The Role of Bits in Equitation: A Welfare Issue

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Word Count: 972

Introduction

Traditionally, the use of a bitted bridle has been the principal method by which the ridden horse has been controlled (Quick & Warren-Smith, 2009). The use of a bit is invasive, since it causes discomfort in the mouth and interferes with breathing (Cook, 1999). Additionally, a bit affects oral behaviours and, when accompanied by excessive rein tension, can cause further marked discomfort to the horse (Manfredi *et al*., 2010). Therefore, its use in equitation is considered a potential welfare issue (Quick & Warren-Smith, 2009). Several preliminary studies have compared bitted bridles with an alternative, the bitless bridle, which applies pressure along the nasal plane of the horse rather than in the sensitive mouth (Cook, 1999). With recent findings indicating that bitless bridles can offer an equal or greater amount of control to the rider, and hence enhance the performance of the ridden horse (Quick & Warren-Smith, 2009), there is a strong argument to amend the rules that mandate the use of a bit in equestrian competition (Cook & Mills, 2009).

Discussion

In traditional horsemanship, a rider uses a variety of rein tensions to communicate with the horse and to obtain responses from signals transmitted directly to the bit (Warren-Smith *et al*., 2007). Unfortunately, it is common for riders to maintain excessive tension on the reins and prolong bit pressure in the mouth, leading to habituation and the subsequent need to apply even more rein tension to elicit a desired response from the horse (Warren-Smith *et al*., 2007). Extreme bit pressure is applied in both the Rollkur posture and in poll flexion (von Borstel *et al*., 2009), both of which are used in equestrian competition. Not only do these positions cause discomfort to the soft tissues of the mouth, including the tongue and lips, but they also obstruct the upper airway and hence restrict respiration, which is detrimental to the horse during exertion (Cook, 1999).

Manfredi *et al*. (2010) examined intra-oral behaviours that indicate discomfort and that were influenced by the presence of several bits combined with or without rein tension. Fluoroscopy was used to record lateral images of the bit in the mouth and subsequently analyse the oral behaviour of six horses with three bits: a jointed snaffle, KK ultra and a Myler comfort snaffle. It was found that the type of bit did not affect intra-oral behaviours, yet mouthing the bit and tongue movements increased substantially in response to increased rein tension placed on the bit. These tongue movements included placing the tongue between the bit and the hard palate to relieve pressure on the soft tissues of the mouth. Such discomfort and behaviours can be resolved by removing excessive rein tension on the bit or, preferably, completely eliminated by removing the bit altogether.

Similarly, Quick & Warren-Smith (2009) found that oral behaviours characteristic of discomfort were more pronounced in horses fitted with a bitted bridle. This study compared the behavioural and physiological effects of both a bitted bridle and a bitless bridle in foundation training, which included bridling, long reining and riding. Four horses of the same age (2 years) that had encountered only basic training were studied; two were assigned a bitted bridle, and the remaining two were assigned a bitless bridle. Over 11 days, the horses were first introduced into the test arena and then bridled, long reined and finally ridden in the arena. It was found that horses with a bitted bridle exhibited more head shaking during bridling and long reining compared with those fitted with bitless bridles, which indicates a higher level of resistance towards the bit. Additionally, in this study bitted horses showed more chewing and opening of the mouth, which are behaviours also indicative of discomfort (Cook, 1999). Opening the mouth during competition is undesirable and hence, a bitless bridle is not only a better option to improve equine welfare but also to improve performance in equestrian competition.

Cook & Mills (2009) examined changes in behaviour and performance following the switch from a bitted bridle to a crossunder bitless bridle during an exercise test. This study found that the behaviour of the 4 horses markedly improved and communication between the rider and horse was enhanced with a bitless bridle compared to a bitted bridle. This was reflected in the average performance scores of 3.7 when bitted and 6.4 when bitless. Additionally, all horses in the study were more willing and alert when bitless compared with when fitted with a bitted bridle, which may indicate decreased discomfort.

Importantly, Quick & Warren-Smith (2009) found that bitted horses had higher heart rates and higher heart-rate variability than bitless horses during long reining. An increased heart rate and heart-rate variability are indicative of stress in horses, (Visser *et al*., 2002) and thus in this study, horses fitted with a bitted bridle were shown to be more distressed, presumably because of the added discomfort. In addition, bitted horses took more steps after the rider applied the halt stimulus during long reining. Hence, horses fitted with bitless bridles were more likely to perform the correct response after the deceleration cue. As with findings by Cook & Mills (2009), this study found that horses with bitless bridles performed better than horses fitted with bitted bridles.

The findings of these studies are limited, as only a relatively small number of horses were used. Further studies incorporating larger sample sizes should be undertaken to fully examine the effects of bitted bridles on behaviour and performance as well as on equine welfare.

Conclusion

The use of a bit in equitation should be reconsidered, primarily because of the many ramifications for equine welfare and because recent findings have indicated that bitless bridles can enhance the performance of the ridden horse. Therefore, an alternative, such as the bitless bridle, should be used to improve the welfare of horses in both training and competition.

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