Case Report ISSN: 3066-6538

Surgery and Clinical Practice

Cold Steel Endoscopic Posterior Partial Cordectomy for Bilateral Abductor Vocal Cord Paralysis Post-Thyroidectomy: A Case Report and Literature Review

Enoch A Dahilo[1]* and Elizabeth Omosule[2]

[1]*Department of Otorhinolaryngology, university of Abuja/ University of Abuja teaching hospital Gwagwalada Abuja.*

[2]*Department of Otorhinolaryngology, University of Abuja teaching hospital, Gwagwalada Abuja.*

***Correspondence:**
Enoch A Dahilo, Department of Otorhinolaryngology, university of Abuja/University of Abuja teaching hospital Gwagwalada Abuja.

Received: 16 Dec 2025; **Accepted:** 23 Jan 2026; **Published:** 05 Feb 2026

Citation: Enoch A Dahilo, Elizabeth Omosule. Cold Steel Endoscopic Posterior Partial Cordectomy for Bilateral Abductor Vocal Cord Paralysis Post-Thyroidectomy: A Case Report and Literature Review. Surg Clin Prac. 2026; 3(1): 1-4.

ABSTRACT

Background: *Bilateral vocal cord paralysis following total thyroidectomy can lead to life-threatening respiratory distress. Conventional management, including tracheostomy, is associated with significant morbidity. Endoscopic procedures like posterior cordectomy- typically with coblation or LASER- are alternatives that aim to avoid permanent tracheostomies, which is particularly relevant in resource-poor settings. This report details the management of a patient who presented with progressive symptoms two years post-thyroidectomy.*

Methods: *A 40-year-old policewoman with bilateral abductor paralysis underwent an endoscopy-assisted cold steel posterior cordectomy. Under general anaesthesia, a rigid laryngoscope was used to confirm paramedian vocal cord positioning. The left cord, which was less mobile was operated on. After injecting adrenaline, a pair of micro-laryngeal scissors was used to make a 1 cm curvilinear incision to excise the posterior two-thirds of the left vocal cord, preserving the arytenoid to maintain an adequate glottic space.*

Results: *The patient was successfully extubated and discharged three days post-surgery. One month later, a video laryngoscopy revealed a polyp at the excision site, causing some respiratory distress. Following a course of oral and inhaled steroids, subsequent examinations showed a progressive improvement. By the third month, the polyp had completely resolved, and the patient's symptoms were gone. They were satisfied with their voice and reported no further aspiration or choking.*

Conclusion: *Cold steel Endoscopic posterior cordectomy is still an effective treatment option for patients with bilateral vocal cord paralysis following total thyroidectomy. As demonstrated by this case, careful surgical technique, and appropriate postoperative management, can lead to excellent long-term functional outcomes.*

Keywords

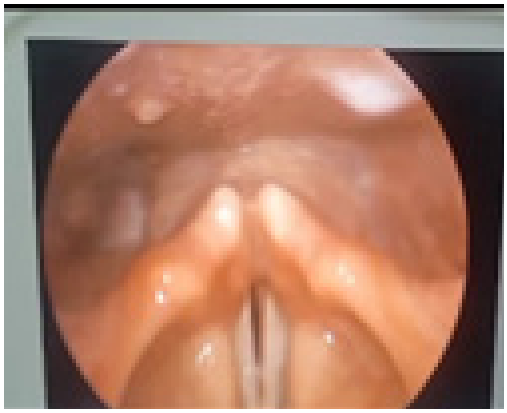
Bilateral vocal cord, Laryngoscope, Respiratory distress.

Background

Bilateral vocal cord paralysis following total thyroidectomy can lead to life-threatening respiratory distress and hoarseness. Conventional management, including tracheostomy, is associated with significant morbidity. Endoscopic procedures like posterior cordectomy are alternatives that aim to improve breathing while avoiding permanent tracheostomies, which is particularly relevant in resource-poor settings. This report details the management of a patient who presented with severe symptoms two years post-thyroidectomy.

E.M a 40-year-old police Officer who presented with 2 years history of progressive respiratory distress and change in voice after a total thyroidectomy procedure in another facility. At presentation she had biphasic stridor and was hoarse. No cough, no choking spells and no other co-morbidity. She had been offered tracheostomy which she declined and was also on thyroid supplementation.

Examination revealed features of moderate respiratory distress with otherwise stable vital signs. Video laryngoscopy showed Para median vocal cord with the right cord vibrating on exerted phonation, with total paralysis of the left cord.



Methods

Preoperative investigations- preoperative blood workup was normal and consent was given for the procedure.

Procedure - Patient was placed in a supine position with a shoulder roll and head-ring under general anaesthesia with a cuffed endotracheal tube size 5.5mm to allow adequate space for surgery and bring the larynx anteriorly. A rigid laryngoscope was introduced and fixed with the Kleinsasser Laryngostat. A 0-degree telescope was introduced to confirm paramedian vocal cord positioning. A decision to operate on the left cord had been taken earlier as it was the least mobile cord. Using a modified butterfly needle, a 2 ml of 1:100000 adrenaline solution was injected into the left vocal cord and left false cords. A 1 cm curvilinear cut was made at the posterior 2/3rd of the vocal cord, using micro-laryngeal scissors. Haemostasis was secured using adrenaline soaked pledgets. The arytenoids were spared as there was adequate glottic space for respiration. Laryngostat set up was removed after careful suctioning of secretions and blood from the airway.

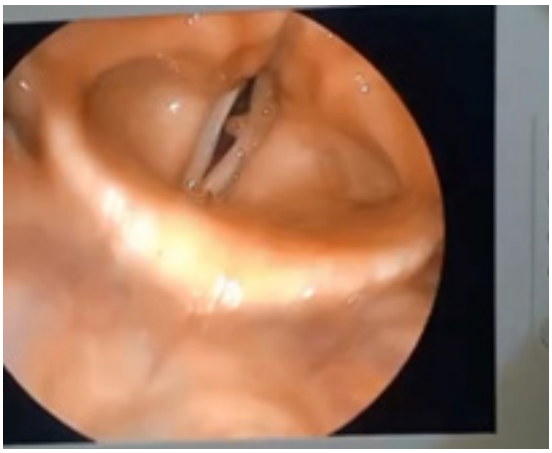
Results

The Patient was extubated without incidence and had a normal post operative course. She was discharged 3 days post op on oral steroid inhaler and systemic steroids for 1 week.

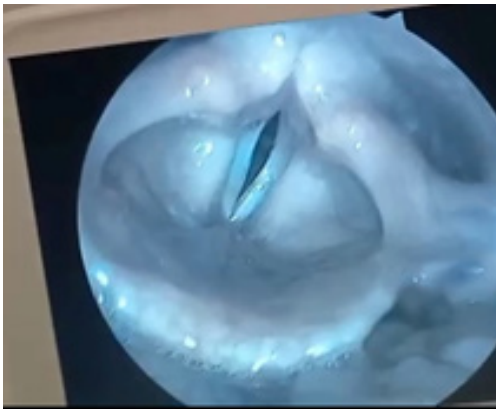
One-week post op clinic visit was without event. One-month post op- histology revealed normal vocal cords were excised with no features of atypia, however, she was noticed to be in some form of respiratory distress.

Video laryngoscopy revealed a polyp arising from the point of excision of the vocal cord she was then asked to continue the inhaled steroid and dexamethasone was added for 1 week and a monthly review was scheduled.

Picture 1: Vocal cords at 1-week post op.



Picture 2: Video laryngoscopy at 2 months post op.



Picture 3: Vocal cords 3 months post op showing complete resolution.

Normal video laryngoscopy at 3 months with complete resolution of symptoms. She was satisfied with her voice and reported no

further aspiration or choking.

In the last five years, endoscopic posterior cordectomy has been consistently recognized as an effective surgical option for managing airway obstruction, particularly in cases of bilateral vocal fold immobility.

Recent literature highlights advancements in surgical techniques, refinements in instrumentation (including contact diode and blue laser systems), and a focus on balancing airway patency with voice preservation. The procedure is seen as a viable alternative to permanent tracheostomy, offering a minimally invasive approach with reliable outcomes.

History and Evolutionary Trends

The management of bilateral vocal fold paralysis (BVFP) has historically prioritized airway patency over vocal quality. Beginning with external Woodman's arytenoidectomy in the mid-20th century, the field shifted toward endoscopic CO_2 laser-assisted techniques by the 1980s [1,2]. Contemporary literature (2020–2025) emphasizes a shift from "destructive" glottic widening to function-preserving and personalized approaches. Modern trends include the use of Coblation_for lower thermal injury and the emergence of office-based "blue laser" (445 nm) procedures, which allow for airway enlargement under local anaesthesia for high-risk patients [3-5].

Surgical Methods

- **Posterior Transverse Cordotomy (Dennis-Kashima):** A laser-created wedge in the posterior third of the vocal fold. It remains the gold standard for rapid airway relief [2,6].
- **Posterior Cordectomy with Partial Arytenoidectomy:** A more aggressive resection often utilized to ensure permanent decannulation, particularly in patients with high-grade obstruction [1,6].
- **Laryngoscopic Coblation Cordectomy:** An alternative to laser that uses radiofrequency plasma to ablate tissue, potentially reducing postoperative scarring and pain [5,7].
- **Suture Lateralization:** A reversible trend that shifts the vocal fold laterally via transcutaneous sutures, aiming to preserve more of the vibratory margin for better voice outcomes [3,8].

Comparative Outcomes

Table 1: Decannulation rate and voice quality metrics.

Procedure	Decannulation Rate	Voice Quality Impact
Posterior Cordotomy	~95–96%	Worsened; breathy voice common
Posterior Cordectomy	~97%	Significant dysphonia; poor perceptual scores
Partial Arytenoidectomy	~83%	Generally better than cordectomy/cordotomy
Suture Lateralization	~85–93%	Often better preservation of baseline voice

Decannulation Rates and Voice Quality Metrics

Current data highlights a consistent trade-off: high decannulation success at the cost of vocal stability.

Decannulation Rate (DR)- Systematic reviews report a 95.1% to 97% DR for posterior cordectomy alone [1,6,9]. When combined with arytenoidectomy, the rate increases to 98% [1].

Voice Handicap Index (VHI-10)- While patients report improved Quality of Life (VQOL) due to breathing, VHI-10 scores often show subjective worsening of 4.8 to 5 points [5,10].

Acoustic Parameters-Postoperative assessment typically shows a statistically significant decrease in Maximum Phonation Time (MPT) and increases in Jitter, Shimmer, and Noise-to-Harmonic (N/H) ratio [5,7].

GRBAS Scale- Perceptual analysis consistently reveals a worsening in Grade (G) and Breathiness (B) parameters following tissue resection [2,5].

References

1. Titulaer K, van der Poel EN, Heijnen BJ, et al. Impact of surgical interventions for bilateral vocal fold paralysis on airway and voice: A systematic review. Front Surg. 2022; 9: 956338.
2. Molteni G, Rossi V, Ghirelli M, et al. Endoscopic CO2 laser posterior cordotomy for bilateral vocal fold paralysis: Long-term respiratory and voice outcomes. J Clin Med. 2024; 13: 3670.
3. Lechien JR, Hamdan AL, Saussez S, et al. Modern surgical management of bilateral vocal fold paralysis: A systematic review and meta-analysis. Otolaryngol Head Neck Surg. 2024; 170: 1251-1264.
4. Hamdan AL, Btaiche R, Al-Amir S. Effect of posterior cordotomy on the acoustic and aerodynamic parameters in patients with bilateral vocal fold paralysis. J Voice. 2023.
5. Zamzam SM, El-Daly AS, Abdel-Baky MA, et al. Laryngoscopic coblation posterior cordectomy vs. CO2 laser in bilateral abductor vocal fold paralysis: A comparative study. Egypt J Otolaryngol. 2025; 41: 24.
6. Lechien JR, Khalife M, Hans S. Office-based blue laser posterior cordotomy for bilateral vocal fold paralysis. Laryngoscope. 2023.
7. Al-Sultani AS, Ali AA, Al-Amery AA. The impact of CO2 laser posterior cordotomy on the voice quality of patients with bilateral vocal fold paralysis. J Voice. 2023; 37: 294.e1-294.e9.
8. Habaza F. Advancements in laryngeal framework surgery and endoscopic widening for bilateral vocal fold immobility. J Voice. 2024.
9. Mathew A. Quality of life and functional outcomes following posterior cordectomy in bilateral vocal fold paralysis. J Voice. 2024.

10. Nemry N. Suture lateralization versus laser cordotomy: A comparative analysis of decannulation rates. J Otolaryngol Head Neck Surg. 2023.