

Vet's Corner – Laryngeal Paralysis

Laryngeal paralysis is also known as Laryngeal Hemiplegia, Recurrent Laryngeal Neuropathy and in horses may be called Roaring or Roarer's Syndrome. It is a condition where the nerves and muscles supplying the larynx, either one or both sides, cease to function properly, causing the cartilages at the front of the larynx to remain stationary during breathing and swallowing.

In a normally functioning larynx these cartilages, called the arytenoid cartilages, open wide during inspiration, and close during swallowing, thus preventing food or water from entering the wind pipe. When the nerve supplying the muscles that open and close the arytenoids ceases to function properly, the arytenoids are unable to fully open or fully close. This causes a partial obstruction to airflow, especially during exercise or when panting to stay cool, leading to reduced exercise and heat tolerance. There is also incomplete protection of the airway during swallowing, thus leading to an increased risk of aspiration pneumonia.

As a point of interest, the left recurrent laryngeal nerve, that supplies the left side of the larynx, begins in the brain, runs down the neck, around the heart then back up the neck to the larynx. In a fully grown adult giraffe, this nerve is over 10 metres long.

In most cases the cause of laryngeal paralysis is unknown, so it is termed 'idiopathic'. However, it can be secondary to generalised degenerative diseases of nerves or muscles, neoplasia (tumours) in the neck or thorax, or external trauma.

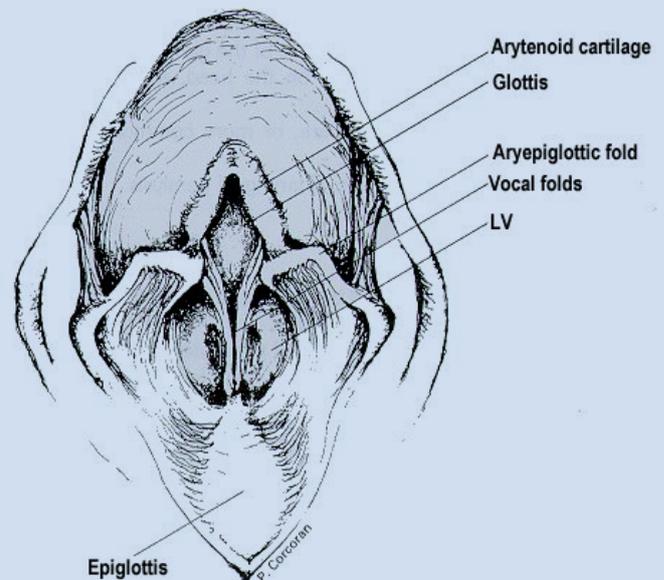
Symptoms of laryngeal paralysis can vary but generally include change in voice, (dog's bark becomes hoarse), gagging or coughing when eating or drinking, exercise intolerance, loud noisy breathing on inspiration and sometimes difficulty in breathing if both sides of the larynx are badly affected. Symptoms can occur at any time but are usually worse in hot or humid weather, when the dog is excited or stressed or if the dog is severely overweight. Generally, it is the large or giant breeds that are most affected, especially as they get to middle age or older.

Diagnosis is based mostly on symptoms but can only be confirmed by examining the larynx under sedation or light general anaesthesia and watching for normal movement of the arytenoids.

Treatment will depend on the severity of symptoms. Mild cases can usually be managed medically, using mild sedatives and anti-inflammatory drugs to limit the swelling around the larynx that often accompanies this condition.

More severe cases may require surgery to either remove one or other of the affected arytenoids or suturing one of the arytenoids in a maximally open position (Laryngeal tieback). This surgery alleviates the respiratory symptoms but may increase the risk of aspiration pneumonia. ■

To our knowledge, two of our greyhounds have so far been diagnosed with LP. However the advice given by their vets has differed slightly. Both hounds were diagnosed with the condition in their 13th year. Lucky went to the vet for confirmation of LP and while under the light anaesthetic his vet opted to remove his vocal chords to allow more space for breathing. His vet felt that the risk of aspiration pneumonia was too great and at his age the removal of his vocal chords would make him more comfortable for his remaining months. Millie's vet however felt the tie back operation was worthwhile and her owner informs us she is greatly improved and so far has not suffered any infections. From this limited experience we would conclude that where a dog is otherwise in good health the tie back operation is recommended.



We asked Malcolm to explain further the difference between the two types of surgery ...

The arytenoid cartilages are mobile flaps of cartilage in front of the larynx, connected to the vocal cords. The vocal cords are fleshy structures that lie inside the larynx, reaching from bottom to top, on either side. Movement of the arytenoids alters the tension on the vocal cords, thus changing the pitch of the sound produced. If one arytenoid is paralysed, then the attached vocal cord will also tend to hang loose inside the larynx. Removing the vocal cord will therefore increase the size of the airway.

Tying the arytenoid to one side so it cannot close also pulls the associated vocal cord to the side thus keeping the airway open, but because the arytenoid cannot then close over the laryngeal opening when swallowing, there is the increased risk of aspiration pneumonia which is an infection caused by breathing food into the lungs.

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