

# Bilateral selective laryngeal reinnervation

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2nd London

**Phonosurgery Course** 

PHONOSURGERY AND NEUROLARYNGOLOGY

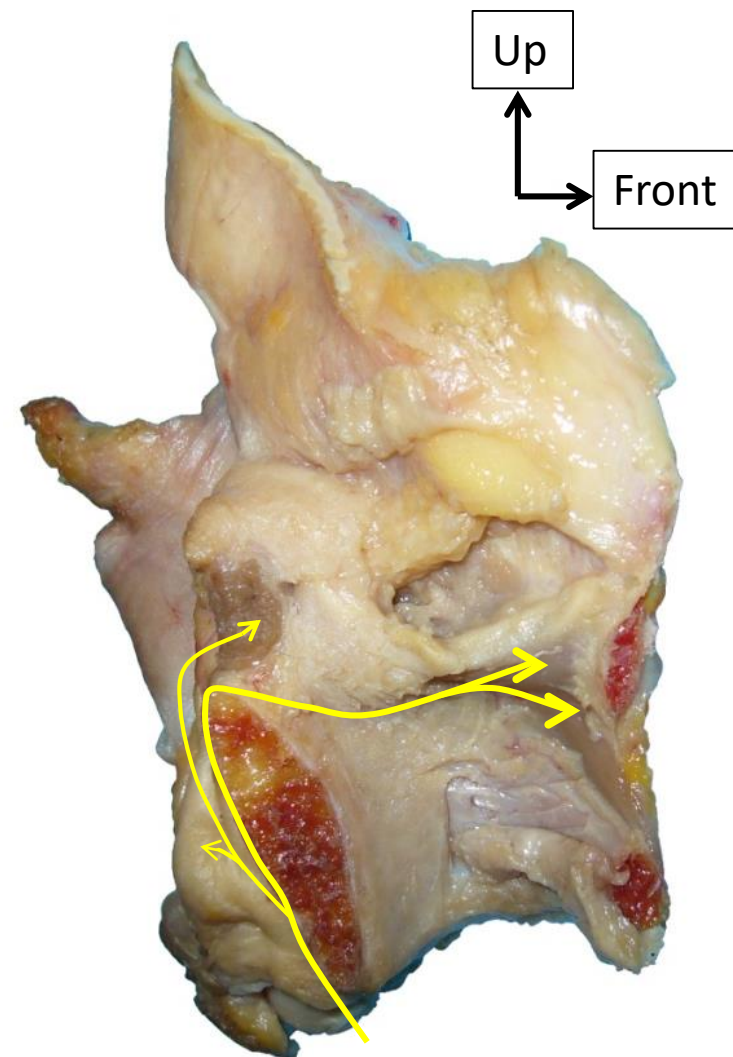
**Hands-On Dissection Course**

2-3 August 2022

# Principles of Bilateral selective laryngeal reinnervation

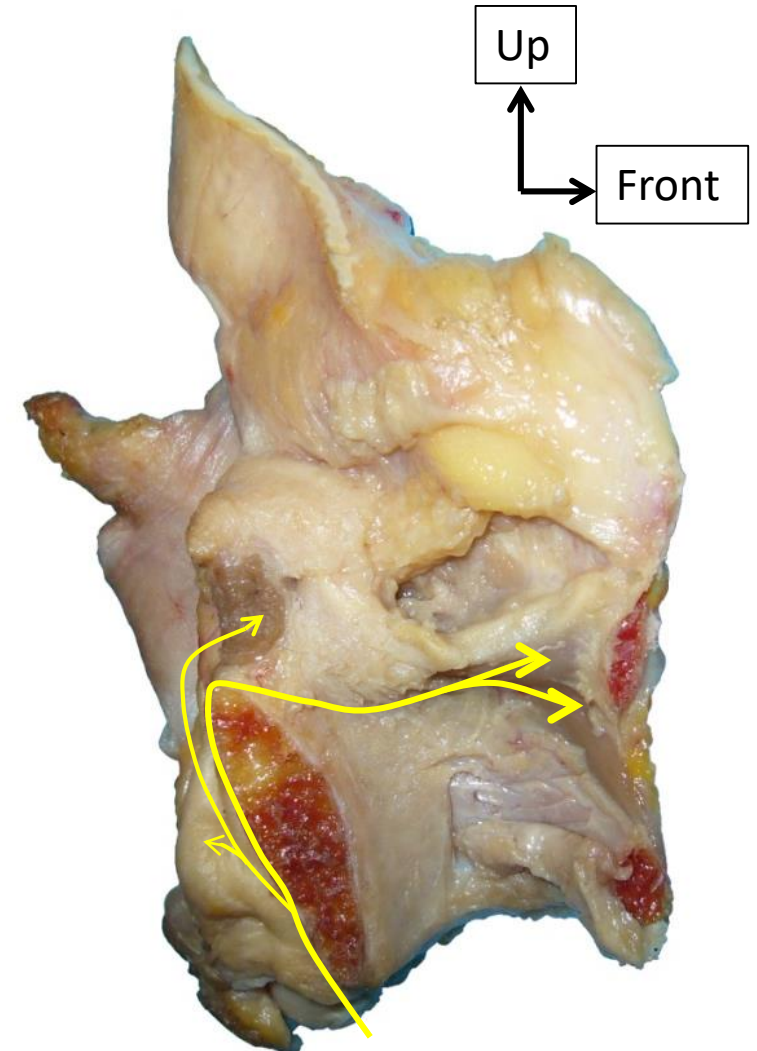
# Bilateral selective laryngeal reinnervation

- Surgical technique developed by Prof. JP Marie, Rouen, France
- Aims at recovering the differential innervation
  - of the abductor muscles
  - and of the adductor muscles
- No choice between voice and breathing
  - Big difference with all the glottic enlargement procedures
  - No scar on the vocal folds



# Bilateral selective laryngeal reinnervation

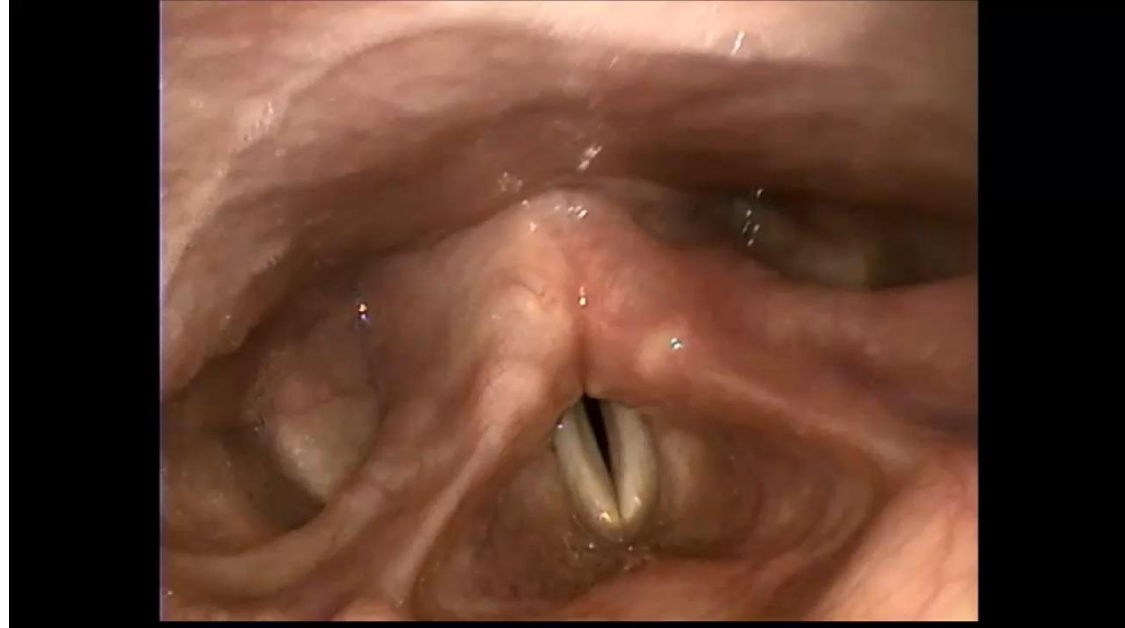
- Section of the recurrent nerves and selective reinnervation of ab/adductors
  - Separating the nervous pathway
  - To avoid unfavorable synkinesis
- Using regional nervous grafts
  - With activation during inspiration
    - Abduction
    - Strong innervation
  - With activation during phonation
    - Adduction
    - Slight innervation



Indications and contra-indications  
of  
Bilateral selective laryngeal reinnervation

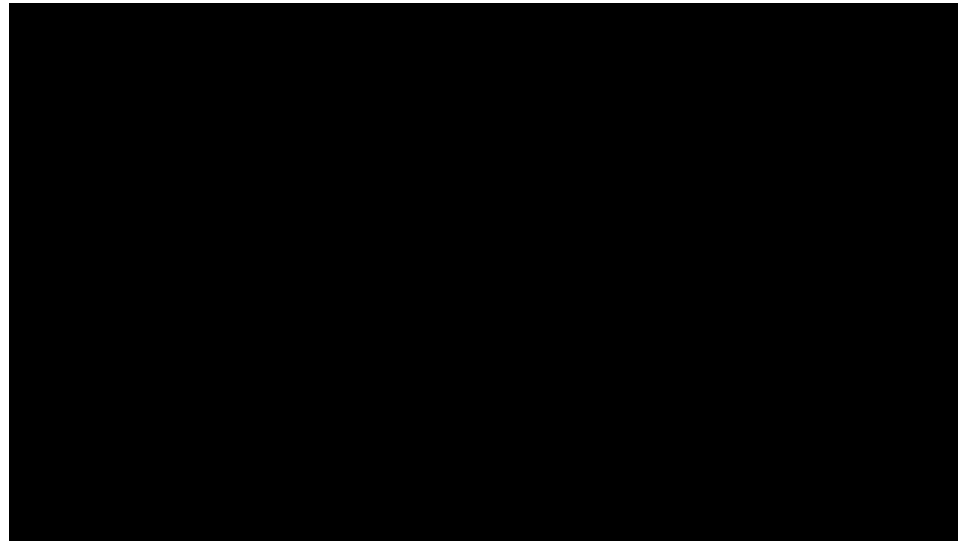
# Bilateral laryngeal paralysis

- Bilateral immobility (or unrelevant movements) due to some **neurogenic impairment**
  - It is mandatory to exclude the mechanical etiologies of bilateral laryngeal motion impairments



# Bilateral laryngeal paralysis

- Exclusion of the mechanical etiologies of bilateral laryngeal motion impairments
  - Endoscopic examination of the posterior commissure under GA



# Bilateral laryngeal paralysis

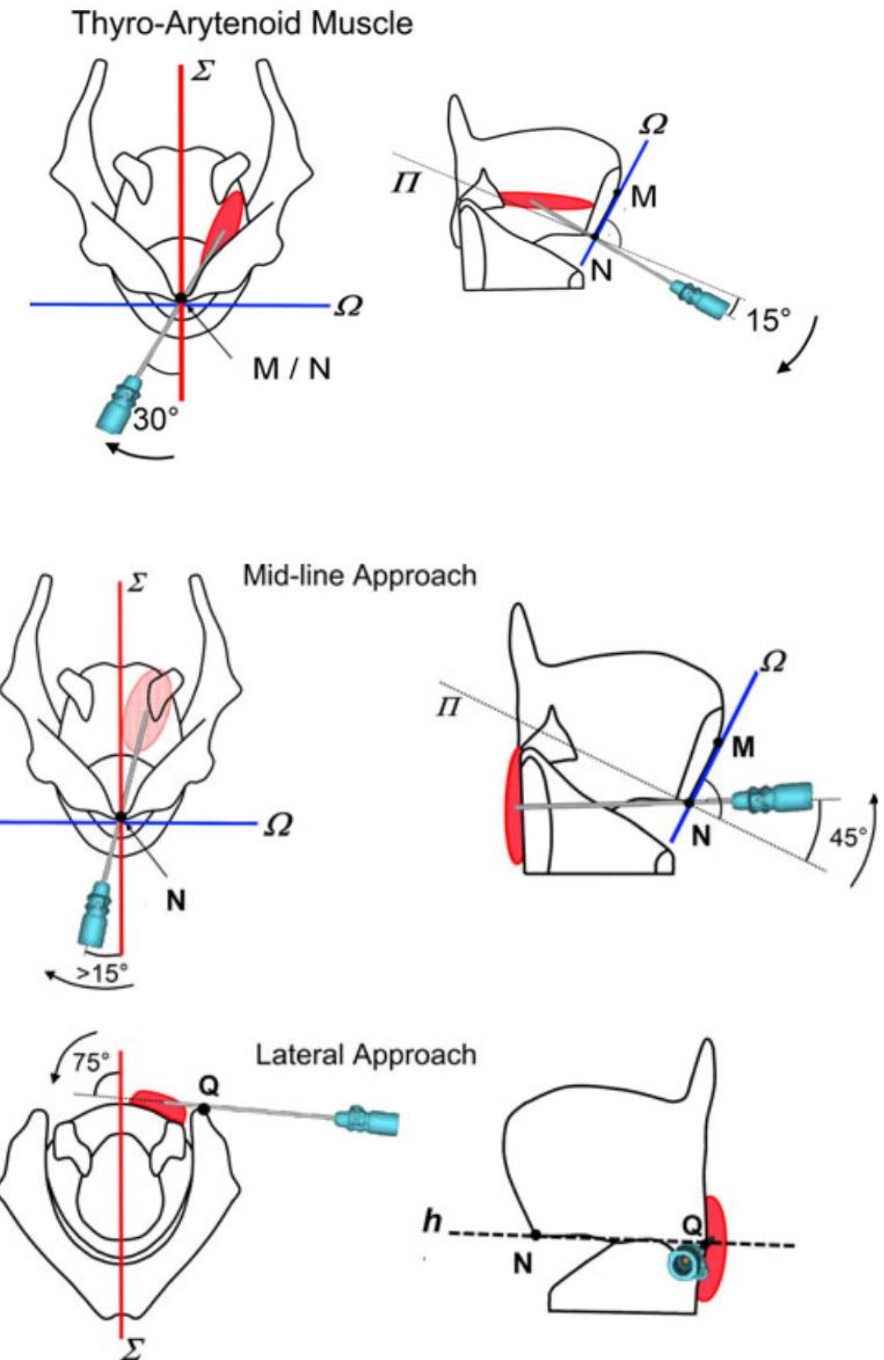
- Confirmed by LEMG
  - On both sides,
  - Of at least TA AND PCA
- Percutaneous approach

Eur Arch Otorhinolaryngol (2012) 269:2227–2245  
DOI 10.1007/s00405-012-2036-1

LARYNGOLOGY

## Laryngeal electromyography: a proposal for guidelines of the European Laryngological Society

Gerd Fabian Volk · Rudolf Hagen · Claus Pototschnig · Gerhard Friedrich · Tadeus Nawka · Christoph Arens · Andreas Mueller · Gerhard Foerster · Mira Finkensieper · Ruth Lang-Roth · Christian Sittel · Claudio Storek · Maria Grosheva · M. Nasser Kotby · Carsten M. Klingner · Orlando Guntinas-Lichius





# Bilateral laryngeal paralysis

- Confirmed by LEMG
  - On both sides,
  - Of at least TA AND PCA
- Endoscopic approach
  - Under sedation + local anesthesia of the larynx
  - Very important collaboration with the anesthesiologist
  - Technique preferred by JP Marie
    - Best certitude of the PCA EMG
    - Mechanical testing at the end of the procedure

# Bilateral laryngeal paralysis

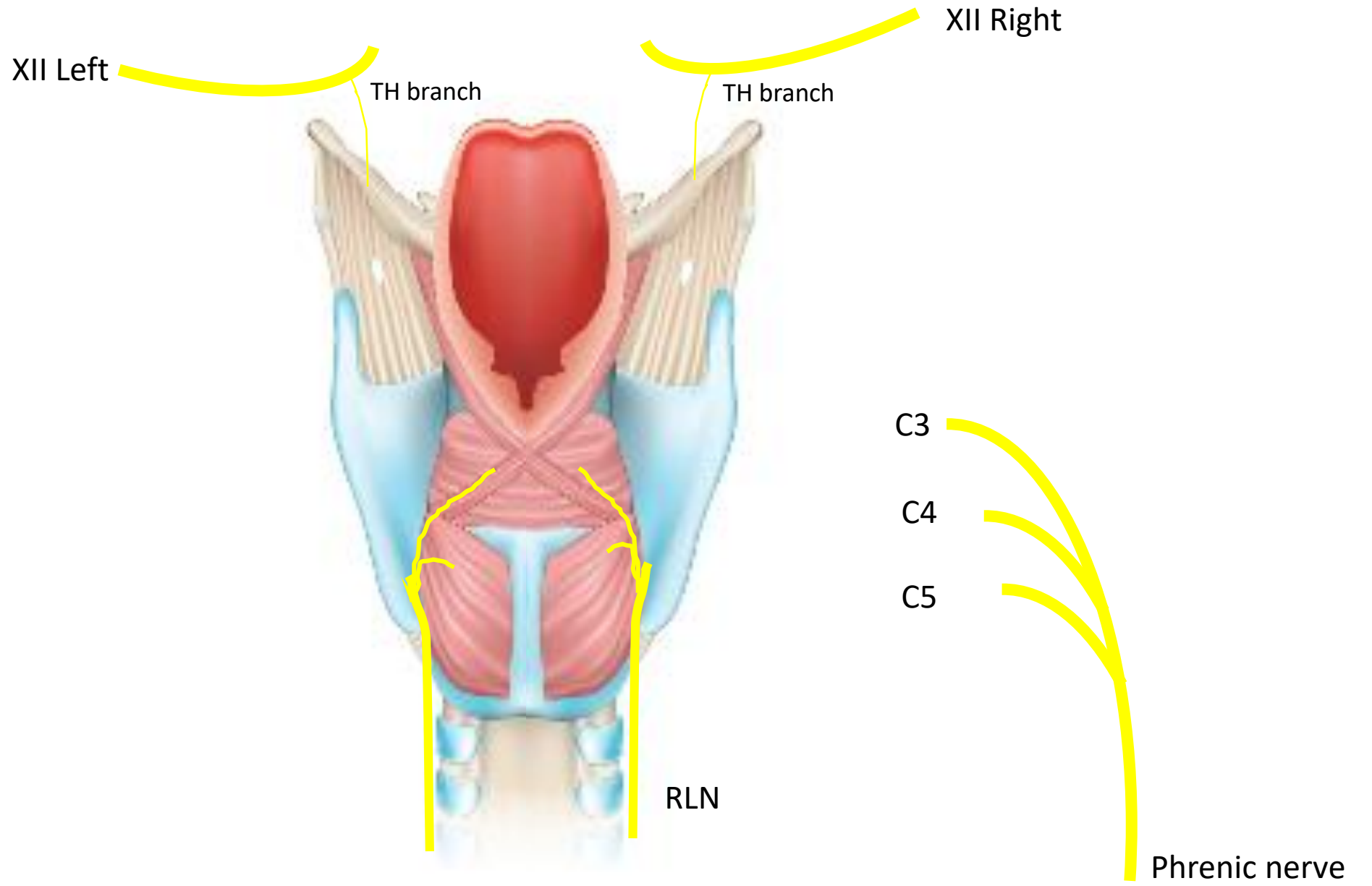
- Exclusion of neurogenic impairments from degenerative diseases
  - Classically: history of thyroidectomy
  - Or metachronous surgeries on both recurrent nerves
- **Avoid unknown etiology**
  - Possible Multi-Systemic Atrophy
  - Possible Amyotrophic Lateral Sclerosis

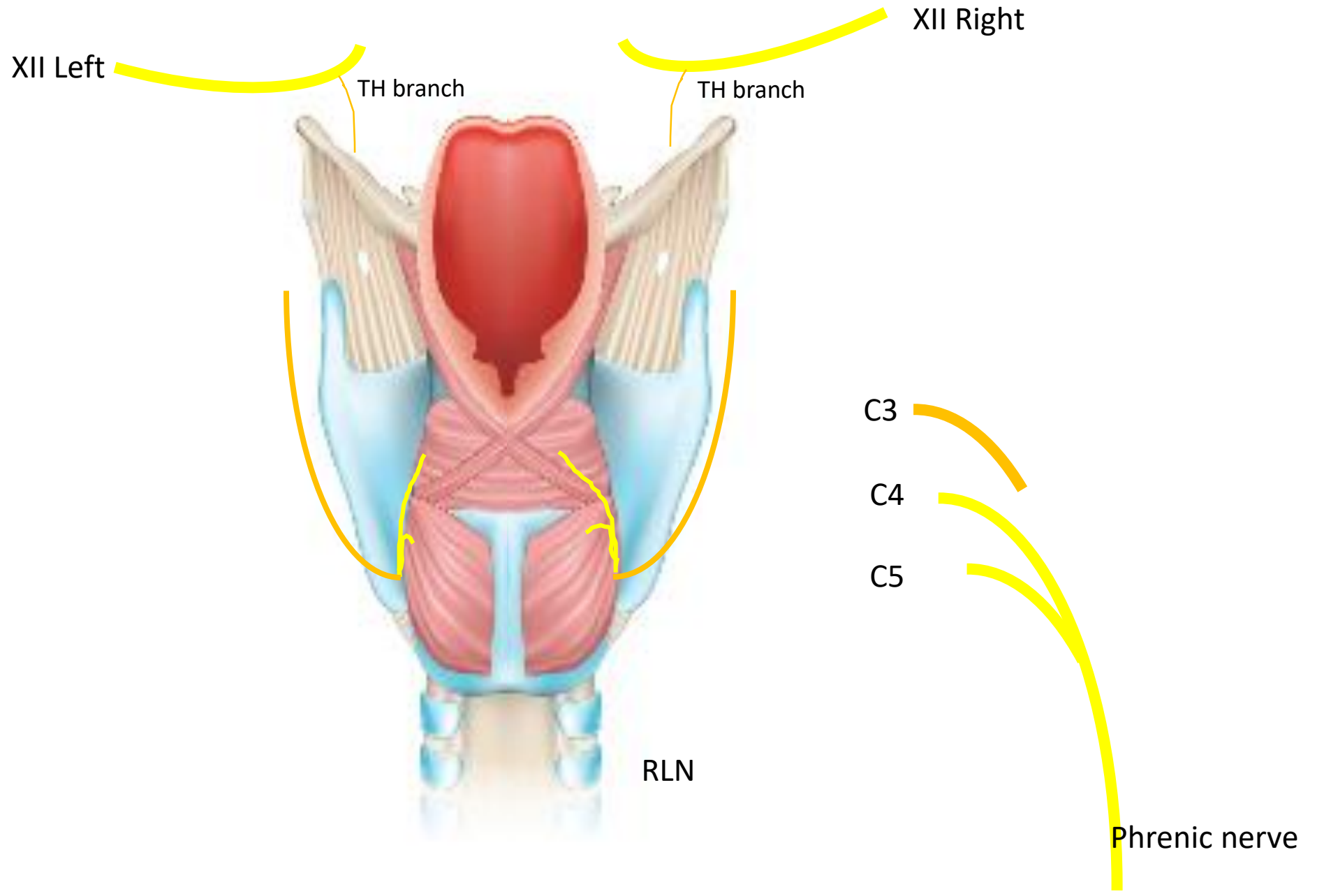


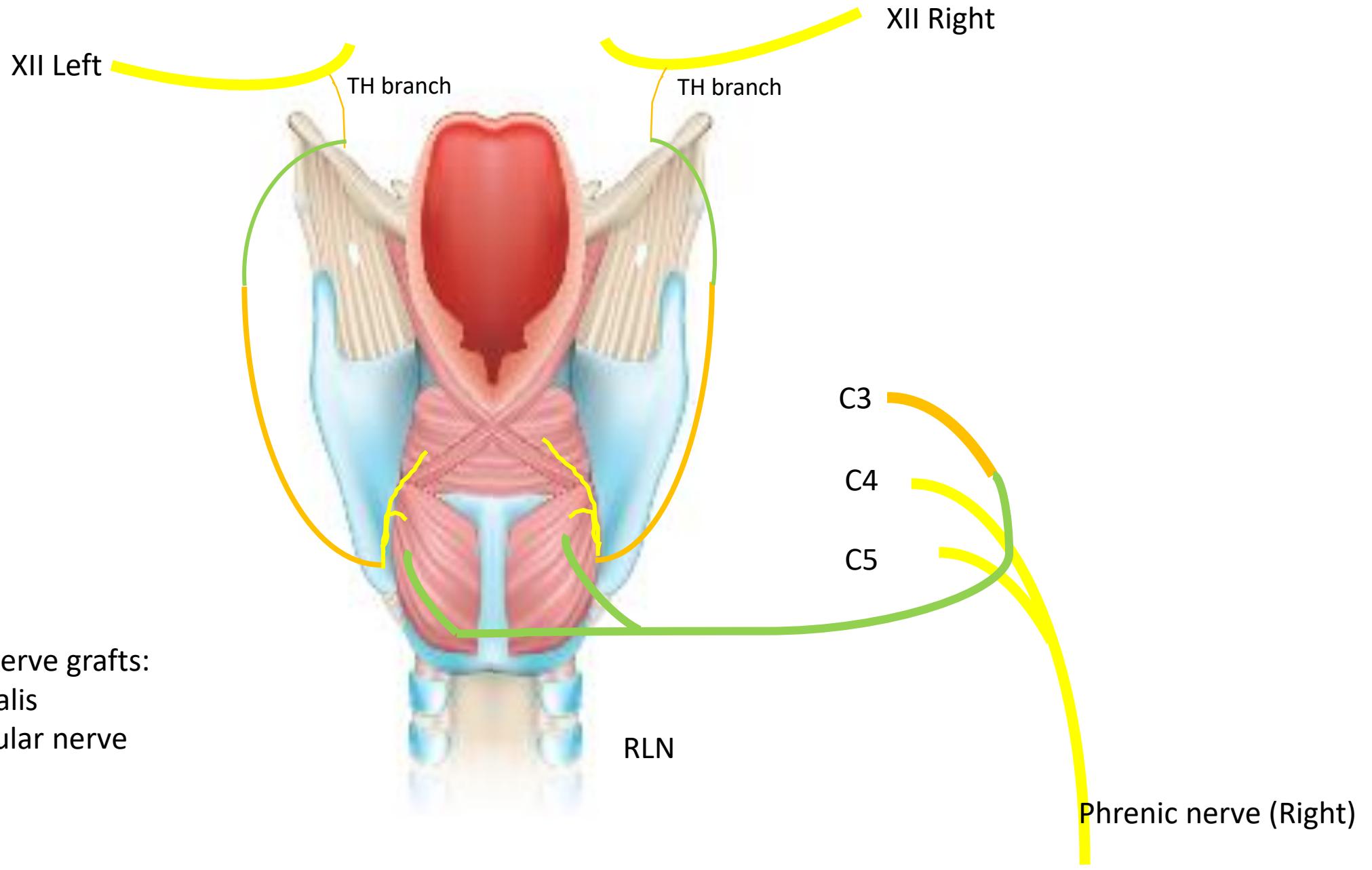
# Bilateral laryngeal paralysis

- Needs a section of the recurrent
  - No spontaneous recovery possible
  
- **Waiting time after the onset of the paralysis around 2 years**

Surgical procedure  
of  
Bilateral selective laryngeal reinnervation







- Interposition nerve grafts:
- Ansa cervicalis
  - Great auricular nerve

# Post-operative period and outcomes

- 10-12 hours of surgery
- Transitory tracheostomy
- Special care of swallowing in the early post-operative
  - Thicken diet
- Hospital stay about 7-10 days
  
- Immédiate laryngeal relaxation
- Reinnervation course during 12 months
- Oral communication with Pr Marie: 60-75% success



# Conclusion

- Quite complex surgery,
  - With lots of advantages in functional outcomes
- Very good selection of the patients
  - Most often after thyroidectomy
  - If no recovery after 2 years
  - Proof of absence of mechanical limitation of abduction
  - Proof of neurogenic impairment (LEMG)/ (+legal aspect)

- For more information,
- Next laryngeal reinnervation workshop
- On November 7-8 th 2022

<https://invivox.com/training?query=reinnervation>



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## LARYNGEAL REINNERVATION

- Pr Jean-Paul MARIE -



May 30th and 31st - International  
workshop on unilateral and bilateral  
laryngeal reinnervation

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