Equine Self-Mutilation Syndrome: Behavior or Medical?
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In this presentation an overview of pathological self-injurious behavior (ESMS) is being discussed. Epidemiology, classification and clinical aspects and pathogenesis are presented. The importance of comprehensive assessment of symptomatology and functions of ESMS for treatment planning is discussed.

Equine Self-Mutilation Syndrome (ESMS): Behavioral or medical?
Pathological self-injurious behaviors (SIB) are recognized in many different species, including humans. They are self-directed, socially unacceptable, repetitive behaviors that cause minor to moderate physical injury. The terms "physical injury" and "mutilation" are often used interchangeably. It has been suggested in the study of the pathogenesis that some of these behaviors seems to be pathological similar to displacement activities or grooming behavior. Interestingly, experimental research results show that the administration of amphetamines results in self-mutilation in mice, rats, horses and dogs. Painful stimulation causes an increased release of endorphins in humans and in mice, indicating that the opioid neuropeptide regulatory system may be affected. It has also been suggested that heterogeneous disorders, for example OCD, may have to be considered as a continuum or comorbidity of this disease process. The dopaminergic system has been reported to be involved in Gilles de la Tourette syndrome with 50% of patients with SIB (1).

First described in horses as self-directed aggression, clinical signs include glancing or biting at the flank or pectoral areas, bucking, kicking, vocalizing, rubbing, spinning, or rolling. In stallions, castration was associated with improvement of this behavior (2). The prevalence of ESMS in the equine population is unknown; however, 0.7% of geldings and 1.9% of stallions from a survey of more than 700 horses in Canada were reported to be affected (U. A. Leuscher and D. B. McKeown, unpublished data). Some authors point out the similarities of this syndrome to the Tourette's syndrome (TS) of humans. Behavioral parallels between ESMS and TS include head and neck motor tics, hemiballismus (constant, undirected, purposeless striking out with either a forelimb or hindlimb), preoccupation with environmental boundaries, and occasional bizarre vocalizations. Other similarities include juvenile onset, male predilection, familial tendency, an unrelenting course, exacerbation by stress, amelioration by absorbing activities, unimpaired performance, and occasional precipitation by trauma (3).

Animal and human research suggests serotonin (5-HT) dysregulation with SIB. Some evidence to support these findings is the effectiveness of serotonin reuptake blockers to treat these disorders in humans. There is some vague evidence for the role for some of these neurotransmitter systems in ESMS from a clinical survey in which two horses with ESMS reportedly responded to therapy with a dopamine antagonist and a case report describing the suppression of ESMS tics with nalmefene, an opioid antagonist (4). Eight flank-biting horses with ESMS were enrolled for a behavioral study and the effects of drugs that either stimulate or inhibit central opioid, dopamine, norepinephrine, and serotonin neurotransmitter systems were reported. Behaviors were recorded hourly during the study and were compared with those of a saline control baseline to determine whether there were significant differences among the treatments. A significant decrease in ESMS behavior was produced by both morphine and the opioid antagonist, naltrexone. Morphine’s effects only became apparent toward the end of the first hour following administration of an “analgesic dose” (0.1 mg/kg) at the 30-minute mark. The suppression of ESMS activities with buspirone suggests a role for serotonergic modulation of the behavior. Buspirone appeared to have 2 to 3 hours of activity at the dosage used in this study (0.5 mg/kg). Based on these findings, the authors believes to support the argument that ESMS resembles human TS. Clomipramine, a preferential serotonin reuptake blocker, did not produce any significant effect on ESMS behavior in the horses in this study. Surprisingly cocaine produced a significant decrease in ESMS behavior in these horses, whereas cocaine may induce tics in humans with TS. However, the authors point out that the actions of cocaine are difficult to identify because it blocks the reuptake of several monoamines, and stimulation of presynaptic receptors for these neurotransmitters may cause decreased motor activity (5).

ESMS as well as SIB seem to be an equally complex and poorly understood phenomenon. It has been previously suggested to divide equine self-mutilation syndrome based on clinical presentation in 3 types – where Type I represents normal behavioral response to pain or other forms of discomfort. Type II, represents self-directed Inter-male aggression in stallions as well as some geldings and Type III involves a more quiet and repetitive behavioral sequence reminding of stereotypic behavior pattern (6).

The equine practitioner is best served to treat each horse presented with ESMS as an individual case and consider all “Five Freedoms” in the decision making process for treatment. The concept of the “Five Freedoms”, also known as the Brambell Report from 1965, originated with release of Ruth Harrison’s book “Animal machines” in 1964 and was the report of the UK Technical Committee to enquire into the Welfare of Animals. The concept was further refined by the Farm Animal Welfare Council and
eventually released known as the “Five Freedoms”. These principles are relevant measures of welfare and apply to any animal species including horses.

The “five freedoms”

- Freedom from hunger and thirst
- Freedom to express normal behaviors
- Freedom from pain, injury and disease
- Freedom from distress and fear
- Freedom from discomfort

References
Clinical and theoretical issues in self-injurious behavior; Yaryura-Tobias JA, Mancebo MC, and Neziroglu FA; Rev. Bras. Psiquiatr. vol.21 n.3 São Paulo Sept. 1999, revisão