

# Tie-back and Hobday Surgery



A Tie-back and a Hobday are surgical procedures commonly performed together as treatment for recurrent laryngeal neuropathy (RLN), a condition causing paralysis of the nerve supplying the muscles of the larynx. This is the most common cause of abnormal respiratory noise in exercising horses and is often referred to as 'whistling' or 'roaring'. It almost exclusively occurs in large horses, primarily Thoroughbreds and Warmbloods

## Clinical Signs

Horses with RLN may present with a history of poor performance, and an inspiratory (breathing in) noise, the classic 'roarer'. The larynx, as in all species, opens during breathing and closes during eating to prevent water and food entering the lungs. An opened larynx looks like a diamond shaped structure; RLN generally affects the muscles of the left

side of the larynx, resulting in the inability of the left side to open properly. As a result, the amount of air able to travel through the larynx to the lungs is reduced, resulting in exercise intolerance or reduced performance. The roaring or whistling noise comes from turbulent air flow across the vocal cords caused by the narrowed opening to the larynx.



A NORMAL, SYMMETRICAL LARYNX



A HORSE WITH RLN

## Diagnosis

Diagnosis of RLN is based on a history of poor performance, an abnormal respiratory noise during exercise, physical examination of the larynx, exercise tests and endoscopic examination. Endoscopic examination involves a fibreoptic camera being inserted into the patient's nostril to visualize not only the larynx, but also the upper and lower respiratory tract. When examining horses with RLN, the larynx is visualised whilst the patient breathes and the degree to which the larynx opens is graded:

**Grade 1:** A normal larynx, that opens fully during inspiration at rest and after exercise.

**Grade 2:** A larynx that opens fully, but some level of movement such as fluttering is seen in the muscles of the left side of the larynx.

**Grade 3:** The larynx can no longer open fully; some movement of the left side is present when the horse breathes in and out.

**Grade 4:** At rest there is an obvious weakness in the left larynx muscle and the horse appears to be unable to open this side of the larynx at all.

Grades 1 and 2 are considered to be within the limits of a normal horse. Grade 4 is abnormal and these horses will produce the abnormal respiratory noise at exercise. A grade 3 larynx is slightly in the grey area. If showing clinical signs, such as poor performance, these horses will usually benefit from treatment, but a lot will depend upon the level of competition at which the horse is expected to perform.

### TREATMENT

- Treatment is not required in all cases. Many competition and pleasure horses can perform adequately with RLN. Surgical intervention of RLN involves tie-back and/or Hobday procedures.
- Surgery is performed under a general anaesthetic and an incision is made over the larynx. The tie-back involves using a piece of suture material to retract and anchor the paralyzed left side of the larynx, permanently fixing it in an open position.
- The Hobday involves removal of the horse's left vocal cord along with two adjacent pouches, to reduce or stop the vibration induced noise. A Hobday can be performed alone or following a tie-back. This is only beneficial in horses that produce a respiratory noise without poor performance, as a Hobday only removes the source of the noise but will not correct an abnormal airflow.

### COMPLICATIONS

- Following surgery, patients are box-rested for 4-6 weeks. The published success rates of tie-backs vary from 45%-95% depending on the criteria used to assess success.
- Common complications include coughing and nasal discharge, as the permanent opening of the left side of the larynx can cause inhalation of food into the lungs.
- Some of these complications resolve with time. Other complications include wound infection and the failure of the left side of the larynx to remain fully open due to breakage of the suture material.

### Prognosis

The tie-back and Hobday surgeries are the best practical options currently available for the treatment of RLN, and are performed commonly, particularly in TB racehorses. Although there are recognised complications, the benefits generally outweigh the risks in horses that can otherwise not be effective athletes.

### New technology

Remote endoscopy has recently become commercially available for the investigation of upper respiratory tract conditions. The camera is placed in the nostril and the battery and light pack is carried by the rider. This enables visualisation of the larynx at exercise and has proven to be invaluable in assessing the larynx during fast exercise and determining the significance and severity of any muscle weakness or paralysis.



A HORSE UNDERGOING REMOTE ENDOSCOPIC EXAMINATION



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