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NOVEL APPLICATIONS OF FUNCTIONAL ELECTRICAL STIMULATION IN EQUINE REHABILITATION

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Signalment: (1) Thoroughbred 8-yr old, Gelding (2) Trakehner 4-yr old, Gelding (3) Arabian 13-yr old, Gelding

History: (1) Sudden onset poor performance (2) Sudden onset lameness (3) Chronic LF lameness, neck stiffness.

Physical examination findings: (1) Roaring when cantering (2) 4/5 lame LH, moderate sensitivity to femur palpation (3) 2/5 LF lameness, neck pain, severe atrophy of neck muscles.

Diagnosis: (1) Collapse of pharynx, near constant retroversion of epiglottis, intermittent displacement of soft palate (2) Fractured third trochanter (3) Arthropathy of cervical facet joints.

Problem list: (1) Improve respiratory function (2) Reduce atrophy during fracture immobilization (3) reduce cervical muscle atrophy as a cause/result of front limb lameness.

Medical, surgical, and rehabilitation treatment steps: (1) Functional Electrical Stimulation (FES) with electrodes placed along ventral mandible (2) FES over gluteal muscles; ultrasound during FES to assure no bone fragment movement (3) FES to reduce muscular atrophy in neck after limited improved due to cervical facet joint injections.

Follow-up and assessment of outcome: (1) 18 treatments over 27 days showed improvement with intermittent displacement of the soft palate and no epiglottic retroversion (2) 6 FES treatments over a period of 3 months of stall rest resulted in no hindquarter or top line atrophy, and no gait asymmetry (3) 3 FES treatments were successful in decreasing neck muscle atrophy and reducing left front lameness.

Declarations: Dr. Schils is a principle in the company EquiNew, LLC