

# Multidisciplinary Management of Intractable Recurrent Tracheal Stenosis after the Failure of Primary Repair: A Rare Case Report Putu Wisnu Arya Wardana<sup>1</sup>, Susan Hendriarini Mety<sup>2</sup>, I Wayan Sudarma<sup>3</sup>, Agung Wibawanto<sup>2</sup>

#### Introduction



- Failure of anastomosis after primary tracheal reconstruction for benign disease is uncommon.
- Treatment of tracheal restenosis involves careful consideration of modifiable surgical factors leading to failure.

#### **Case Presentation**

Male, 44-years old patient Chief complain: worsening shortness of breath History of respiratory failure due to COVID-19 with prolonged intubation in the intensive care unit

Tracheostomy was performed Followed by tracheal resection with end-to-end anastomosis

One month following the surgery, bronchoscopy evaluation showed granulation tissue on the anastomosis. Re-anastomosis with tissue refreshment and steroid injection was carried out

Two months after second surgery, the patient came with the same complain and reinsertion of tracheostomy tube was done.

Bronchoscopy evaluation showed a pinpoint opening of proximal trachea. Cryo-ablation followed by balloon dilatation and steroid injection was done.

Repeated cryo-ablation with balloon dilatation was done 4 months from the previous intervention. Tracheostomy tube was able to be decannulated

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Picture 1. Cervical CT scan of the patient (two month after the second surgery) showed a small opening of the trachea









Picture 2. (A) Bronchoscopy evaluation showed a pinpoint opening of proximal trachea trachea (approximately 1,5 cm below the vocal cord). (B) Tracheal opening was more than 50% of the lumen with stenosis length of 2,5 cm after cyro-ablation. (C and D) Cryo-ablation with balloon dilatation was done 4 months from the previous intervention



### Discussion

- Tracheal stenosis is a debilitating disorder with heterogeneity in terms of disease characteristics and management.
- There is no definitive consensus on the management of tracheal stenosis because the efficacy of surgical treatment in comparison with endoluminal treatment modalities mostly depends on the experience of the different referral centers.
- Fernando et al. showed the feasibility of spray cryotherapy and balloon dilation for non-malignant strictures of the airway, including benign tracheal stenosis
- Dalar et al. also used cryotherapy safely for the treatment of granulation tissue in a limited number of patients with complex stenosis

## Conclusion

Multidisciplinary approach is essential to manage intractable recurrent tracheal stenosis. Due to high surgical morbidity and risk for re-operation, bronchoscopic cryotherapy with balloon dilatation should be considered as a safe alternative for intractable recurrent tracheal stenosis.

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