

# Repair of a Partially Transected Median Nerve with Avance® Nerve Graft: A Processed Nerve Allograft

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## Introduction

Peripheral nerve injuries affect hundreds of thousands of patients every year in the United States alone. Patients with peripheral nerve trauma are frequently at the peak of their employment productivity and thus any ensuing loss of function is particularly devastating. Surgeons may choose to directly repair these nerve deficits, however excess tension in a direct repair can lead to impaired axonal growth or neuroma formation.<sup>1</sup> In order to perform a tensionless repair, surgeons look for solutions that give more reliable outcomes, provide a variety of sizes, are easy to use and bring vascularity to the repair site.

As an off-the-shelf option, Avance® Nerve Graft is a decellularized and cleansed extracellular matrix processed from donated human peripheral nerve (Figure 1). It provides the surgeon with desired handling and structural characteristics: pliability of soft tissue, an epineurium to suture the graft in place, and intact endoneurial tubes for the axons to grow through. Available in a variety of sizes, Avance® Nerve Graft allows for a customized repair for gaps from 5 to 70mm in length.

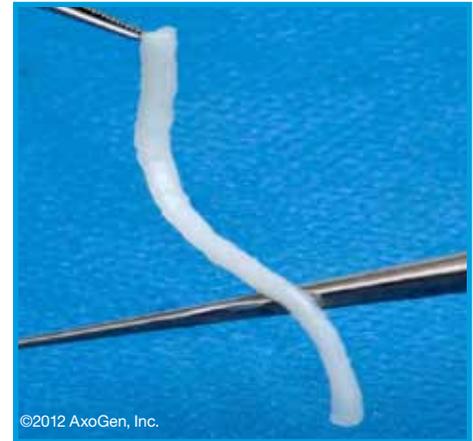
In this case, the patient was a 42-year-old male with a partial median nerve injury from a laceration proximal to the wrist. The injury resulted in loss of sensory and thermal discretion in the long finger and a portion of the ring finger.

Note that the following is only an example of a surgical technique for treatment of a digital nerve injury. The methods described here may be adapted by the surgeon to fit the specific case being treated.

## Surgical Method

### Nerve exposure and assessment

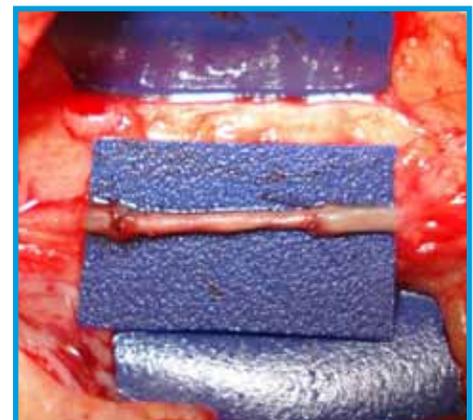
1. The injured median nerve segment was exposed, freeing an appropriate amount of the surrounding tissue to visualize the nerve defect.
2. Under an operative microscope, the area of injury was located and two injured fascicles were identified. Internal neurolysis was performed to isolate the injured fascicles while preserving the uninjured fascicles. The ends were resected to healthy, viable nerve both proximally and distally.



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**Figure 1:** Avance® Nerve Graft, a processed nerve allograft, allows for tensionless repair while providing the desired handling and structural characteristics that are similar to an autograft nerve.



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**Figure 2:** Preparation of Avance® Nerve Graft.



**Figure 3:** Avance® Nerve Graft used for tensionless repair of median nerve fascicles.

