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DDSP: Does anything work?

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Once an accurate diagnosis of dorsal displacement of the soft palate (DDSP) has been made, the veterinary surgeon must advise an owner/trainer on the treatment options for that individual horse. Therefore it is important to understand the rationale and scientific evidence that led to the development of these procedures, as well as being aware of the results of clinical efficacy studies. Numerous treatment options have been described for DDSP, which usually sends a ‘warning’ that no one treatment is considered optimal. The number of treatments is a reflection of our relatively poor understanding of the aetiopathogenesis. Whenever possible, clinical decision making should be based upon the best available evidence. Recently a systematic review of the efficacy of interventions for DDSP was undertaken. The results of this systematic review revealed that, in evidence-based medicine terms, the quality of the literature was considered to be low. It is therefore difficult to draw firm conclusions regarding the true efficacy of these procedures or to determine which procedures might be the most successful and least harmful for treatment of DDSP. As systematic reviews only include efficacy studies in clinical cases, several well-conducted research studies performed in clinically normal horses that might provide further evidence to support or refute a treatment were not included. This talk will attempt to summarise the findings of the systematic review and highlight some of the findings from other research studies in an attempt to draw all the evidence together. During the talk a variety of interventions will be covered; however, it is beyond the scope of this abstract to describe all in detail, so a brief summary of the more commonly performed procedures in the UK is noted here.

Soft palate procedures

Several surgical treatments (thermal cauterity, laser palatoplasty, palatal sclerotherapy, excision palatoplasty, staphylectomy) have been described that aim to increase the tension or stiffness of the soft palate. These methods do not address muscular strength of palatal musculature but aim to reduce the compliance of the soft palate through the induction of fibrosis. The stiffening that occur within the nasopharynx during strenuous exercise. These results imply that the effect of sternothyroid tenectomy on the position of the hyoid or larynx at rest has not been studied, myectomy of the sternothyroideus and sternohyoideus muscles in normal horses increases the translaryngeal and tracheal inspiratory pressures during exercise. These results imply that the sternothyroid muscles are important in maintaining the stability of the upper airway and that the myectomy procedure had an adverse effect on upper airway mechanics in normal horses. Several clinical studies have been undertaken to evaluate the LTF procedure and a fairly wide range of success rates from modest to good have been reported.

Conservative management

A number of conservative methods have been described for the treatment of palatal dysfunction. Tack alterations such as nosebands and tongue-ties have been advocated to prevent opening of the mouth and caudal retraction of the tongue. Cross or drop nosebands attempt to prevent opening of the mouth, whilst the Australian noseband holds the bit high in the horse’s mouth, theoretically reducing the likelihood of the horse getting the tongue over the bit. The use of tongue bits with a caudal extension, thought to exert pressure on the dorsal surface of tongue, also has been described. A bitless bridle was also suggested as a treatment for DDSP, by reducing factors such as salivation and tongue withdrawal. Very little clinical research has yet been undertaken to investigate any of these factors.
The tongue-tie aims to prevent caudal retraction of the tongue and was also thought to pull the hyoid apparatus and larynx forward. However, application of a tongue-tie did not improve airway dynamics in clinically normal horses during exercise nor did it increase nasopharyngeal diameter or alter hyoid position in anaesthetised normal horses. However, a more recent study showed that a tongue-tie did alter the position of the hyoid apparatus when assessed ultrasonographically. The clinical evidence to support the use of the tongue-tie is also quite variable. The results of a variety of forms of conservative management in clinical studies are again variable but in some studies appear similar to those obtained by surgical interventions. One study did suggest however that the improvement may only be temporary, and it is also noteworthy that many horses undergo surgical interventions when conservative managements have been unsuccessful.

Conclusions
Current evidence places the practising veterinary surgeon in a difficult position with regard to selection of a treatment which is most likely to be effective in a particular horse. However, because performance is so substantially affected by DDSP, trainers are typically keen to try both conservative and surgical interventions even though the success rates may only be moderate. Ultimately it is hoped that an improved understanding of the aetiopathogenesis will allow the development of more effective procedures.

Further reading
The references for most clinical efficacy studies can be found in the following review paper:

Selected other references are found below: