Vocal Cord Paralysis

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Cricothyroid muscle
- Tensor
- Adductor
Posterior cricoarytenoid
- The only abductor muscle
Vocal cord positions

- Six positions are described by Negus, 1947
  - Median
  - Paramedian
  - Cadaveric
  - Full abduction
Acquired Cord paralysis

- It is a sign of a disease and not a diagnosis
- It may be due to a lesion at any point from the cerebral cortex to the neuromuscular junction
- Left RLN is more affected than the right due to its longer course
Peripheral injury
• Total vagus
• SLN
• RLN

Acquired Cord paralysis

• Malignant disease
• Surgical trauma
• Idiopathic
• Nonsurgical trauma
• Inflammatory
• Neurologic
• Miscellaneous
Acquired Cord paralysis

- Malignant disease
- **Surgical trauma**
- Idiopathic
- Nonsurgical trauma
- Inflammatory
- Neurologic
- Miscellaneous

- Thyroid surgery
- Partial laryngeal surgery
- Tracheal resection
- Neck dissection
- Cardiac Surgery

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Acquired Cord paralysis

- Malignant disease
- Surgical trauma
- **Idiopathic**
- Nonsurgical trauma
- Inflammatory
- Neurologic
- Miscellaneous

- No cause is ever found for paralysis
- Follow up for at least 18 months
- Viral!
Acquired Cord paralysis

- Malignant disease
- Surgical trauma
- Idiopathic
- **Nonsurgical trauma**
- Inflammatory
- Neurologic
- Miscellaneous

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Acquired Cord paralysis

- Malignant disease
- Surgical trauma
- Idiopathic
- Nonsurgical trauma
- **Inflammatory**
- Neurologic
- Miscellaneous

- Viral
- Bacterial
Acquired Cord paralysis

- Malignant disease
- Surgical trauma
- Idiopathic
- Nonsurgical trauma
- Inflammatory
- Neurologic
- Miscellaneous

Chest causes

<table>
<thead>
<tr>
<th>Side</th>
<th>Condition</th>
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</thead>
<tbody>
<tr>
<td>Rt</td>
<td>Apical TB</td>
</tr>
<tr>
<td>Left</td>
<td>Cor pulmonale</td>
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<tr>
<td></td>
<td>Aortic aneurysm</td>
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<td></td>
<td>Open heart surgery</td>
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<tr>
<td></td>
<td>Mediastinal masses</td>
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<tr>
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<td>Hypertrophied heart</td>
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Assessment
Symptoms and Signs

SLN paralysis

• Voice
• Breathing
• Aspiration

Cord position
Phonation
Respiration
Aspiration
Slight hoarseness
No stridor
Slight

Unilateral RLN Paralysis

• Voice
• Breathing
• Aspiration

Cord position
Phonation
Respiration
Aspiration
Paramedian
Mild hoarseness
No stridor
Mild
Assessment of Symptoms and Signs

Bilateral RLN Paralysis

- Voice
- Breathing
- Aspiration

Cord position: Paramedian
Phonation: Mild hoarseness
Respiration: Severe stridor
Aspiration: Mild

Unilateral Vagal Paralysis

- Voice
- Breathing
- Aspiration

Cord position: Intermediate
Phonation: Breathy voice
Respiration: No stridor
Aspiration: Severe
Assessment Investigations

Radiology
- Chest X Ray
- Barium swallow
- CT Scan

Assessment Investigations

Laboratory
- CBC
- FBS
- TB
Assessment
Investigations

Panendoscopy
- Direct Laryngoscopy
- Bronchoscopy
- Esophagoscopy
- Nasopharyngoscopy

Treatment
Unilateral Paralysis

General rules
I. When
- Unless the nerve is mechanically interrupted recovery is the rule rather than the exception.
- Most recoveries take up from 6-12 months.
- In unrecoverable cases; the contralateral vc compensates by moving across the midline to achieve a satisfactory glottic closure.

So, Expectant policy is advised for 6-12 months + speech therapy before definitive treatment.
Treatment
Unilateral Paralysis

General rules

I. When
Indications for early surgical intervention
- Professional voice users
- If one could not expect complete or adequate recovery so the distress of weak voice and cough should be treated early.

Medialization procedures
- Intracordal Injection
- Surgical medialization
- Vocal fold reinnervation
Treatment
Unilateral Paralysis

Surgical Medialization Procedures ML
Laryngeal Framework Surgeries

I. Idea Isshiki 1974 (Thyroplasty I)
An implant is placed between the thyroid cartilage and the vocalis muscle to medialize the membranous vocal cord.
Treatment Bilateral Paralysis

Bilateral Paralysis

Paramedian position

Stridor
Bil. RLN injury

Lateralization
Widening procedures
Reinnervation

Arytenoidopexy
Endoscopic
Treatment
Bilateral Paralysis

Arytenoidopexy
External

Arytenoidectomy
External Approach
Treatment  
Bilateral Paralysis

Endoscopic  
• Posterior Cordectomy  
• Arytenoidectomy

Post partial cordectomy
Reinnervation

Reinnervation
Reinnervation

Treatment

Complete paralysis

Intractable aspiration
- Nasogastric tube, Cuffed tracheostomy
- Vocal cord augmentation, Cricothyroid myotomy
- Total Laryngectomy
- Surgical Closure of the larynx
  - Epiglottic flap operation
  - Diversion procedure
  - Glottic closure
  - Epiglottopexy