

# Commissurorraphy in the Dog

© The Author(s) 2017

Reprints and permission:

sagepub.com/journalsPermissions.nav

DOI: 10.1177/0898756417701444

journals.sagepub.com/home/jov



Corinne Durand, DVM<sup>1</sup>

## Abstract

Commissurorraphy is a surgical procedure designed to move the lip commissure rostrally. This procedure may be helpful as a unilateral procedure in cases of unilateral mandibulectomy to support tongue function and improve esthetics. Bilateral commissurorraphy is utilized in cases of radical bilateral mandibulectomy and as a salvage procedure for support of bilateral mandibular fractures in cases where rigid surgical fixation is not feasible. Dehiscence is the most likely complication of commissurorraphy. Tension can be reduced at the rostral extent of the incision by utilizing mattress sutures, intravenous fluid tubing, and/or buttons to prevent tearing through sutures.

## Keywords

commissurorraphy, commissuroplasty, cheiloplasty, dogs

Commissurorraphy, a form of cheiloplasty, may be indicated to provide support for the tongue after mandibulectomy<sup>1-5</sup> or as a salvage procedure for bilateral pathological mandibular fractures when poor remaining bone quality precludes rigid fixation.<sup>6-8</sup> Commissurorraphy is defined as surgical closure of the lips rostral to the commissure. Closure is usually advanced to the level of the maxillary first or second premolar for mandibulectomies<sup>2,5</sup> or to the level of the canine tooth in cases of salvage procedure for pathologic mandibular fractures.<sup>3,7</sup> Lip advancement allows for retention of the tongue within the oral cavity, support of the rostral mandible, food retention, and prehension.<sup>6</sup> The most common complication with this procedure is dehiscence secondary to inherent tension, particularly at the rostral-most extent of the incision. To minimize tension, horizontal mattress sutures can be placed through a button or rubber tubing at the rostral aspect of the incision to aid in tension distribution.<sup>1-5</sup> Postoperatively, it is important to prevent the patient from traumatizing the surgical site, therefore, an Elizabethan collar should be used. A soft food diet and toy restriction are necessary to prevent the patient from freely opening the mouth and to prevent tension on the surgical site in the 2-week postoperative period. Long-term complications associated with commissurorraphy include restricted access to the caudal dentition for home care by the owners and for ensuing dental procedures as well as diminished visibility for subsequent oral intubation.

## Materials

- Monocryl, Ethicon, Somerville, New Jersey.
- Ethilon, Ethicon, Somerville, New Jersey.



**Figure 1.** Photograph of the left commissure with the patient in right lateral recumbency.

<sup>1</sup> Dentistry Service, Metropolitan Veterinary Associates, Valley Forge, PA, USA

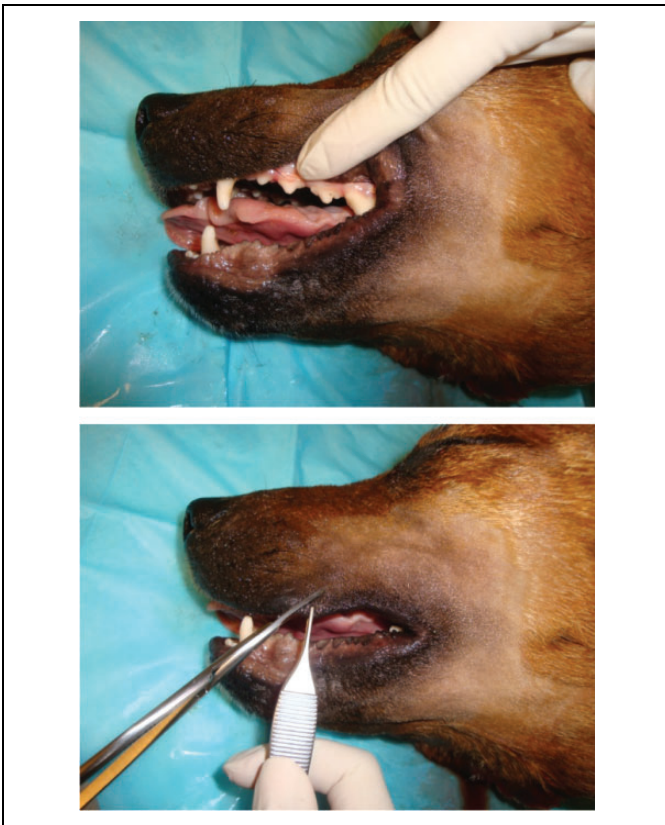
## Corresponding Author:

Corinne Durand, Dentistry Service, Metropolitan Veterinary Associates, 2626 Van Buren Ave, Valley Forge, PA 19482, USA.

Email: cdurand@metro-vet.com



**Figure 2.** The skin around the commissure is clipped (A) and prepared with chlorhexidine scrub, carefully avoiding the oral mucosa (B). Alternatively, to avoid mucosal ulceration, the area around the commissure and skin can be prepared with povidone-iodine scrub and the oral cavity may be rinsed with 0.12% chlorhexidine solution.



**Figure 3.** The area to be excised is marked. This is accomplished by identifying the area of the maxillary labia adjacent to the maxillary second premolar tooth (A). A full thickness excision is accomplished with Mayo scissors or with a #15 scalpel blade (B).



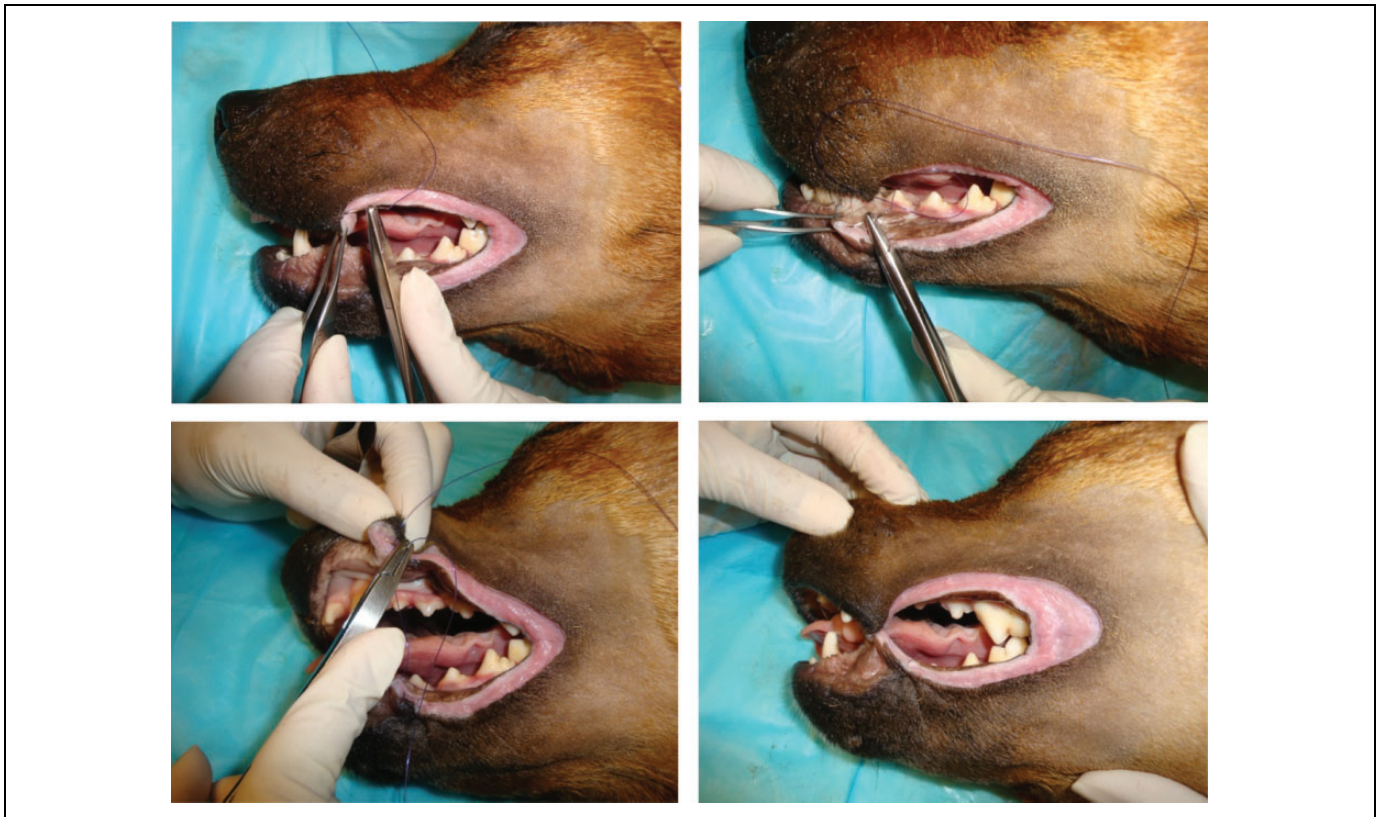
**Figure 4.** Alternatively, a sagittal split of the lip without removing the lip margin is created by inserting a #15 scalpel blade into the lip approximately 1 cm deep and advancing the blade to separate the skin from the oral mucosa.



**Figure 5.** Photograph showing the measurement of the end of the incision of the mandibular labia adjacent to the interdental space of the mandibular second and third premolar teeth (A). An incision is made over this area to mark the rostral end of the excision (B). The excision is extended caudally to the commissure and then continued over the mandibular labia to the area previously marked (B).



**Figure 6.** Photograph showing the complete excision of the marginal labial tissue.



**Figure 7.** A-D, Photographs showing alignment of the maxillary and mandibular labia via placement of 3-0 polyglactone 25<sup>s</sup> in a horizontal mattress pattern at the most rostral edge of the incision. A button or plastic tubing can be placed for added support in this high-tension area.



**Figure 8.** A and B, Photographs showing apposition of the oral mucosa with 4-0 poliglecaprone 25<sup>a</sup> suture in a simple interrupted pattern.



**Figure 9.** A and B, Photographs showing the apposition of the subcutaneous tissue with 4-0 poliglecaprone 25<sup>a</sup> suture in a simple continuous pattern.



**Figure 10.** Photograph showing apposition of the skin layer with 4-0 nylon<sup>b</sup> suture in a simple interrupted pattern. The process can be repeated on the contralateral commissure if necessary. Skin sutures are removed in 14 days.



**Figure 11.** Photograph demonstrating tension-relieving options. On the left are buttons made from the plunger of a 1-mL syringe. The end of the plunger may be removed with nail trimmers or a dental bur. Button holes are made using a #2 round bur on a high-speed hand-piece drill. On the right are stents made out of cut pieces of sterile intravenous fluid tubing. The button or intravenous tubing can be incorporated at the rostral margin of the commissurorraphy using a horizontal mattress suture technique. This will aid in tension distribution and can minimize the likelihood of dehiscence.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### References

1. Verstraete FJM. Mandibulectomy and maxillectomy. *Vet Clin North Amer Small Anim Pract.* 2005;35(4):1009-1039.
2. Radlinsky MC. Surgery of the digestive tract: surgery of the oral cavity and oropharynx. In: Fossum TW, ed. *Small Animal Surgery.* 4th ed. St Louis, MO: Mosby; 2013:386-424.
3. Anderson GM. Digestive system: soft tissue of the oral cavity. In: Tobias KM, Johnston SA, eds. *Veterinary Surgery: Small Animal.* St Louis, MO: Saunders; 2012:1425-1447.
4. Meyers B, Boy SC, Steenkamp G. Diagnosis and management of odontogenic myxoma in a dog. *J Vet Dent.* 2007;24(3):166-171.
5. Lantz GC. Mandibulectomy techniques. In: Verstraete FJM, Lommer MJ, eds. *Oral and Maxillofacial Surgery in Dogs and Cats.* London, UK: Saunders; 2012:467-479.
6. Marretta SM. Maxillofacial surgery. *Vet Clin North Amer Small Anim Pract.* 1998;28:1285-1296.
7. Marretta SM. Maxillofacial fracture complications. In: Verstraete FJM, Lommer MJ, eds. *Oral and Maxillofacial Surgery in Dogs and Cats.* London, UK: Saunders; 2012:333-341.
8. Hale FA. Management of bilateral, pathological, mandibular fractures in a dog. *J Vet Dent.* 2002;19(1):22-24.