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Research Protocol

Mieloduroenterosinangiosis (Experimental Technique for the Treatment of Spinal Cord Injury and Regeneration)

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Received: July 05, 2018; **Published:** July 30, 2018

Summary

The Mieloduroenterosinangiosis is an experimental technique not still applied in livings beings, humans or animals; in which i indicate the use of the vermiform appendix or cecal appendix with its respective vascular pedicle, as a way to improve the primaries or secondaries injuries over the spinal cord after a traumatic spine injury, direct or indirect.

In this technique I propose the use of the vermiform appendix or cecal appendix properly vascularized which is anastomized to an artery close to the region of the vertebral column affected, and posteriorly be placed over the portion of the injured spinal cord, this way it could serve or be useful as a mini-incubator to alleviate or ameliorate lesions and also favor axonal spinal cord regeneration.

Objectives

The objectives of this study or proposal, is to determine if the incorporation or placement of the vermiform appendix over the traumatized spinal cord, induce favorable changes over the primary or secondary lesions of the spinal cord; I mean, if one can determine if the vermiform appendix serve as an inductor or facilitator in the recovery of the neural tissue affected or improve or induce any axonal or neuronal regeneration. Want also to evaluate the factibility of this therapy, also to evaluate possible complications or adverse effects that could derive as a consequences of this procedure; and to create other possible therapies derive from this procedure for the management of spinal cord injury from a Neurosurgical view.

Materials and Methods

Operating room with all the equipments to perform neurosurgical procedures, needed to perform the transposition of the vermiform appendix over the spinal cord.

We will proceed to use pigs approximately 50 - 60 kgs, but also could we use rabbits unless they are smaller. This specimens will be kept anesthetized and under aseptic and antiseptic technique will proceed to perform the appendectomy with its vascular pedicle, and after the procedure is finished, close the wound in the classic way, layer by layer.

Once the vermiform appendix has been harvested or removed this will be washed exhaustively and will be placed in an aseptic solution for some minutes and then in a nutritive solution with electrolytes and amino acids. Successively to this procedure the specimen will be placed in prone position and will proceed to dissect the vessels or arteries in the back (latissimus dorsi artery, cervical transverse artery, occipital artery) or any other that could be used to perform the vessels anastomoses with the vermiform appendix pedicle.

Simultaneously, must be done a medial incision dissecting the muscles layer from the vertebral laminas 3 or 4 levels in a way to expose the spinal cord, after exposing the spinal cord, this must be impacted with a special device (spinal cord impactor). Once the lesion has

been made or sectioned, the vermiform appendix, which must be open longitudinally without affecting the pedicle and placed all over the injured section like if it were sheltering. After that it must be fixed to the Dura using the serosa of the appendix and close the wound by layers

During a period of several weeks or months the clinical evaluation must be done, taking care of the specimens and register all the incidents or complications that could appear and all the improvements in movements if there were any.

After a prudential time 2, 3 or 6 months the specimens will be sacrificed, to extract the spinal cord and the whole product of the procedure to perform histological and histopathological studies with light or electron microscopy as histochemicals studies, with transverse and longitudinal sections of the spinal cord.

Beside this must be kept controls in which will be made only the transection of the spinal cord.

Discussion

The use of the vermiform appendix, could be an alternative in the treatment of spinal cord injury, taking into account that there is not still a cure in cases of spinal cord injury and knowing that any optional therapy is valid looking for a solution and in pro of the regeneration of the spinal cord or part of its neural network. Anteriorly was used the omentum, today I am proposing the use of the vermiform appendix, knowing that the enteric tissue is rich in neurotransmitter, lymph nodes that we do not know how they could interact with the spinal cord tissue and is one of the purpose to investigate in this proposal and also evaluate to which extend could favor regeneration of the spinal cord.

The vermiform appendix will serve as a natural incubator that together with other therapies, cellular and molecular therapies could offer a better microenvironment to acts the therapeutics actions, keeping it isolated from its surroundings an favor the longed regeneration of the spinal cord.

Volume 10 Issue 8 August 2018