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## Dynamic Bronchoscopy for Excessive Dynamic Airway Collapse

Jennier Salaski

CentraCare Health, jennifer.salaski@centracare.com

Krista Ophoven

CentraCare Health, ophovenk@centracare.com

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# Dynamic Bronchoscopy for Excessive Dynamic Airway Collapse

Jenni Salaski, RN,BSN and Kris Ophoven, RN,BSN,CGRN

St. Cloud Hospital- Endoscopy, St. Cloud, Minnesota

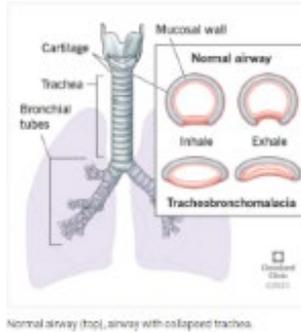


## Definition

Excessive Dynamic Airway Collapse (EDAC) is a respiratory condition characterized by >50% luminal narrowing on expiration.

## EDAC vs. TBM

EDAC and Tracheobronchomalacia (TBM) are often paired together. TBM is a condition characterized by a weakness of the tracheal support cartilage which leads to tracheal collapse. If there is significant atrophy of the posterior wall, causing significant obstruction of the trachea, it is known as EDAC.



## Risk Factors/Prevalence

True prevalence is challenging to define, but an overall prevalence of 13% has been suggested, and increases to 37% in patients with COPD and other airway diseases. Risk Factors include: small airway obstruction, chronic inflammation, trauma or previous tracheostomy, autoimmune diseases, connective tissue disorders, COPD, asthma, obesity, GERD, and there have been studies linking long term use of inhaled corticosteroids.

[Jennifer.salaski@centracare.com](mailto:Jennifer.salaski@centracare.com) [ophovenk@centracare.com](mailto:ophovenk@centracare.com)

## Procedure/Diagnostic

Dynamic Bronchoscopy is the gold standard for diagnosis of EDAC, as it allows real-time evaluation of the airway in inspiratory and expiratory phases. Dr. Ramakanth Pata, Pulmonologist, performs this procedure in the SCH Endoscopy unit.

Medications Needed -

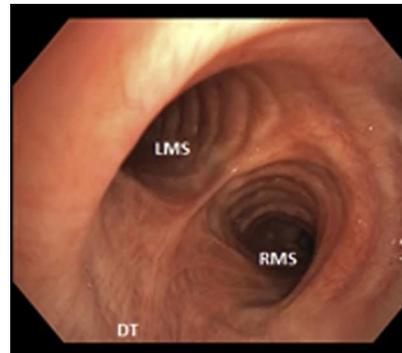
- Lidocaine 1% (have two available) -Dr. Pata to use to inject for nerve block and also to instill down bronch scope during procedure
- Hurricane Spray (should be sent up from pharmacy with spray extension tube)
- Lidocaine 2% (viscous) swish and spit

Conscious Sedation per RN- Fentanyl and Versed

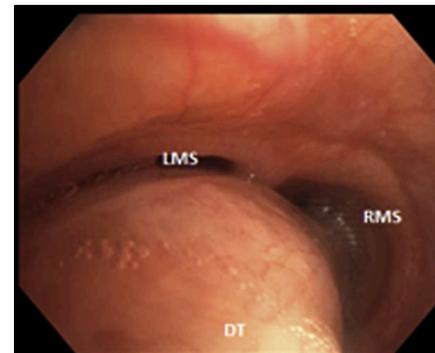
Will need a 25g, 1.5 inch needle for nerve block -Dr. Pata will do nerve block in procedure room just prior to starting of any sedation medications.

-It would be helpful to have two RNs available during procedure if able.

The patient will need to be awake enough to follow breathing instructions from Dr. Pata. This includes deep breathing, forced expiration, and coughing during procedure. Disease severity is described as mild airway collapse 70-80%, moderate 81-90%, severe 91% or greater.



Inspiration view of distal trachea



Forced expiration exhibiting severe excessive airway collapse

Submitted April 28th, 2023

## Symptoms and Treatment

**Symptoms-** asymptomatic most of the time, but in severe cases include:

- Shortness of breath on exertion
- Barking cough
- Wheeze/Expiratory stridor
- Inability to clear secretions
- Subsequent recurrent respiratory infections

## Treatment/Management Options

### Conservative Options

- Bronchodilators
- NIPPV (BIPAP/CPAP)

### Minimal Invasive Options

- Endoluminal airway stents
- Laser Therapy

### Surgical Options

- Tracheostomy
- Airway Splinting
- Tracheal Resection

## References

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