

An Argument for Salvage in Severe Lower Extremity Trauma with Posterior Tibial Nerve Injury: The Ganga Hospital Experience

Adeyiza O. Momoh, M.D.
Senthil Kumaran, M.D.
Daniel Lyons, M.D.
Hari Venkatramani, M.D.
Sanjai Ramkumar, M.D.
Kevin C. Chung, M.D., M.S.
S. Raja Sabapathy, M.D.

Ann Arbor, Mich.; and Coimbatore,
India



Background: Absence of plantar sensation is a critical factor considered in favor of amputation for patients with lower limb-threatening injuries. This study aims to assess outcomes of limb salvage in a group of patients with severe lower extremity injuries associated with posterior tibial nerve transection.

Methods: The authors studied eight cases of limb salvage after traumatic injuries with documented tibial nerve laceration managed at Ganga Hospital, India. Functional and health-related quality-of-life outcomes were assessed. Outcomes from this case series were compared to outcomes of studies from a systematic literature review on salvage of the severely injured lower extremity.

Results: Patients in this case series reported mild pain (median score, 20 on a visual analogue scale ranging from 0 to 100), with some return of plantar sensation in patients with tibial nerve repairs (median score, 2 of 5). Patients demonstrated a decrease in ankle motion (27.5 degrees' plantar flexion and 10 degrees' extension) and muscle strength (median heel flexor score, 3 of 5). All patients could ambulate independently. Quality of life and function measured by validated instruments revealed minimal disability. The authors identified 1767 articles on lower extremity trauma, and 14 articles were reviewed systematically. Relative to the case series, published articles reported similarly diminished ankle motion and muscle strength, with reports of mild pain in select studies. Patient-reported outcomes instruments found variations in the degree of physical disability based on the time from injury.

Conclusion: Although limited in number, this case series demonstrates the value of limb salvage even for patients with posterior tibial nerve injury. (*Plast. Reconstr. Surg.* 136: 1337, 2015.)

Severe lower extremity trauma remains a common challenge for the reconstructive surgeon, and debate continues over the choice between amputation and limb salvage.¹ Rates of open long bone fractures have been reported at 11.5 per 100,000 persons per year, with the majority of injuries occurring in the lower extremity.² Based on hospital discharge data, approximately 3500 trauma-related lower extremity amputations are performed annually in the United States.³ Only a fraction of these amputees are able to return to the workforce, with many having to change their vocations and/or work part-time.⁴

From the Section of Plastic Surgery, Department of Surgery, University of Michigan Medical School; and the Department of Plastic Surgery, Ganga Hospital.

Received for publication January 8, 2015; accepted April 1, 2015.

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DOI: 10.1097/PRS.0000000000001814

Limb salvage in appropriately selected patients offers advantages over amputation. Health care cost associated with amputation can be much higher than the cost associated with salvage. MacKenzie et al.⁵ estimated projected lifetime cost of amputation to be over three times that of salvage (\$509,275 versus \$163,282) in the United States.

Disclosure: The authors have no financial interest to declare in relation to the content of this article.

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