

# Transoral Chondrolaryngoplasty: Safe, Effective Gender-Affirming Surgery in an Adolescent-Young Adult

Patrick Kiessling, MD<sup>1</sup>; Brian Nuyen, MD<sup>1</sup>; Karthik Balakrishnan, MD, MPH<sup>1,2</sup>; Julia Noel, MD<sup>1,3</sup>; Kara Meister, MD<sup>1,2</sup>

<sup>1</sup>Department of Otolaryngology – Head & Neck Surgery, Stanford Health Care, Stanford, CA; <sup>2</sup>Division of Pediatric Otolaryngology – Head & Neck Surgery; Lurie Packard Children’s Hospital, Stanford Children’s Health, Stanford, CA; <sup>3</sup>Division of Otolaryngology – Head & Neck Surgery, Santa Clara Valley Medical Center, San Jose, CA.



## Presentation

As part of a multidisciplinary gender clinic at a children’s hospital, this transgender female patient presented for consideration of chondrolaryngoplasty 9 months into gender transition, initiated at 19 years old. She was taking estradiol hormonal therapy and had been enrolled in speech therapy for several months with progress made towards a more feminine pitch. She had not had any previous neck surgery and felt that her neck appearance significantly hindered her confidence and was a barrier to her wellness. On physical exam, she had a prominent thyroid cartilage and thyroid notch (1). After discussion of the risks, benefits, and alternatives, including open cervical approach, plans were made to proceed to the operating room for endoscopic transoral vestibular approach to chondrolaryngoplasty.

The patient was publicly insured. Though initially denied coverage for this surgery, an appeal was made, since directives regarding treatment for gender dysphoria now apply to every plan bought and sold in California. This includes Medi-Cal managed care plans, plans purchased on the individual market or through Covered California, and employer-sponsored plans, with the exception of self-funded employer plans. Authorization was approved, and she proceeded with surgery.



## Surgery & Outcomes

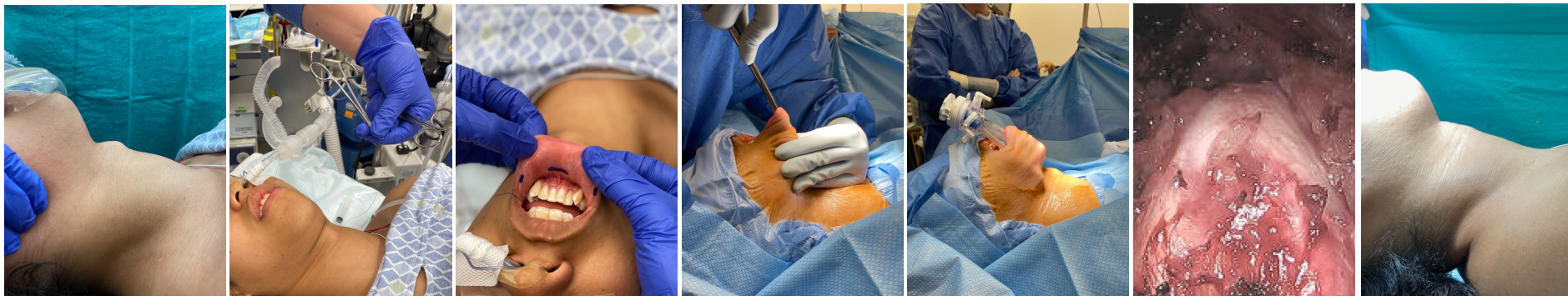
Following microdirect laryngoscopy to assess the airway, a 4-0 prolene suture on a straight needle was passed into the airway transcervically through the thyroid cartilage, just superior to the level of the true vocal folds in the midline, and pulled through transorally (2). This marked the inferior-most point of safe cartilage removal. The patient was transnasally intubated, and the planned incisions were marked on the lower lip at the wet-dry lip junctions (3). Ports were placed via the incisions centrally (12 mm) and laterally on each side (5 mm), through which dissection was carried out in a subplatysmal, supra-strap plane down to the level of the thyroid cartilage (4,5). The suture was identified, though inadvertently cut during dissection, so a 22-gauge needle was passed transcervically through the thyroid cartilage, just above the level of the true vocal folds, to re-establish the inferior extent of cartilage removal. After the perichondrium at the superior aspect of the cartilage was removed using a D-knife, the arthroscopy shaver was used to shave down the anterosuperior aspect of the thyroid cartilage, rounding the contour to achieve the desired appearance while preserving the structural integrity of the larynx (6). When the chondroplasty was deemed sufficient (7), the strap muscles were endoscopically sutured over the face of the thyroid cartilage. The camera and ports were then removed. The lip incisions were closed with absorbable suture, and a pressure dressing was placed on the submentum. One week after surgery, the patient demonstrated normal voice and airway function, and was very pleased with her neck appearance, saying it made her feel “liberated.” At 6-month follow-up, she had sustained satisfaction with the results.

## Discussion & Conclusions

Chondrolaryngoplasty (“tracheal shave”) is a procedure performed for trans feminine patients to feminize neck appearance by flattening the laryngeal prominence. First described in 1975, chondrolaryngoplasty has been shown to significantly improve patients’ quality of life.<sup>1,2</sup> Recently, the transoral vestibular approach to chondrolaryngoplasty has gained favor, employing a novel endoscopic approach.<sup>3,4</sup> The previously characterized technique of endoscopic suture placement to mark the inferior extent of cartilage resection<sup>3</sup> proved easy to transect during dissection, so our technique of placing a 22-gauge needle to mark this area may prove to be more robust in this procedure. The resulting scarless appearance of this approach prevents undue attentional bias towards the neck as compared to open approaches to this surgery.<sup>5</sup> Until now, this procedure was poorly characterized in the adolescent-young adult population. Here we demonstrate the safety and effectiveness of the procedure in this population as a part of this patient’s coordinated multi-disciplinary care.

This case confirms the role of otolaryngologists in providing comprehensive care for gender-diverse patients and asserts the need for further study of gender-affirming interventions. This work is especially relevant given the recent wave of transphobic legislation in multiple states banning access to gender-affirming care for children, adolescents, and young adults. Highlighting the safety and effectiveness of gender-affirming care helps address the need for objective data and characterizations of these interventions to appropriately care for this underserved population.

## Perioperative Images:



## References

1. Therattil PJ, Hazim NY, Cohen WA, Keith JD. Esthetic reduction of the thyroid cartilage: A systematic review of chondrolaryngoplasty. *JPRAS Open*. 2019 Aug 2;22:27-32. doi: 10.1016/j.jpra.2019.07.002. PMID: 32158894; PMCID: PMC7061662.
2. Satterwhite T, Morrison SD, Ludwig DC, et al. Abstract: Prospective Quality of Life Outcomes after Facial Feminization Surgery. *Plastic and Reconstructive Surgery – Global Open*. 2017. [in press].
3. Banuchi VE, Helman SN. Scarless Neck Feminization: Chondrolaryngoplasty Through Endoscopic Transoral Vestibular Approach. *Laryngoscope*. 2023 May;133(5):1099-1102. doi: 10.1002/lary.20326. Epub 2022 Sep 15. PMID: 36106862.
4. Eggerstedt M, Lee JC, Mendelsohn AH. Transoral Feminizing Chondrolaryngoplasty: Development and Deployment of a Novel Approach in 77 Patients. *Facial Plast Surg Aesthet Med*. 2022 Jun 14. doi: 10.1089/psam.2022.0016. Epub ahead of print. PMID: 35704261.
5. Liao D, Ishii LE, Chen LW, et al. Transoral neck surgery prevents attentional bias towards the neck compared to open neck surgery. *Laryngoscope*. 2020;130(6):1603-1608.