The Science Behind the Squeeze: Neurosteroid Control in Foal Recovery from NMS

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Neonatal Maladjustment Syndrome (NMS) affects approximately 3-5% of all newborn foals. The syndrome produces several behavioral and cognitive impairments that directly hinder neonate development, such as disorientation, deficient nursing, seizures, and more. As a result of NMS, up to 20% of newborn foals die within the first three days of life. Some literature suggests the use of the Madigan Squeeze Technique as a non-invasive and safe treatment for foals with NMS. The technique involves wrapping a rope around a foal's chest and abdomen to mimic the squeeze of the birth canal and trigger the release of neurosteroids, which can reduce or alleviate NMS symptoms. However, it remains undetermined whether early behavioral improvements translate into permanent cognitive benefits beyond the neonatal period. This critical literature review addresses this gap in research, whether the Madigan Squeeze's effects extend to long-term cognitive and behavioral outcomes of treated foals. Several cohort studies evaluated short-term outcomes of the Madigan Squeeze as a treatment by reporting rapid recovery, decreased mortality rate, and suggesting normal growth trajectories in comparison to standard intensive hospitalization. Researchers suggest that prolonged neurosteroid levels cause NMS, and the Madigan Squeeze accelerates recovery. Some studies suggest that the technique may cause physical injury and long-term neurological difficulties, such as broken ribs or neuromuscular disease, which could impact adult equine life. However, current literature lacks high-quality research on the long-term development of NMS foals. Further, long-term follow-up studies are needed to assess the efficacy and safety of the Madigan Squeeze in NMS-affected foals.