



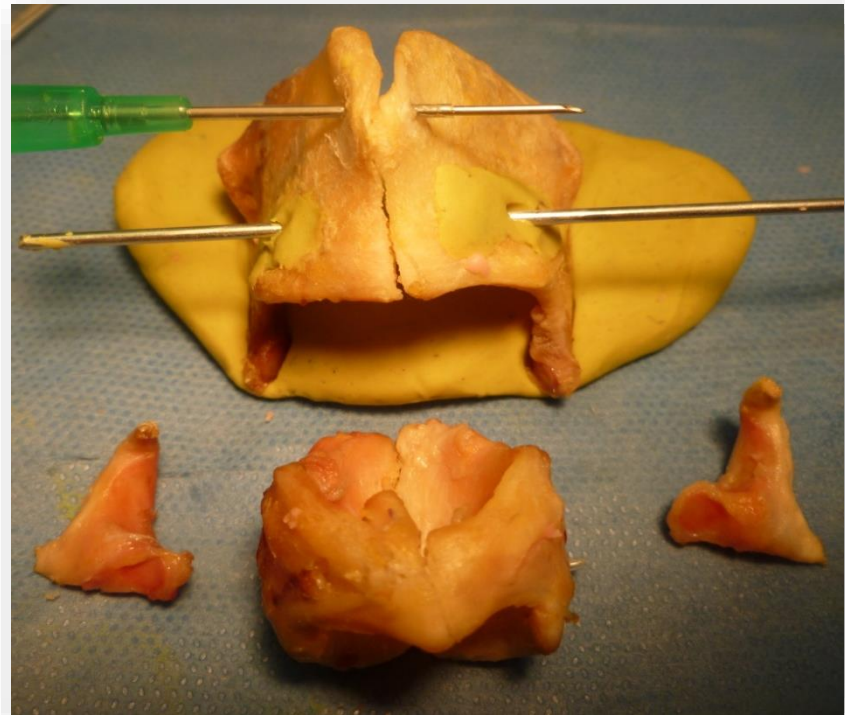
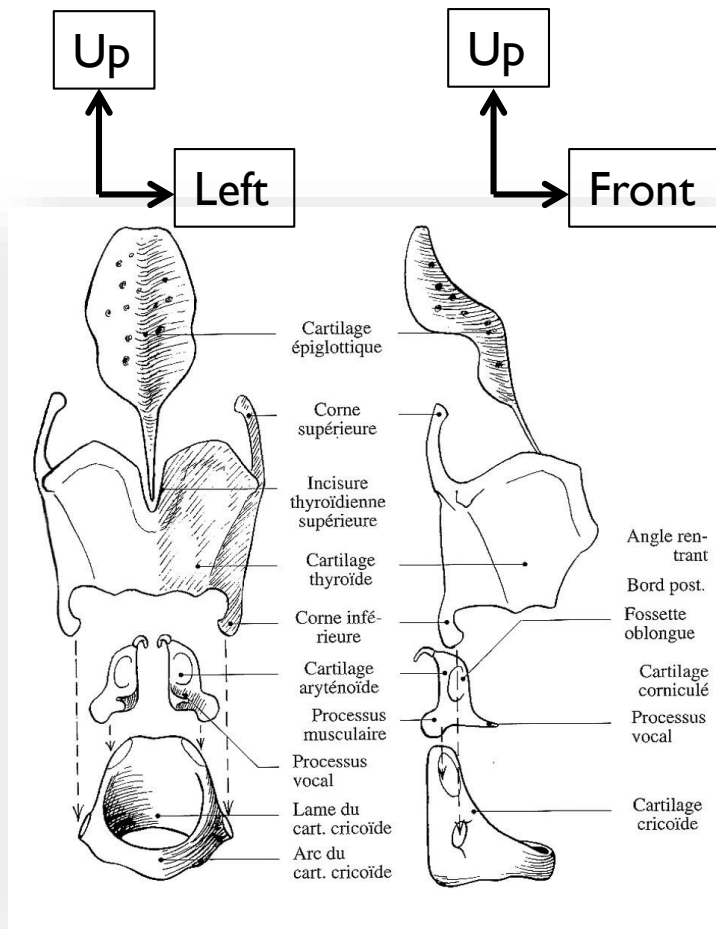


Anatomical bases of laryngeal mobility

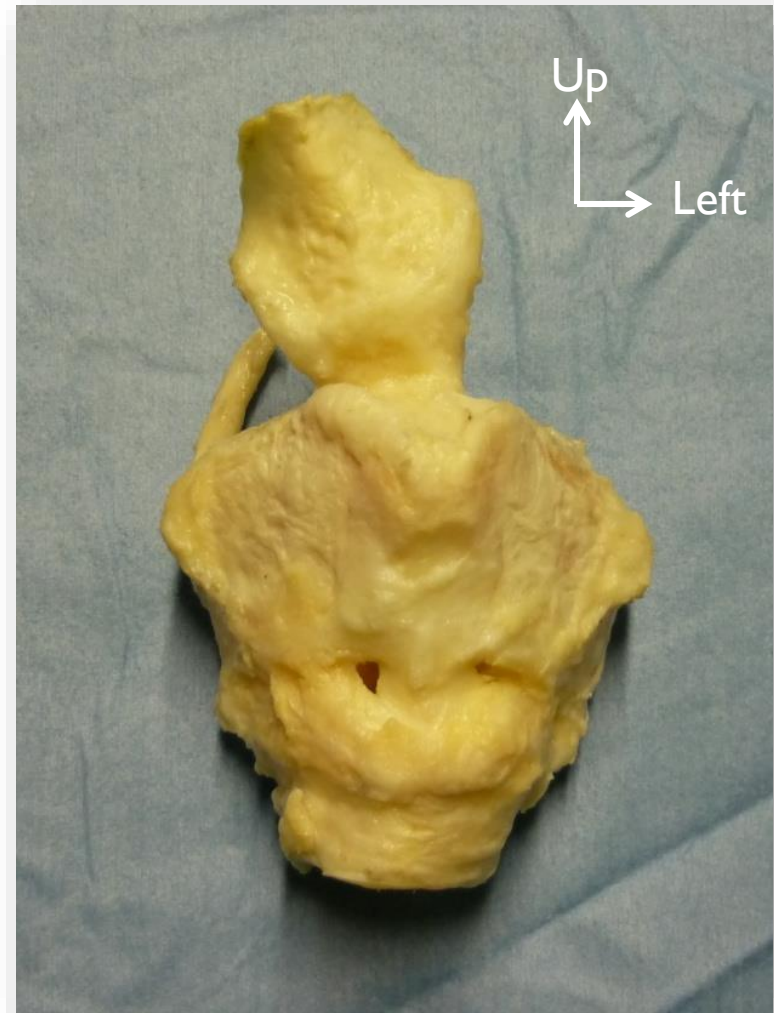
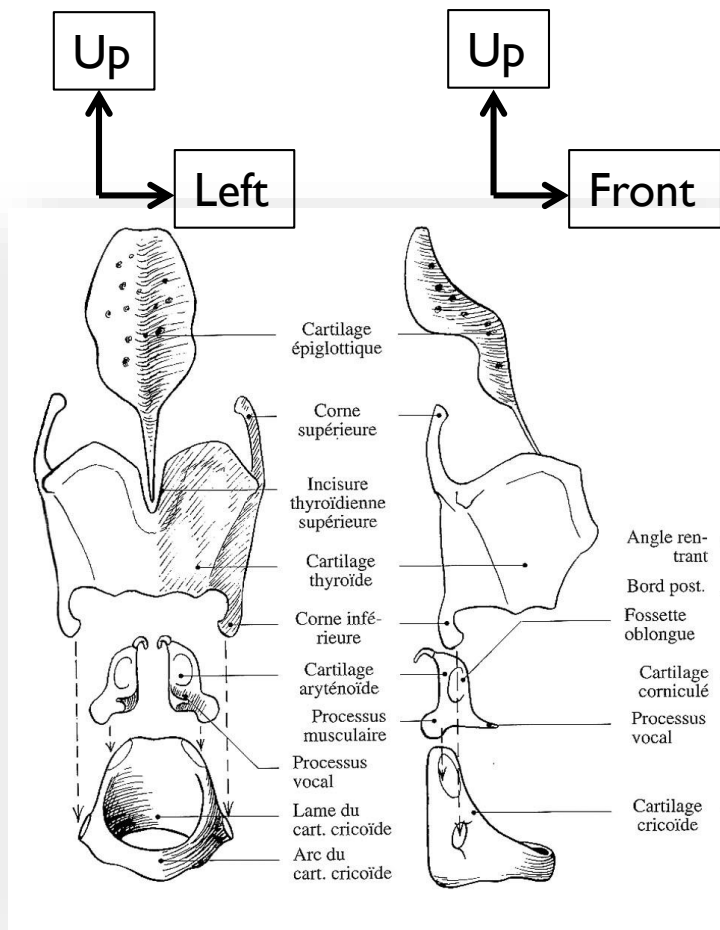
Aude Lagier

Cartilages and joints

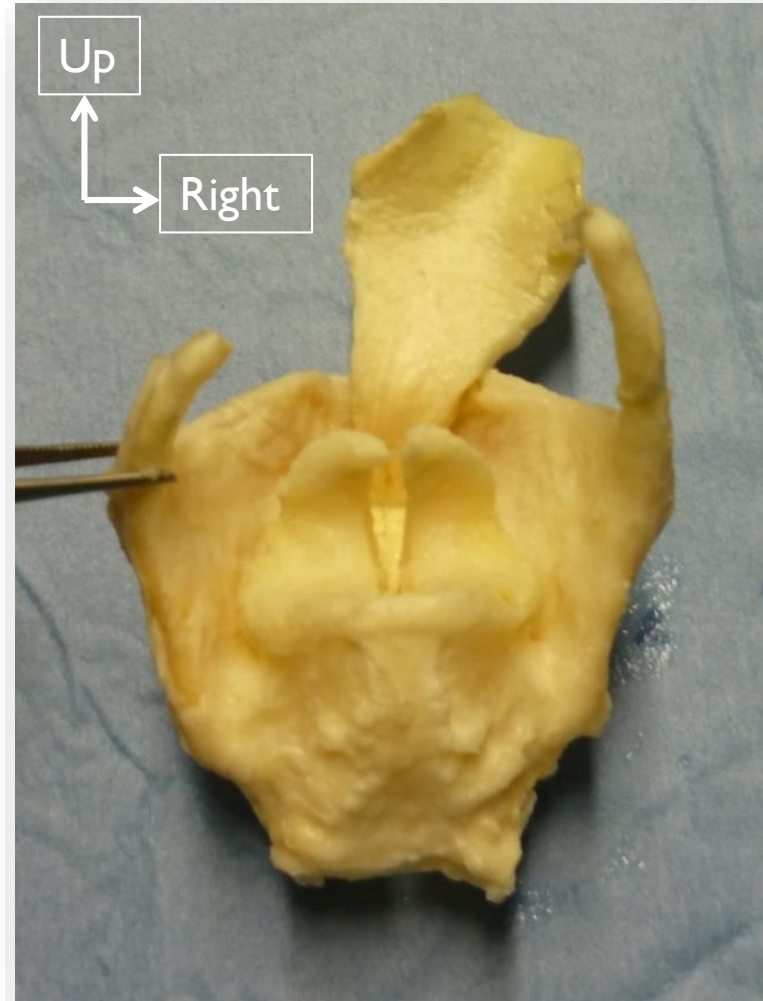
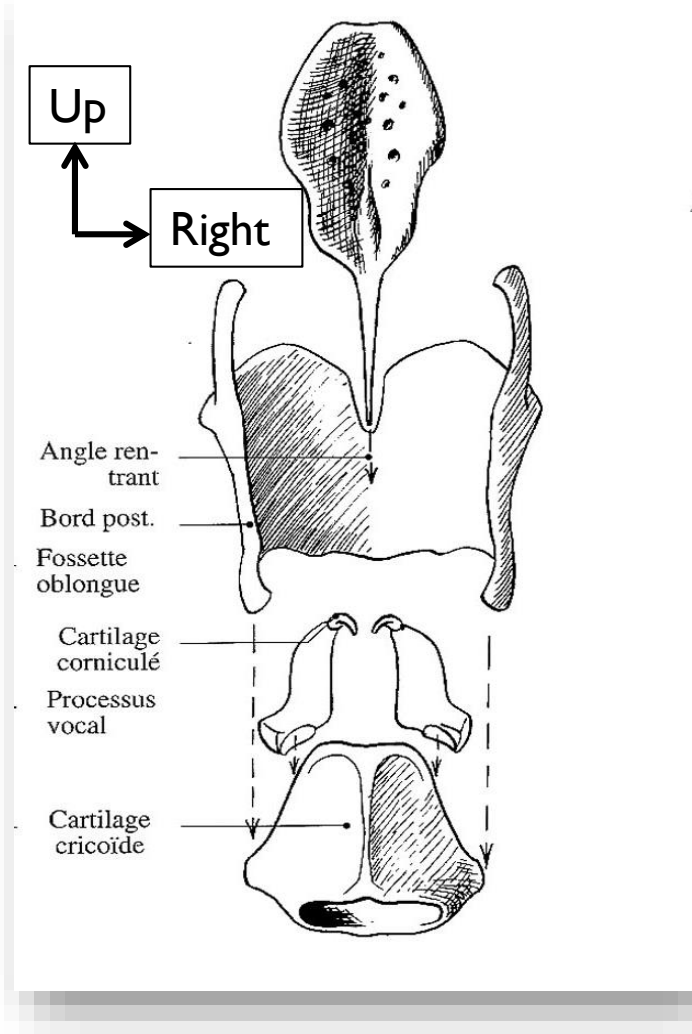
Cartilages and joints of the larynx

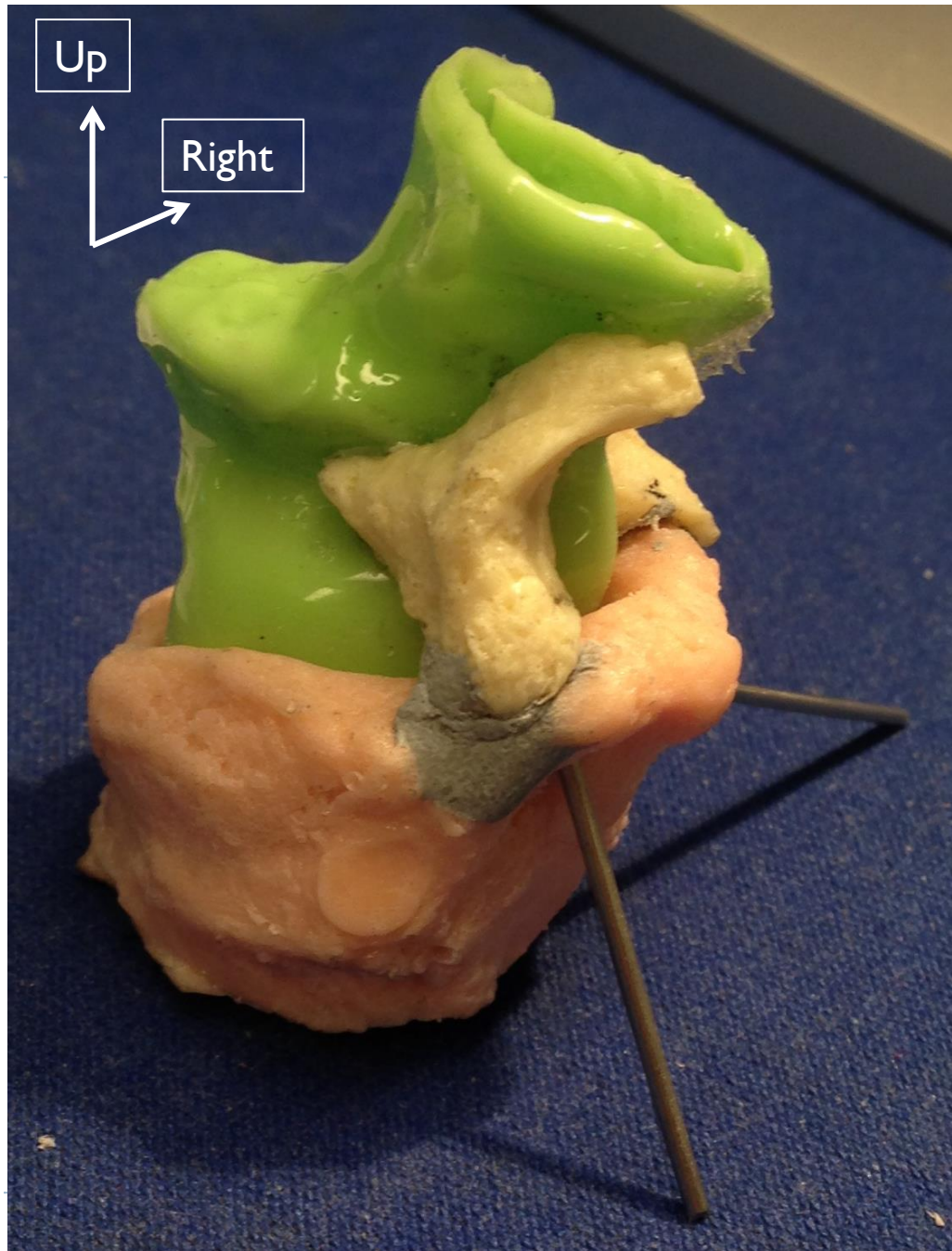


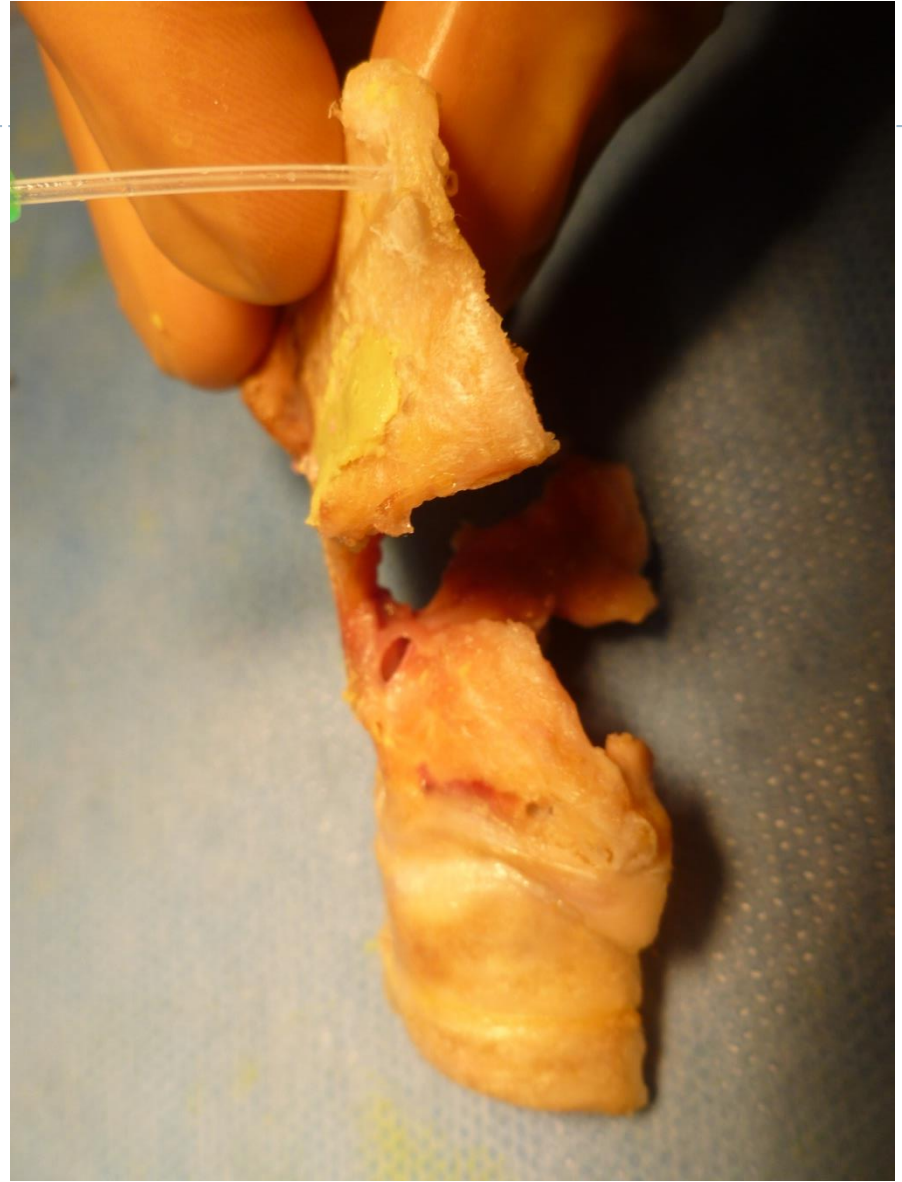
Cartilages and joints of the larynx



Cartilages and joints of the larynx







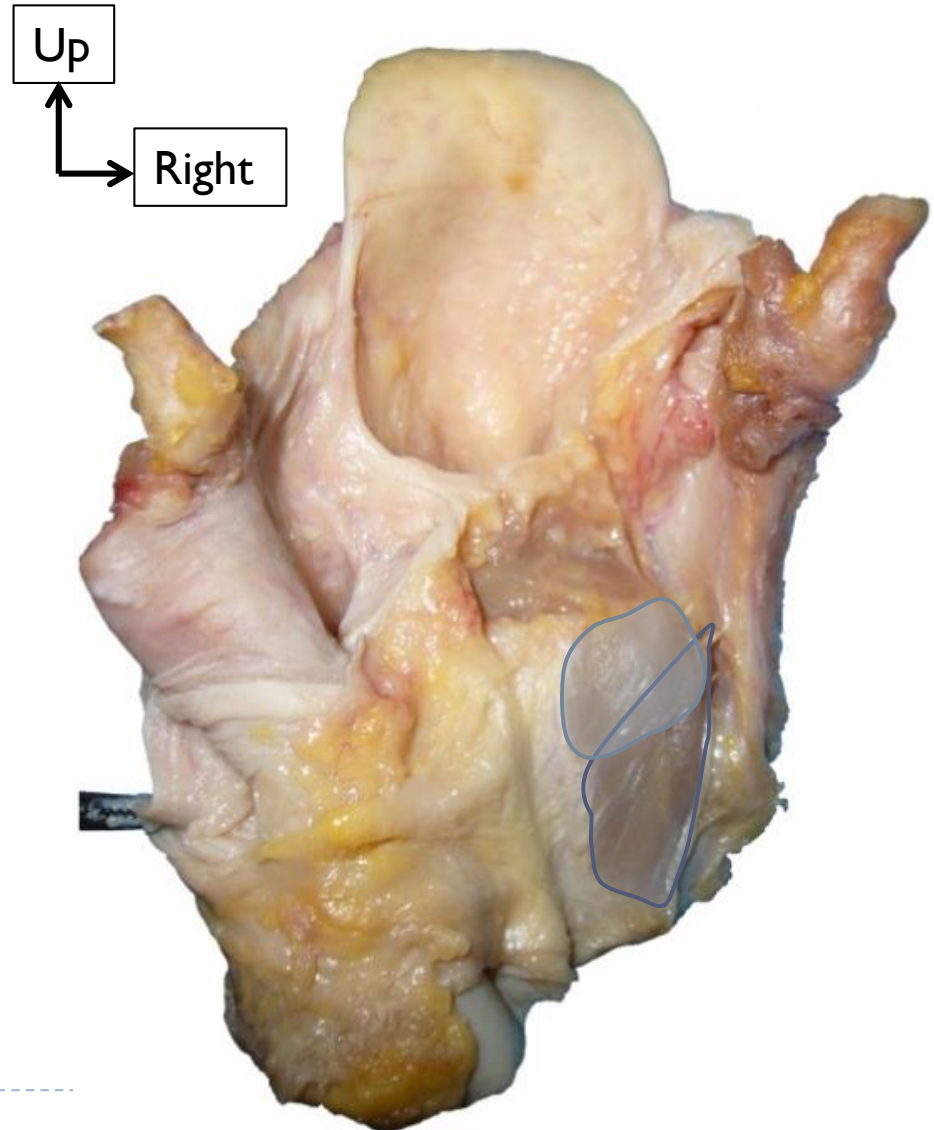




Intrinsic laryngeal muscles

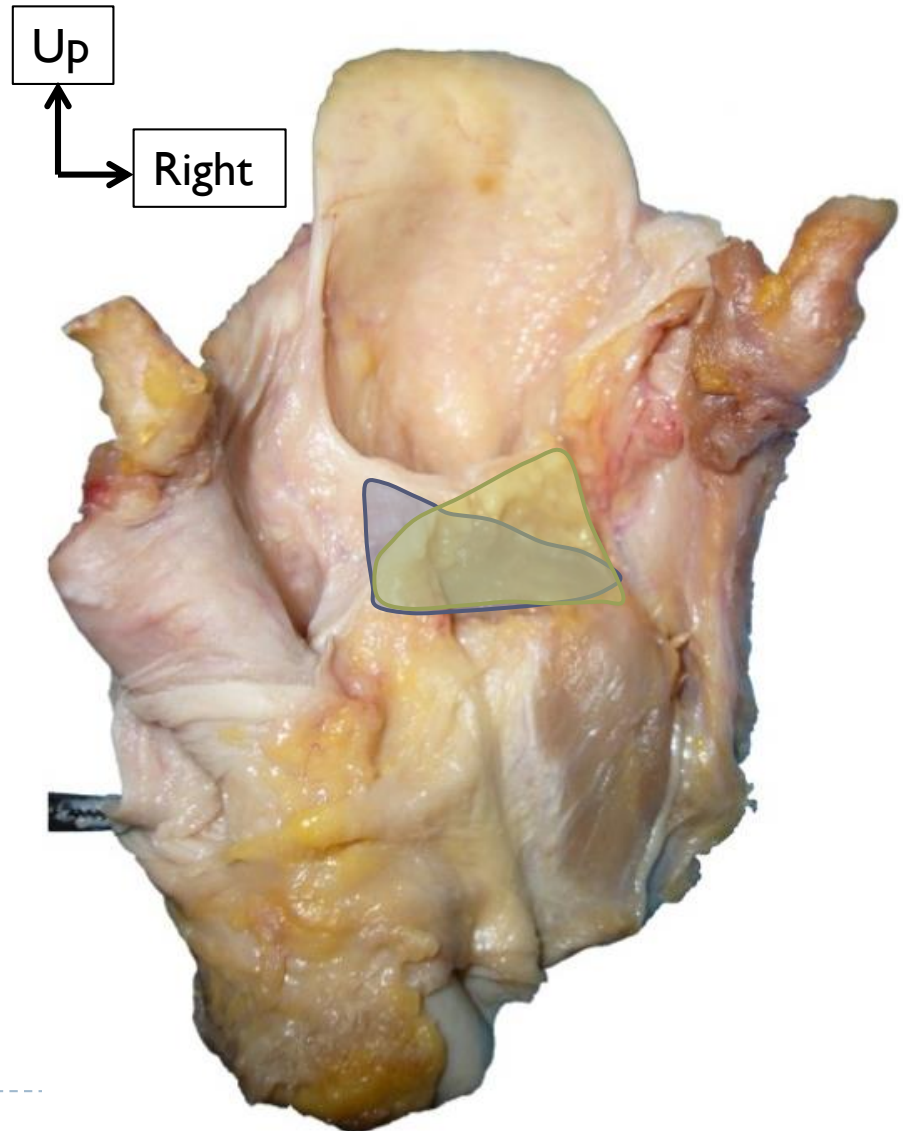
Posterior Crico-Arytenoid Muscle (PCA)

- ▶ Abduction of the vocal folds
 - ▶ Breathing muscle



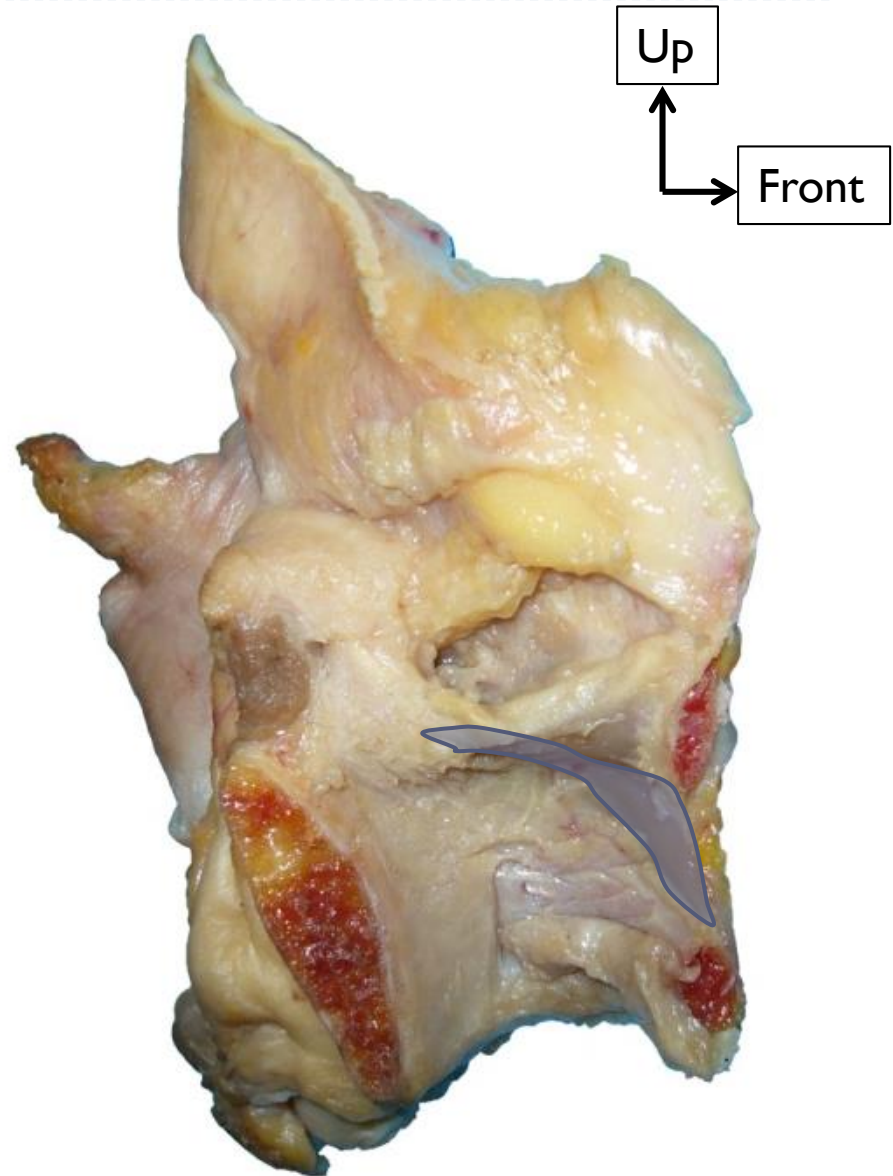
Inter-Arytenoid Muscle (IA)

- ▶ Adduction of the vocal folds



Lateral Crico-Arytenoid Muscle

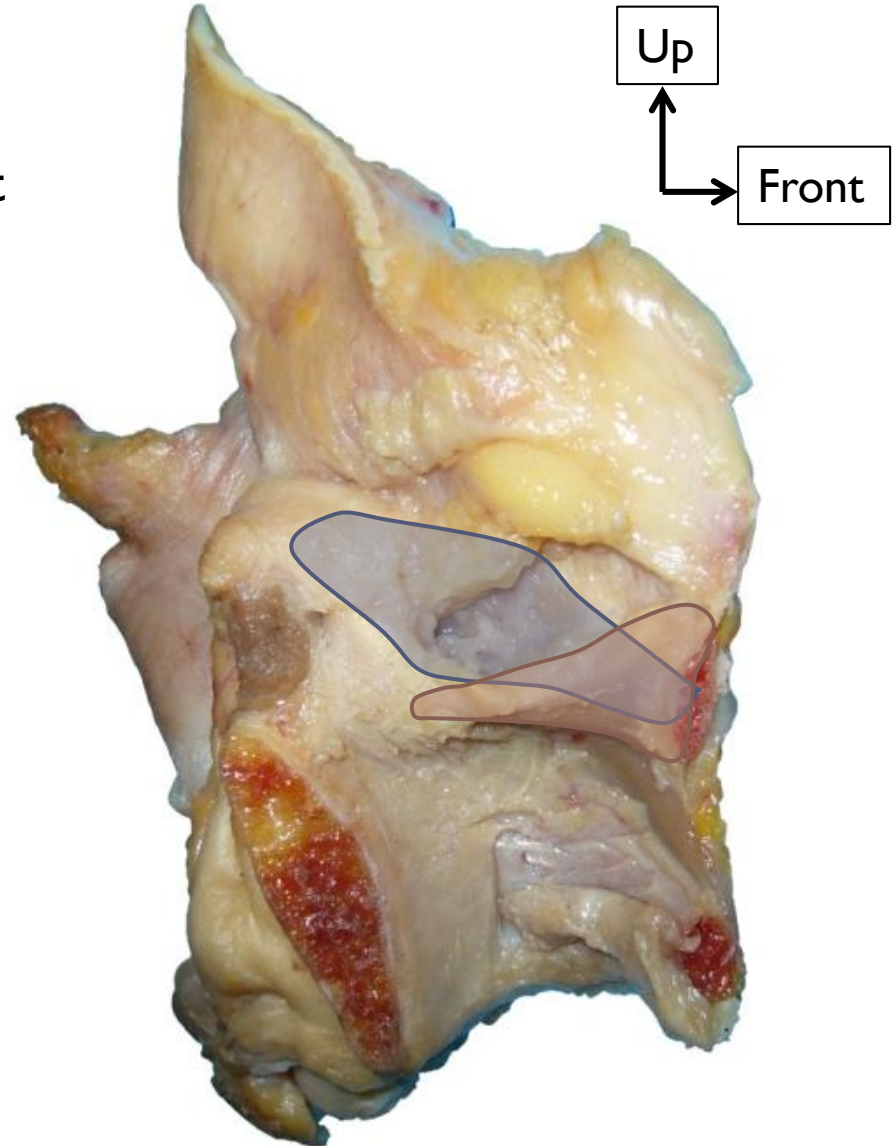
- ▶ Adduction of the vocal folds



Thyro-Arytenoid Muscle

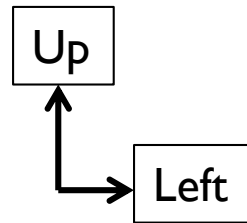
- ▶ Adduction of the vocal folds
 - ▶ Action on the crico-arytenoid joint
 - ▶ Action on the membranous part

- ▶ Tension of the vocal folds



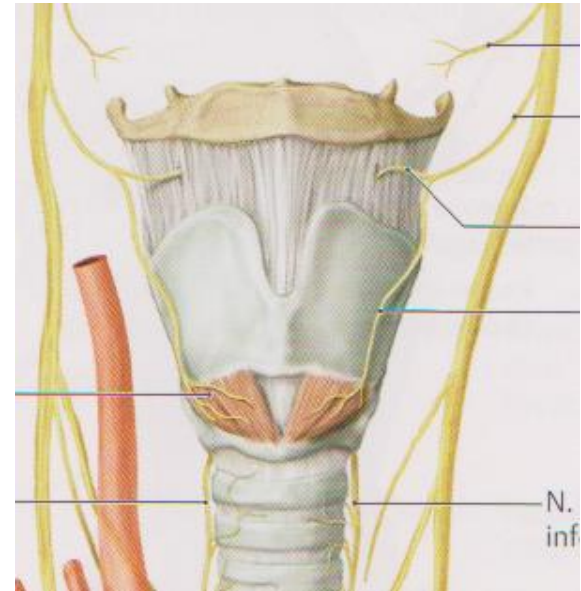
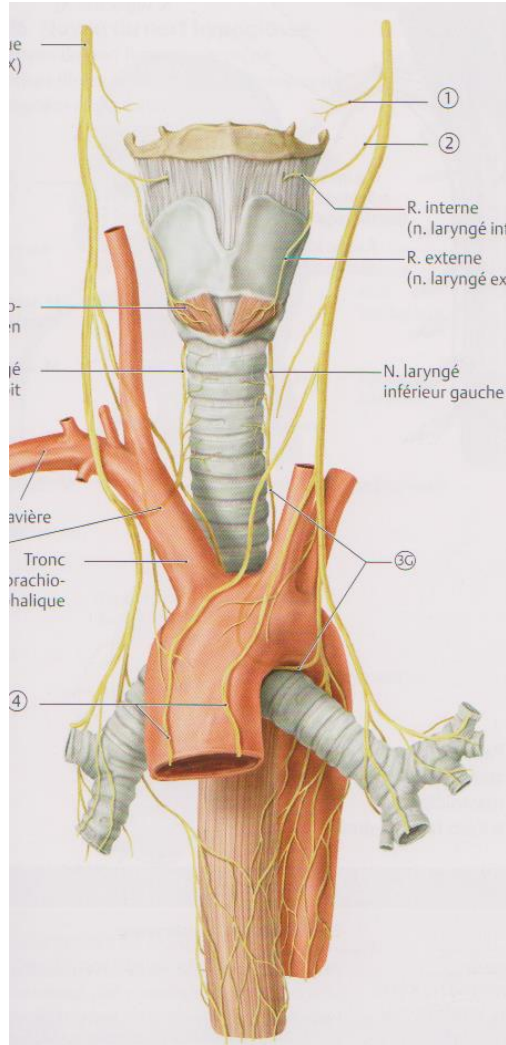
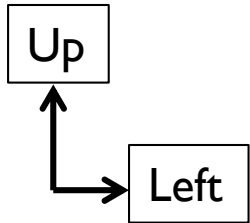
Crico-Thyroid Muscle

- ▶ Tension of the vocal folds
- ▶ Adduction of the vocal folds



Laryngeal innervation

Laryngeal innervation



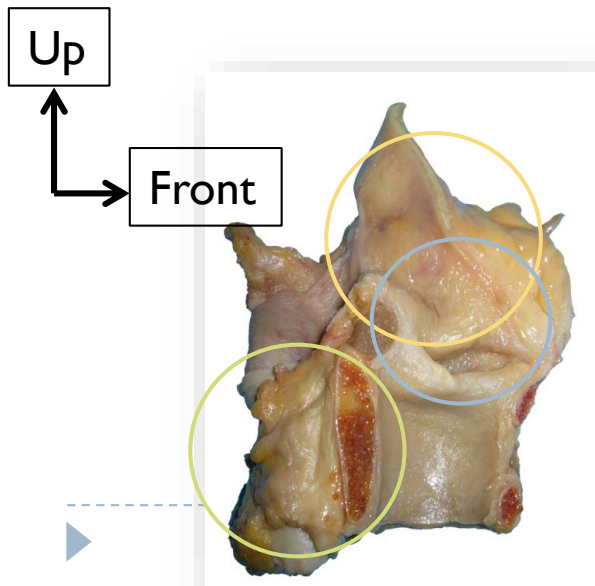
Superior Laryngeal Nerve-Ending



Superior laryngeal nerve trunk

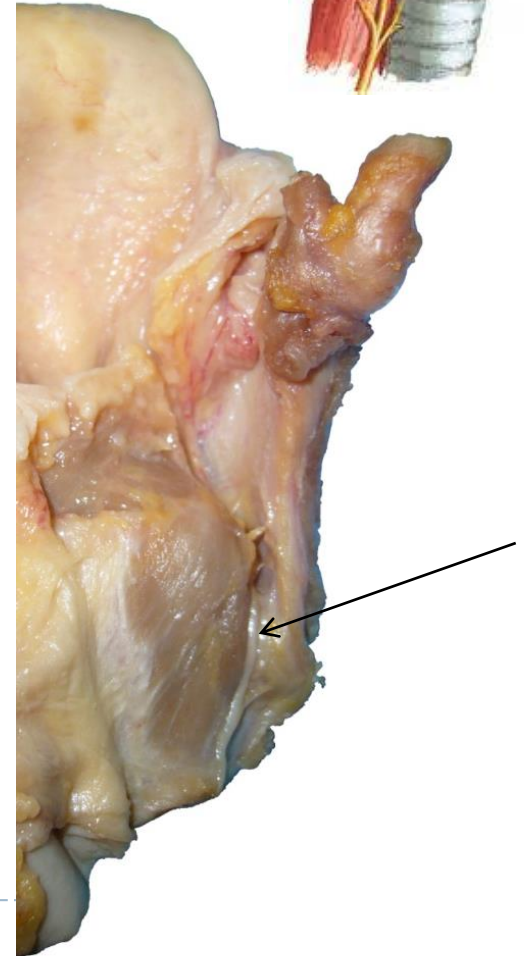
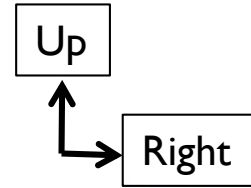
- Internal laryngeal nerve
 - Sensory
 - Laryngeal vestibule, glottic level, posterior wall

- External laryngeal nerve
 - Motricity
 - Crico-thyroid Muscle



Inferior Laryngeal Nerve-Ending

- ▶ Enters in the larynx
 - ▶ Under the inferior pharyngeal constrictor
 - ▶ Behind the crico-thyroid joint
 - ▶ Under the mucosa of the hypopharynx

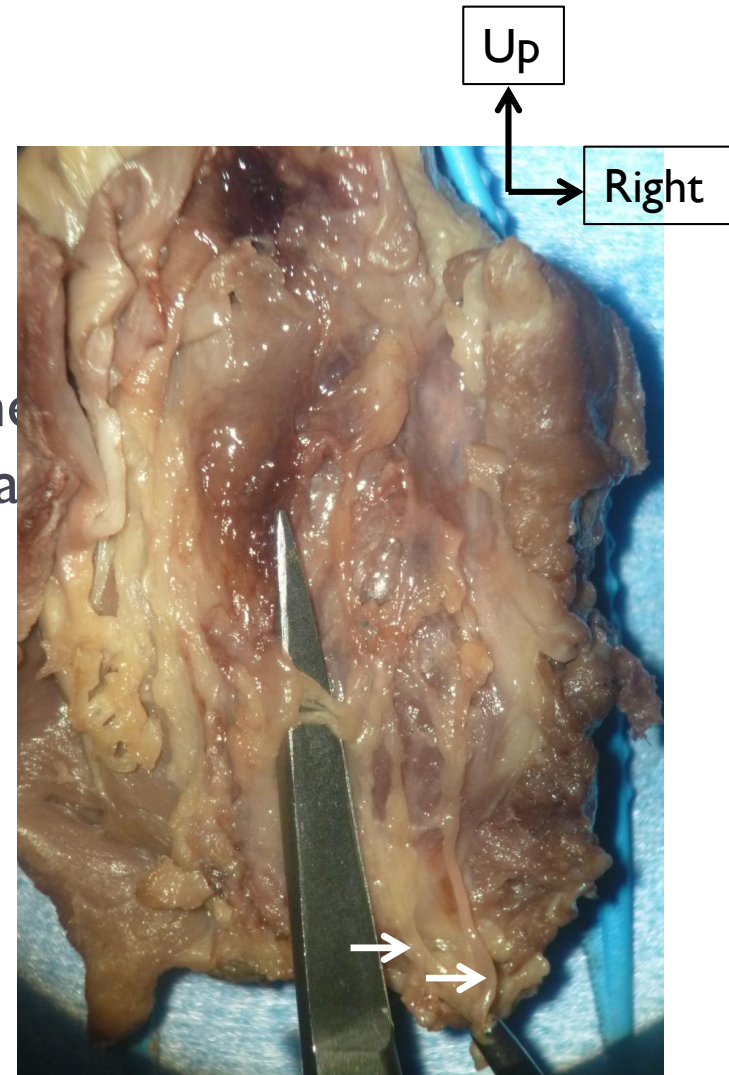


Inferior Laryngeal Nerve-Ending

2 Terminal branches

▶ Posterior

- ▶ Runs on the posterior aspect of the PCA, under the pharyngeal mucosa
- ▶ Communication with the internal laryngeal nerve
 - ▶ Galien ansa

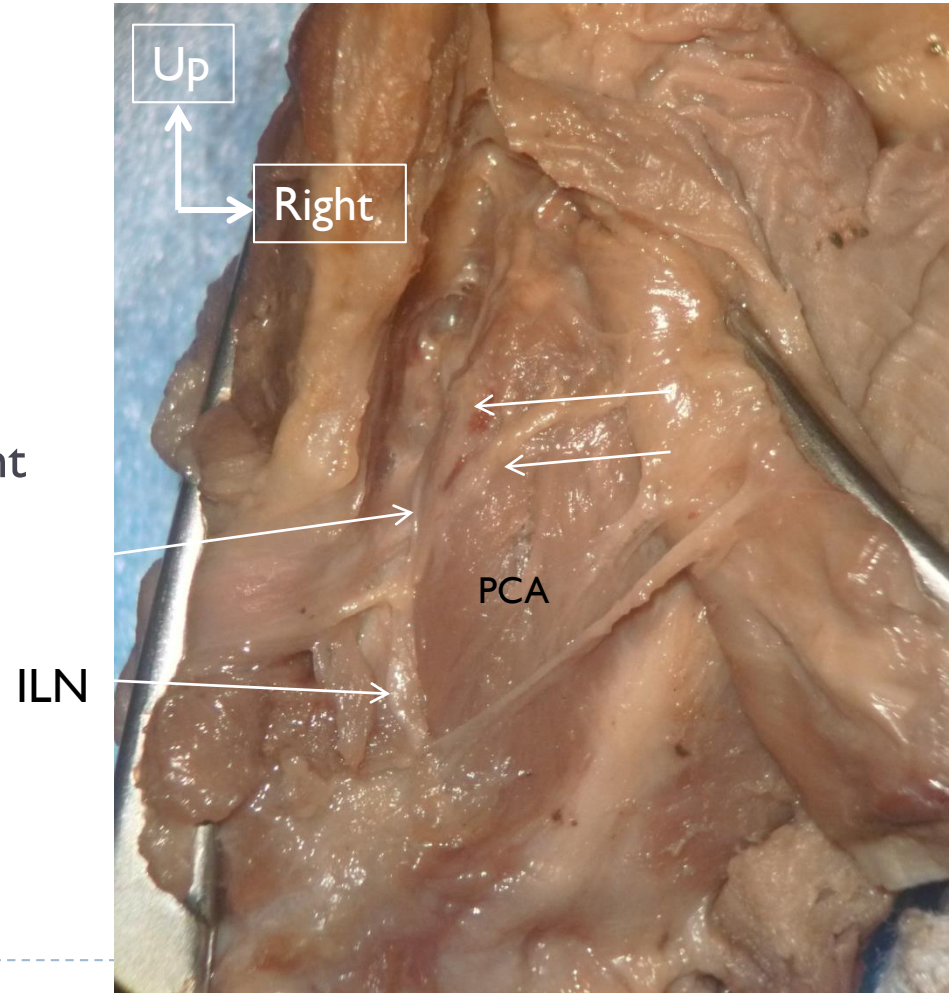


Inferior Laryngeal Nerve-Ending

2 Terminal branches

▶ Anterior

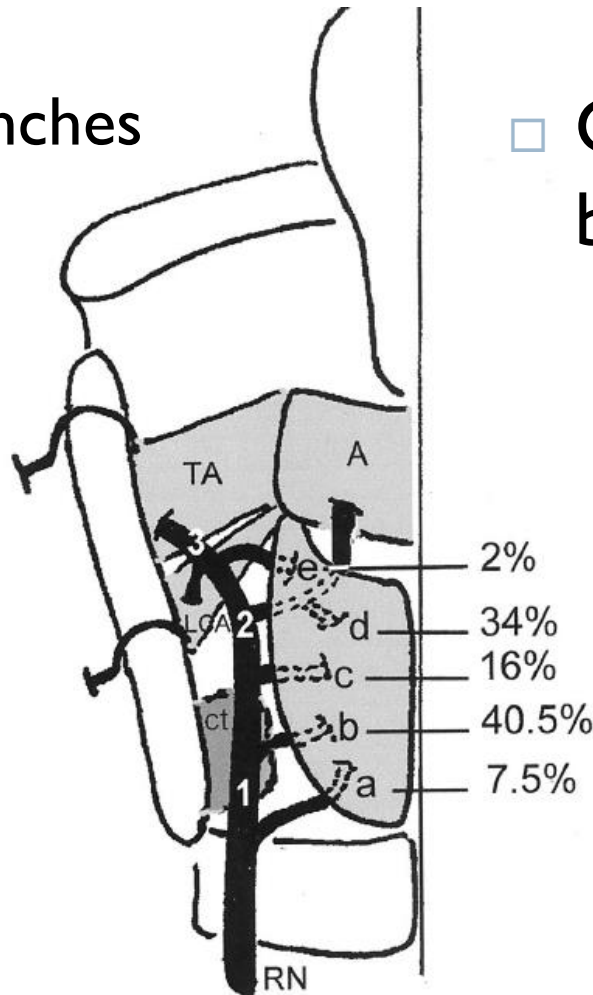
- ▶ Motor Innervation of the intrinsic muscles
- ▶ Vertical segment: behind the cricothyroid joint
- ▶ Genu: Anterior curve, above the joint
- ▶ Oblique segment, laterally to LCA muscle



Inferior laryngeal Nerve : variability of the terminal branches

▶ Number of branches

- ▶ 1 branch=7.3%
- ▶ 2 branches=42.7%
- ▶ 3 branches=34%
- ▶ 4 branches=10.7%
- ▶ 5 branches=4.7%
- ▶ 6 branches: 0.6%

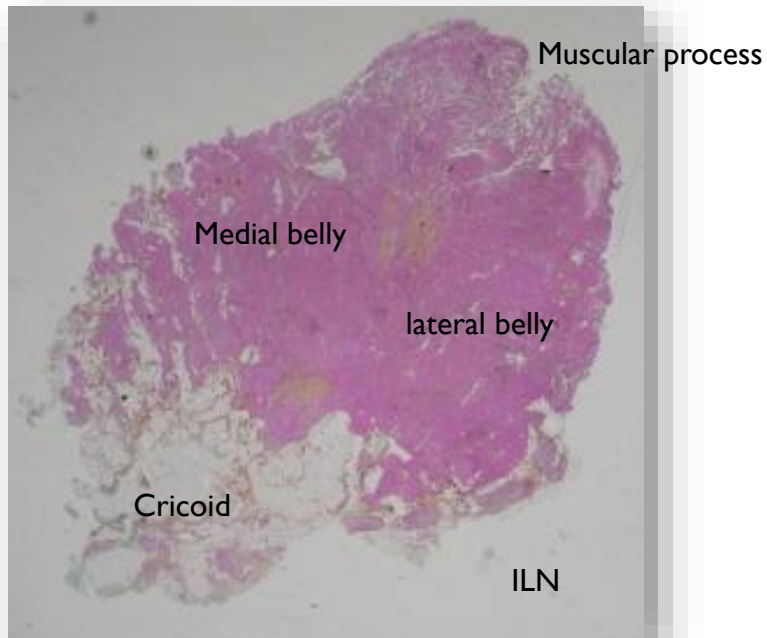


□ Origins of the PCA branches

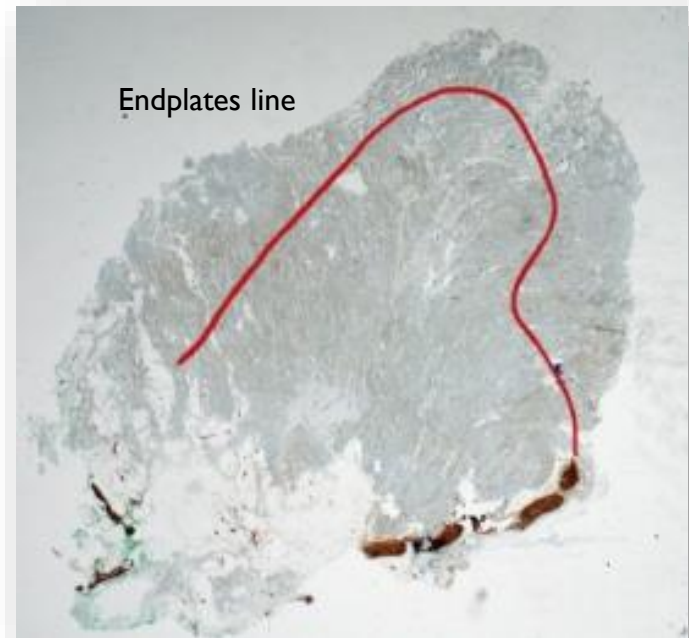
- A: vertical segment under CT joint
- b: vertical segment behind CT joint
- c: vertical segment above CT joint
- d=genu, common origin with IA nerve branch
- e=oblique segment, between the IA and LCA branches

PCA innervation: Endplates distribution

- Endplates line (x25)



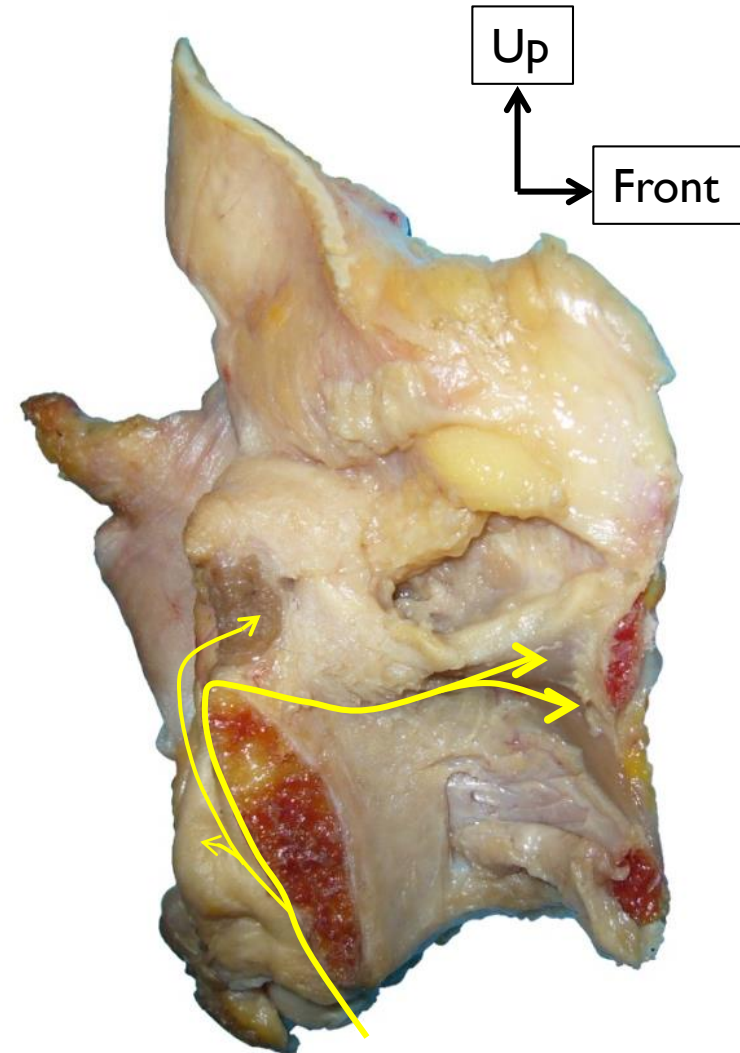
HES staining



IHC anti-PS100
(Schwann cells marker)

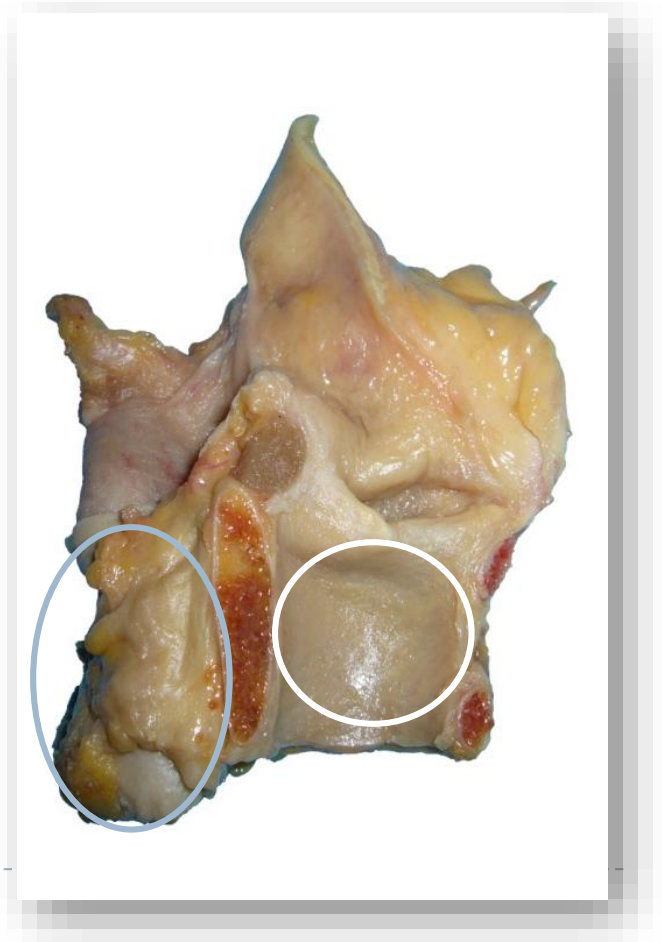
Inferior Laryngeal Nerve-Ending

- ▶ **Motor nervous branches**
 - ▶ For all the intrinsic laryngeal muscles
 - ▶ **EXCEPT** crico-thyroid muscle



Inferior laryngeal nerve-Ending

- ▶ Sensory branches
 - ▶ Piriform sinus
 - ▶ Subglottic space



Communications between ILN and SLN

