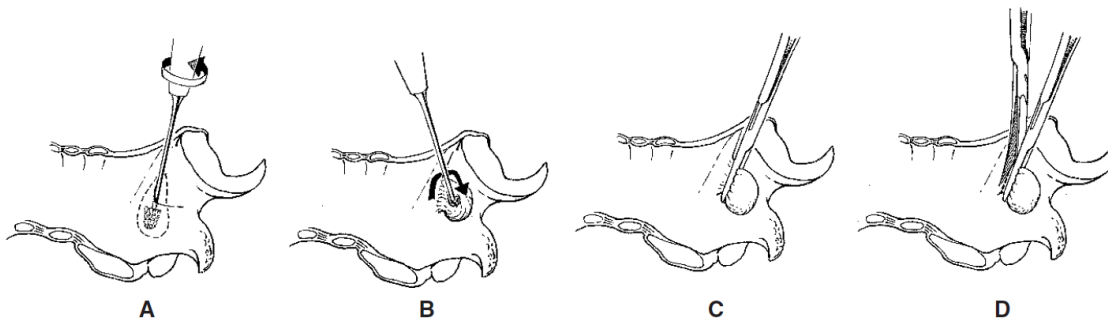


## VENTRICULECTOMY

Ventriculectomy (unilateral or bilateral) refers to the removal of the mucosal lining of the laryngeal ventricle located caudal to the vocal fold. It is usually performed to eliminate noise and can have some beneficial effects on performance. Because it does not produce abduction of the arytenoid cartilage, ventriculectomy is not recommended as a sole procedure for racing horses affected with laryngeal hemiplegia. However, it reduces soft tissue collapse during exercise and can be quite successful if performed on certain show horses. Because the complication rates of laryngoplasty (e.g., failure, anesthetic problems, coughing) approach 30% in draft horses, the author prefers to perform a bilateral ventriculectomy in the standing horse. The horse is placed in the stocks and sedated with loading doses of detomidine (4 mg IV) and butorphanol (10 mg IV). After starting a detomidine drip (14 mg added to 250 mL of saline) to effect (approximately 2 drops per second for 15 minutes, 1 drop per second for 15 minutes, and so on, as the effect is highly variable), the horse's head is elevated and the laryngotomy site is prepared. Local anesthetic is injected underneath the skin in the area of the laryngotomy approach. After the final preparation, a 10-cm incision is made on the ventral midline, centered over the junction of the horizontal and vertical rami of the mandible. The paired sternothyrohyoideus muscles are separated on the midline and the characteristic V in the thyroid cartilages is palpated.



**Figure 44-9.** Schematic illustration of the ventriculectomy technique with the horse in dorsal recumbency. **A,** The "roaring" burr is placed into the laryngeal ventricle and rotated so that the head of the burr engages the mucosa of the laryngeal saccule. **B,** Once the saccule is firmly engaged, it is everted into the lumen of the larynx by steadily pulling on the burr. **C,** A large hemostat is placed across the saccule immediately adjacent to the vocal fold, and the burr is removed. **D,** The saccule is completely excised using Metzenbaum scissors adjacent to the hemostat.

Laryngotomy is performed with a #10 scalpel blade. A burr is introduced into the ventricle to its depth and twisted, engaging the mucosa in the projections on the burr (Fig. 44-9, A and B). Occasionally, the ventricle is so large that it is necessary for the operator to press on the laminar portion of the arytenoid cartilage to enable the burr to engage the mucosa of these large saccules at their apex. The burr is then withdrawn slowly from the ventricle, everting the attached saccule. Swallowing

usually occurs during this procedure and helps evert the sacculi. A large hemostat is placed across the everted sacculi proximal to the head of the burr (see Fig. 44-9, C), and with traction on the clamp, a second clamp is placed behind it. With digital pressure on the opening of the ventricle, the entire sacculi are everted and then excised with Metzenbaum scissors (see Fig. 44-9, D). The same procedure is repeated on the opposite ventricle, which is allowed to heal along with the laryngotomy incision by second intention. The author now performs this procedure as an outpatient surgery.

### **VENTRICULOCORDECTOMY**

Ventriculocorpectomy refers to the removal of the mucosal lining of the laryngeal ventricle as described earlier, as well as to removal of a crescent-shaped wedge of tissue from the leading edge of the vocal fold. Again, because this technique does not produce abduction of the arytenoid cartilage, its use as a sole procedure for most racing horses with laryngeal hemiplegia running over long distances is not recommended. However, its use to reduce noise in sport horses has been established.<sup>32</sup> It has also been documented that there is some reduction in airway obstruction using this technique. The horse is placed in dorsal recumbency with the head and neck extended. A laryngotomy is performed. The endotracheal tube can be removed if necessary to allow easier access to the ventricles, but usually this is not necessary. Ventriculectomy is performed as described earlier.

A 2-cm-long and 2-mm-wide, crescent-shaped wedge of tissue is removed from the leading edge of the vocal fold. Using a continuous suture of 2-0 polydioxanone, the outside (abaxial edge of the vocal fold) and inside (axial) border of the ventricle are apposed. Suturing limits hemorrhage at the time of surgery while lessening cicatrix formation and redundant tissue folds as the surgery site heals. Therefore, it leaves a smooth surface over the ventral half of the rima glottidis. This is repeated on the other side. Preoperative and postoperative care is the same as that given for ventriculectomy via laryngotomy.