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Harry S Goldsmith

University of California, USA

New treatments for spinal cord injuries

Background: In the late 1800's, Ramon y Cajal, Father of Neuropathology stated that the reason patients who suffered a spinal cord injury (SCI) do not improve is that a scar develops at the site of the SCI which prevents axons from penetrating through the scar barrier. The aim of the study was to learn if a scar following an SCI could be surgically removed, followed by reconstruction of the spinal cord which could lead to functional improvement following the injury.

Method: Studies were carried out in the laboratory to learn a technique to see if a piece of a spinal cord could be removed followed by subsequent functional improvement. It was found that when a section of the spinal cord in animals could be surgically excised with reconstruction of the spinal cord being successfully performed followed by functional success.

Results: It was learned in cats when a piece of spinal cord was removed, the spinal cord could be reconstructed by filling the spinal cord defect with collagen followed by the placement of an intact vascularized omentum directly on the underlying collagen connection. Not only was this possible, but a patient underwent excision of 1.6" of her spinal cord with subsequent ability to walk which was confirmed by video.

Conclusion: It appears that chronic spinal cord injured patients may have in the future the ability to have the scar which is present in a chronic injury removed with expectations following a spinal cord reconstruction that functional return can occur.

Biography

Harry S Goldsmith is Clinical Professor of Neurological Surgery at the University of California in Sacramento. He has been a Full Professor of Surgery and Neurosurgery since 1970. He has written 260 published papers, has edited four surgical texts, and was the Editor of *Goldsmith's Practice of Surgery* in twelve volumes from 1976-1988. His main interest at present is in the treatment of Alzheimer's disease and in new treatment for acute and chronic spinal cord injuries using the omentum.

hlgldsmith@aol.com