UNIVERSITÉ DE SHERBROOKE

A New Experimental Feline Model of Cervical Spondylotic Myelopathy for Translational Research

Record number : OPR-565

Overview

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ADMINISTRATIVE UNIT(S)

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LEVEL(S)

Master's degree

LOCATION(S)

Campus de la santé

Project Description

Cervical spondylotic myelopathy (CSM) is a progressive degeneration of the cervical spine that severely impairs sensorimotor functions . A few rodent models of CSM have been developed to study the CSM pathophysiology, but these models have some limitations for translational purposes. To investigate the pathophysiological mechanisms of CSM, we will develop a feline model that is more suited for chronic neurophysiological studies. Twelve cats will be selected based on their ability to step consistently on an animal treadmill. After training/familiarization, cats will be implanted with MRI-compatible wire electrodes to chronically record muscle activity and for nerve stimulation. After obtaining data in the intact state, CSM will be induced by inserting an expandable sheet (200% volume expansion) of water-absorbing polyurethane elastomer at the C5 level . To assess changes in spinal cord function over time, we will characterize EMG patterns and kinematics in the fore- and hindlimbs before and every week after inducing CSM for a period of 6 months.

We are looking for someone motivated with an interest in neuroscience and the control of movement in health and disease.

Discipline(s) by sector

Health Sciences

Physiology

Funding offered

Yes