**Surgical excision of spinal cord injury scar: Functional return can result**

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Ramon y Cajal, the father of neuropathology, demonstrated over a century ago that the failure of neurological improvement following a spinal cord injury (SCI) is the result of a scar that develops at the site of the SCI which restricts axons from

penetrating through the scar barrier. It will be shown that an SCI scar can be

surgically excised followed by a successful reconstruction of the spinal cord which leads to a return of function in animals and in a human.

Cats were subjected to the removal of a 5mm piece of spinal cord (SC) followed by insertion of collagen into the SC gap and an intact vascularized omental pedicle placed directly over the collagen.

Cats who underwent omental-collagen reconstruction showed functional improvement as did a carefully studied SCI patient who on initial MRI showed

complete anatomical transection at the T6-T7 level. 3 ½ years after SCI, an SC scar measuring 1.6 inches (4cm) was excised with spinal cord reconstruction using 5cc of collagen placed in the SC gap with an overlying omental pedicle. Two years of rehabilitation following the operation resulted in her ability to walk as has been shown on video.

It is possible to excise a post-traumatic SCI scar followed by omental-collagen reconstruction with subsequent functional return. Serial MRI’s over a several year period demonstrated the ability of an injured cord to heal.