Key Points

- Upper airway endoscopy is a vital component of the pre-purchase evaluation of sale yearlings
- The veterinarian must be cautious about predicting future athletic performance

Endoscopic examination of the upper respiratory tract is a vital component of the pre-purchase evaluation of young horses destined for athletic careers. Poor performance in racehorses is often caused by upper airway abnormalities. Therefore, it is common for veterinarians to be asked to evaluate the upper airway and make a prediction as to the future racing performance of the horse in question. Most of the horses that are being examined are yearling Thoroughbreds that are being sold at public auction. These examinations are being conducted on the sale grounds and consist of a visual assessment of the head and then an endoscopic examination of the upper airway. Functional evaluation will consist of making the horse swallow to assess arytenoid movement and nasal occlusion to assess arytenoid and palate function.

There are certain upper airway conditions that the sales companies list in the “conditions of sale” in the sales catalogue that allow for the return of a horse to the seller if the abnormality is found immediately post sale. This has resulted in upper airway examinations being performed prior to the arrival at the sale grounds so there are no surprises at the sale. This has lead to very few horses arriving at the sale with one of the upper airway abnormalities listed in the conditions of sale. The upper airway abnormalities that are listed as “unacceptable” are as follows: laryngeal hemiplegia, rostral displacement of the palatopharyngeal arch, epiglottic entrapment, permanent dorsal displacement of the soft palate, arytenoid chondritis or chondroma, subepiglottic cyst, and cleft palate. Arytenoid function is probably the area of most concern during the pre-purchase examination.

The goal of the pre-purchase endoscopic examination is to identify any abnormality that will adversely affect airflow. The information that is gained during the resting endoscopic examination will be used by the potential buyers and their veterinarians to make a prediction on the future athletic performance of the horse. The endoscopic findings can significantly affect the purchase price of the horse. Functional abnormalities are the most difficult to predict. Arytenoid function and the character of the epiglottic cartilage are heavily scrutinized. There are published retrospective studies where racing performance was correlated to yearling endoscopic examination. Stick, et al. evaluated 427 Thoroughbred yearlings that were examined arytenoid movement/function was graded on a 4-point scale, palatal function was and the epiglottic appearance was categorized as normal or abnormal. Race records were evaluated through the end of their 4 year old racing season. The authors found that horses with grade 1 and 2 arytenoid cartilage movement had significantly better racing performance as adults compared with yearlings with grade 3 arytenoid movement. In their study they found that epiglottic abnormalities such as being thin, flaccid, or hypoplastic were not significantly associated with racing performance. Intermittent dorsal displacement of the soft palate was not significantly associated with racing performance. A similar study was presented at the AAEP convention in 2001. Pierce & Emberton evaluated 816 Thoroughbred yearlings and correlated their racing performance as 2 and 3 year olds with their yearling endoscopic examination.
function was graded on a modified 4-point scale where there were subcategories for Grade 2 and 3 movement. Epiglottic structure was graded also. There was no statistically significant difference in racing performance in horses with Grade I, IIa, and IIb arytenoid movement. Horses with Grade III arytenoid movement had performance limitations at 3 years of age. There was a significant difference in earnings in horses as 2 year olds that had abnormal epiglottic structure vs. horses with normal epiglottic structure. However, at 3 years of age the difference was not significant. The authors concluded that veterinarians should be more tolerant of a less than perfect epiglottis in yearlings. In a second study, Pierce, et al. correlated the two to four year old racing performance of Thoroughbreds to their yearling endoscopic examination. In this retrospective study arytenoid function and epiglottic structure was assessed in 2954 Thoroughbred yearlings. Arytenoid function was graded using a modified 4-point scale and epiglottic structure was graded on a 4-point scale. The epiglottic structure score was based on cartilage thickness, length, dorsal vasculature, and rigidity. In this study, horses that had grade II.2 arytenoid function had significantly lower earnings per year and average earnings per start at age four compared to grades I & II.1. There was no statistical difference in performance in horses with epiglottic structure scores of 0, I, and II. Horses with epiglottic structure scores of III and IV had poorer performance compared to those with scores of 0, I, and II. Horses with a short epiglottis had significantly decreased earnings. It is interesting that horses that have normal arytenoid abduction but it is asynchronous and more difficulty maintaining the abduction (grade II.2) have decreased earning potential.

Prepurchase endoscopy of the upper respiratory tract should be a major factor in developing recommendations for prospective buyers.

References


