

## Comparative study of the axonal vagus nerve sprouting into the autologous nerve graft

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Although the molecular and cellular basis of peripheral nervous regeneration are well known, even with the advantages of microsurgery techniques, the unsatisfactory functional recovering is still a frustrating biological and clinical problem. The differences in the morphological organization among central nervous system and peripheral nervous system result that the last one presents higher regenerative capacity. The nervous edge junction, when the nerve cut, can be accomplished by using many existent techniques. The epineural suture, as well as perineural suture, is considered a conventional method which is chosen to primary repairs. Concerning the anatomical and physiological relevance of the vago nerve and with the intention to know better its behavior in relation to some peripheral nerve repair techniques, this work was carried out aiming to join different types of nerves and to investigate the hypothesis of the growth of nervous fibres derived from an intact cranial nerve in direction of a segment of autologous spinal nerve (fibular common nerve). The repair at the peripheral nerve was realized by autologous nervous graft, comparing the results of coaptation techniques with fibrin glue derived from serpents venom and epineural end-to-side neurotaphy. The possibility of collateral growth happening in an intact nerve axon to (vago nerve) to an inherited neural segment (fibular nerve), was studied in this work realized in a rat. The grafts were collected after a period of 8 and 12 weeks post operatory and processed for observations at light and electronic transmission microscopes. The morphometric of the regenerated axons was carried on. In most cases, using the neurotaphy there was a regeneration of the technique nervous fibers. Although, the regeneration index was better on the inherited coapted with glue. The histological analyses and ultra-structural confirm the presence of myelinated and unmyelinated axons in the fixated nervous segments. The morphometric results demonstrate an average inferior to the diameter and thickness of the myelin sheath of the nervous fibers of the coapted and sutured inherited when compared to the donor. This findings confirm the collateral growth of the derived axon if a cranial nerve to a segment at inherited spinal nerve.