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The effect of an experimentally-created lesion in the proximal aspect of the suspensory ligament of the pelvic limb of horses on the deep branch of the lateral plantar nerve

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The suspensory ligament (SL) and the deep branch of the lateral plantar nerve (DBLPN) are confined within the suspensory canal by the plantar fascia. Dyson (2002) and Bathe (2001) theorized that chronic lameness caused by Proximal Suspensory Desmitis (PSD) of a pelvic limb is caused by neuropathy of the DBLPN resulting from compression of the nerve between the plantar fascia and the enlarged SL rather than from pain from the damaged SL. The objective of the study is to evaluate the effect of collagenase-induced PSD on the DBLPN. PSD was induced in one pelvic limb of 6 horses by injecting collagenase into the proximal aspect of the SL. Gait was evaluated weekly and the proximal aspect of the treated and control SLs was examined ultrasonographically at days 0, 21 and 41. At 6 weeks, the DBLPN of each pelvic limb was harvested and examined histologically. All horses became lame on the treated limb and the SL of the treated limb enlarged. The difference in lameness between the treated and control limbs and the difference in the transverse ultrasonographic measurements between the treated and control SLs were significant ($p < 0.01$). No histological signs of compression neuropathy of the DBLPN of the control and treated limbs were observed. Although each treated SL enlarged substantially and all horses became lame on the treated limb, enlargement did not result in histological changes in the DBLPN. The time between injury and harvest of the nerve may have been insufficient to cause changes characteristic of compression.

Biography

Rames Salcedo has completed his MSc from National University of Mexico (UNAM-FMVZ) and Doctor in Veterinary Sciences studies from Guelph University and starting a Residency in Large Animal Surgery. His main interests are equine lameness with emphasis on the suspensory ligament. He is currently working at the National University of Mexico as a Teaching Assistant and Professor. He has assisted the Equine Hospital at UNAM and Equine Hospital La Silla.

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