

- The tie-back procedure is performed with the horse in lateral recumbency with the head side up.
- Following appropriate surgical preparation and draping a horizontal incision is made ventral and parallel with the linguofacial vein.
- Blunt dissection is continued to gain access to the lateral aspect of the larynx. Care is taken not to disturb the first cervical nerve and cranial laryngeal nerve. The septum between the cricopharyngeus and thyropharyngeus muscles is separated. This will expose the muscular process of the arytenoid cartilage.
- Blunt dissection is continued caudally to expose the caudal aspect of the cricoid cartilage. Typically there is a notch in the cricoid cartilage that is just lateral to midline of the larynx. The conformation of the caudal aspect of the cricoid cartilage is variable among horses. The cricoid notch is important when placing the prosthetic suture(s). Most surgeons always seat the suture(s) in the cricoid notch. This prevents the suture from slipping laterally.
- The choice of suture material is based on surgeon preference. The surgeon will place a suture just underneath the caudal edge of the cricoid cartilage approximately 3–4 cm lateral to the dorsal midline. The needle is advanced and rotated through the cartilage. The “bite” is approximately 1 cm. Care is taken so that the suture does not penetrate the tracheal lumen during placement.
- Endoscopic observation is used to monitor for this. A second suture may be placed in a similar fashion. The sutures are then brought underneath the cricopharyngeus muscle. The larynx can be rotated laterally to facilitate exposure of the muscular process using a laryngeal retractor. Each strand of suture material is then used to take a bite through the muscular process.
- Under endoscopic observation each strand of suture material is tightened and the larynx is abducted once appropriate abduction has been achieved. The degree of abduction is subjective but it always appears greater under general anesthesia as compared to the examination performed the following day. Most likely this is related to the fact there is no pharyngeal tone under general anesthesia.
- Usually, a ventriculocordectomy is performed in combination with the laryngoplasty. The ventriculocordectomy can be performed before or after completing the laryngoplasty.
- Ventriculocordectomy is the removal of the mucosal lining of the laryngeal ventricle and the removal of the vocal cord. This does not result in abduction of the arytenoid cartilage and therefore its use in race horses as a sole treatment for laryngeal hemiplegia is not recommended.
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