**VENTRICULO-CORDECTOMY**

Ventriculectomy (VE) or ventriculocordectomy (VCE) is a surgical procedure utilized to manage recurrent laryngeal neuropathy (RLN) in horses, with VCE being preferred over VE. Surgical removal of the vocal cord and laryngeal saccule is believed to stabilize the paralyzed arytenoid cartilage, widen the ventral aspect of the rima glottidis, and decrease respiratory noise associated with RLN. The traditional surgical approach for VCE is ventral laryngotomy in combination with a roaring burr to remove the laryngeal ventricle and excision of the vocal cord with scissors.

This procedure is essentially a ventriculoectomy in addition to vocal cord removal, which is mainly used to treat respiratory noise caused by vocal cord collapse. This creates a smoother laryngeal contour, which should reduce respiratory noise. Veterinarians can perform ventroculocordectomies in standing sedated horses, under general anesthesia, or using a transendoscopic laser-assisted technique.

Experimental data has suggested that a longer time period (two to three months) may be required before the maximal effects are achieved in terms of reduction of respiratory noise and obstruction.

There are multiple variations/techniques for VCE. The techniques include standing and recumbent contact and noncontact laser surgical techniques and the use of specific, dedicated surgical instruments.

## Introduction

* The technique consists of removal of the mucus membrane lining the laryngeal ventricle leading to adhesions between the arytenoid and thyroid cartilages and reduced filling of the ventricles.
* Many different surgical methods have been used to treat laryngeal [hemiplegia](https://www.vetstream.com/equis/Content/Disease/dis00316.asp" \o "Larynx: hemiplegia). The technique of ventriculectomy or sacculectomy has been used for most of this century but recent research, particularly using video-endoscopy on animals exercising on a treadmill, has cast doubt on the ability of this technique alone to abduct and stabilize the arytenoid and vocal cords during exercise.
* Removal of the vocal cords (bilateral cordectomy) decreases airway obstruction when carried out alongside other procedures.

### Uses

* Treatment of laryngeal [hemiplegia](https://www.vetstream.com/equis/Content/Disease/dis00316.asp" \o "Larynx: hemiplegia), particularly the idiopathic form, often performed in conjunction with [laryngoplasty](https://www.vetstream.com/equis/Content/Technique/teq00412.asp" \o "Larynx: laryngoplasty) , or as a single procedure in horses exercising at slow paces.

#### Advantages

* Relatively simple procedure.
* Possible in standing animal.
* Minimal complication rate.
* May modify and/or reduce respiratory noise (stridor) associated with hemiplegia.

#### Disadvantages

* Probably does not prevent dynamic collapse of laryngeal structures during exercise.
* Prolonged incision healing time
* Laryngeal swelling necessitating tracheal intubation
* Laryngeal swelling, granuloma formation, and arytnoid chondrosis (an uncommon acquired condition of the horse's larynx that leads to airway obstruction), mainly noticed with the laser-assisted technique
* Latent thermal damage when the laser is used.

**MORE ABOUT THE BASIS OF THE PROCEDURE:**

In horses with laryngeal hemiparesis/hemiplegia, the degree of deficit of the abductor branches of the left recurrent laryngeal nerve causes varying degrees of decrease of both vocal cord and arytenoid cartilage movement. During inhalation, the vocal cord of affected horses is displaced axially, increasing impedance, decreasing ventilation, and causing an upper-respiratory noise. Clinically incomplete or absent abduction of the left arytenoid cartilage and vocal cord is manifested by impaired performance and/or upper-respiratory noise. Many treatments have been used for preventing these paradoxical movements, increasing the diameter of the rima glottidis, and reducing the noise produced during exercise. The vocal cordectomy technique that is performed to reduce the exercise intolerance in horses working a low velocity (draft horses) and in all horses to reduce the abnormal sound created with laryngeal hemiplegia. Vocal cordectomy is also performed by many surgeons as an adjunct to the laryngoplasty procedure. Vocal cordectomy is felt to increase the ventral diameter of the rima glottidis, reduce the noise associated with laryngeal hemiparesis/hemiplegia, and if the laryngoplasty loses some abduction, prolong the results by increasing the ventral diameter of the larynx.