3y	Survey	58% (15) < quarter 39% (10) = quarter 4% (1) = tennis ball/orange	0% (0)	0% (0)	15% (4)
Ijpma	2006	Groningen, Netherlands	29	26y	Survey	75.9% (22); 33 cm ²	17.2% (5)	34.5% (10)	17.2% (5)
Ng	2006	Kuala Lumpur, Malaysia	20	2y	Survey, Pin prick	67cm ²	NR	NR	0% (0)
Lapid	2007	Toronto, Canada	14	>5y	Semmes-Weinstein	64.3% (9) had Semmes-Weinstein decreased sensitivity compared to control group	NR	NR	0% (0)
Martins	2012	Sao Paulo, Brazil	38	1y	Direct Observation	100% (38); 52.56 cm ²	15% (6)	NR	0% (0)
Hallgren	2013	Malmö, Sweden	41	12y	Survey	92.7% (38)	51.2% (21)	29.2% (12)	17.1% (7)
Butler	2017	London, England	40	4.3y	Semmes-Weinstein	87.5% (35); 45.4 cm ²	Very low	NR	Minimal
Catapano	2018	Toronto, Canada	14	1.8y	Semmes-Weinstein	92.9% (13)	42.9% (6)	21.4% (3)	7.1% (1)
POOLED RESULTS:			238	6.9y		87.2% (190)	25.6% (42)	22.2% (28)	10% (20)

Conclusion

- Most patients have persistent sensory loss after sural nerve graft harvest
- The anesthetic area improves over time, but persists long-term
- Cold sensitivity and pain are each present in 25% of patients long-term but only 10% will have functional impairment
- Preoperative discussion of long-term anesthesia, pain, and cold sensitivity is necessary for informed consent regarding elective sural nerve graft harvest

Table 1. Summary of data

Abbreviations: PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analysis; NR, Not Recorded.