Flexible Laryngoscopy Steps

ACRO Education Committee

Updated on 12/2/2024

Indications

- Patients at high risks of head and neck cancer
- Chronic cough
- Chronic throat pain
- Dysphagia
- Dysphonia
- Foreign body in the throat
- Hoarseness or change in voice
- Odynophagia
- Sensation of a lump in the throat
- Symptoms of aspiration
- hemoptysis

	Normal Findings	Abnormal Findings
Nasal Cavity	External and internal nasal valves Nasal septum Turbinates	Fluid (purulence, blood, secretions) Polyps Adhesions Crusting Septal perforations Septal deviations Bony Spurs Mucopurulent debris Sinus drainage Mucosal edema Cerebrospinal fluid (CSF) rhinorrhea
Nasopharynx	Eustachian tube orifices Fossa of Rosenmüller Adenoidal pad	Obstruction Masses
Oropharynx	Base of tongue Tonsils Vallecula	Masses Cysts
Hypopharynx	Piriform sinus Post-cricoid space	Pooling of secretions Fullness Masses Foreign body
Supraglottis	Arytenoid cartilages False cords Epiglottis	Omega-shaped epiglottis Shortened aryepiglottic folds (laryngomalacia)
Glottis	Posterior commissure Anterior commissure True cords	Abnormal or asymmetric vocal cord movements Swelling Edema Masses Mucosal changes

Contraindications

- Absolute contraindications
  - Suspected epiglottitis
- Relative contraindications
  - Stridor
  - Angioedema
  - Active epistaxis or an uncontrolled bleeding disorder

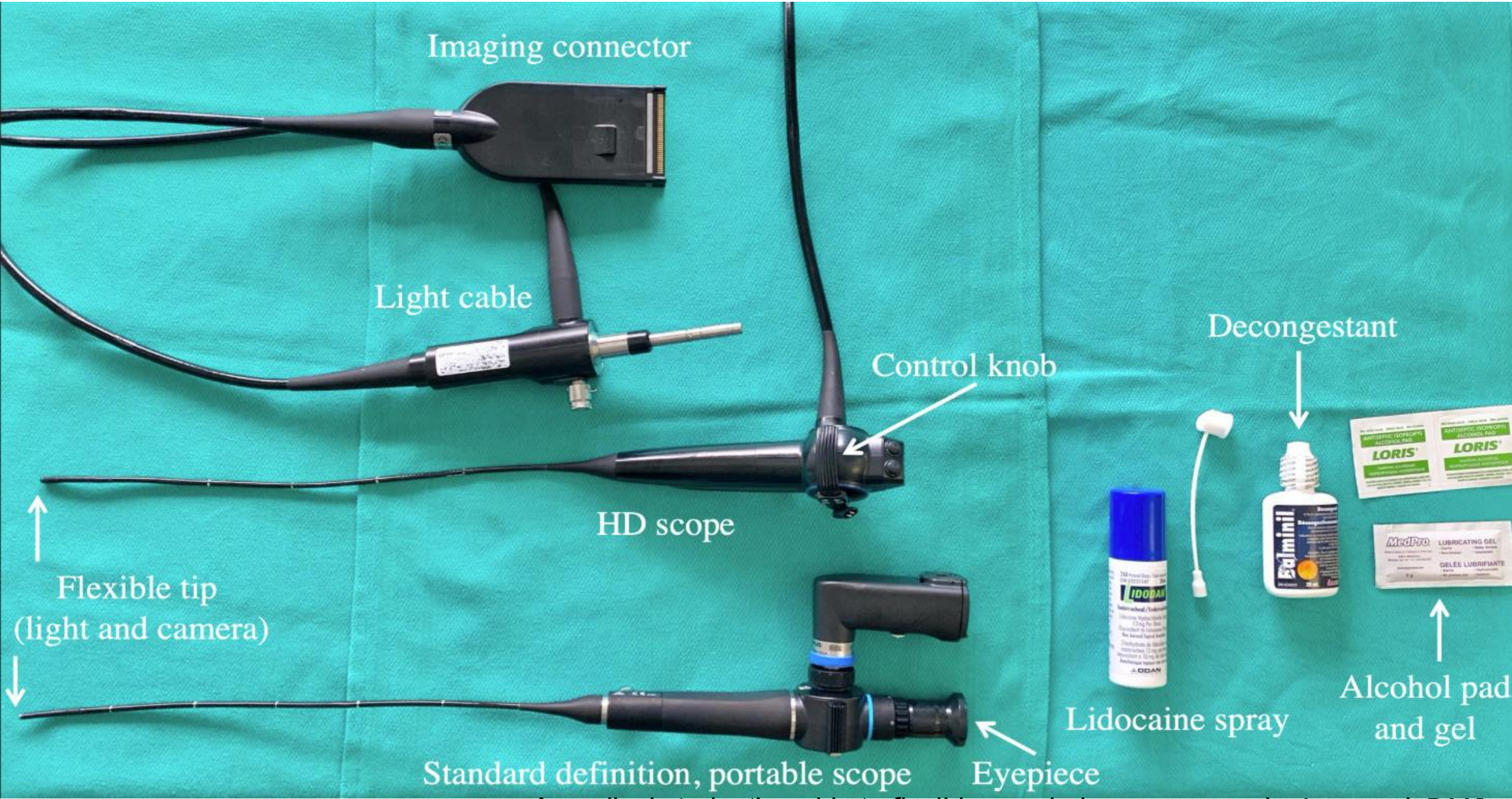
  If laryngoscopy is essential, should be done in the controlled setting of an OR

Complications

- Mucosal injury with or without bleeding
- Laryngospasm and airway compromise
- May cause gagging, coughing and/or vomiting, and vasovagal reaction

Equipment

- Flexible laryngoscope
- Gloves
- Protective eyewear
- Mask
- Nasal speculum
- Lubricant
- Topical vasoconstrictor/anesthetic (eg, 4% cocaine, 0.05% oxymetazoline plus either 1% tetracaine or 4% lidocaine)
- Cotton swabs or pledgets for nonspray topical decongestants and/or anesthetics
- Not essential: Wall suction connected to a Frazier-tip catheter, nasal speculum



A medical student's guide to flexible nasal pharyngoscopy by Lee et al. DMJ

Positioning

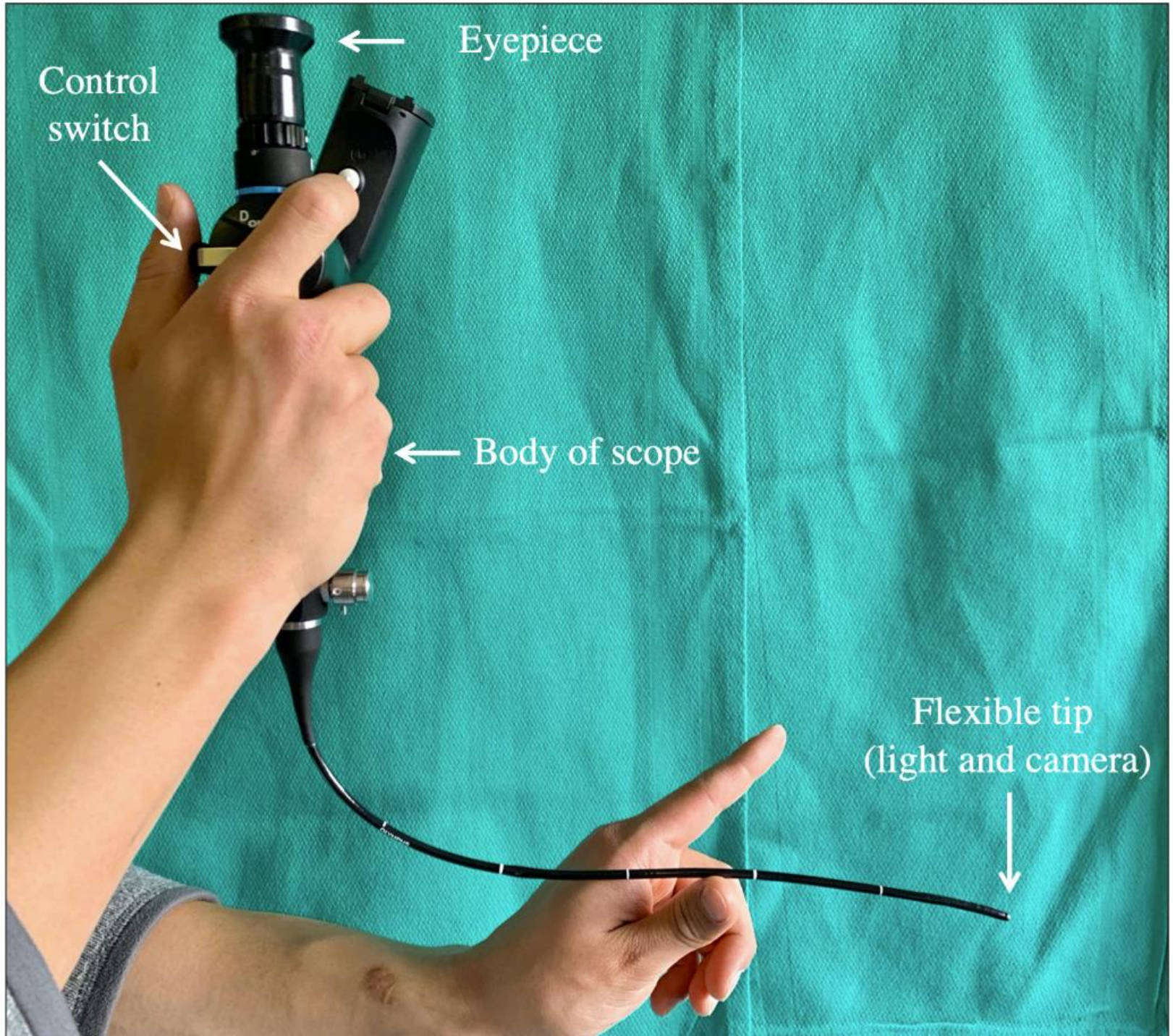
- Patient should sit upright with head against a headrest, and leaning forward slightly
- Legs should not be crossed

Preparation

- Check both nares and use the one that appears more widely patent. Can also ask patient
- Apply the topical vasoconstrictor/anesthetic
- Wait for 5 to 15 minutes after the application of vasoconstrictor/anesthetic
- Start recording the procedure if consent is obtained and available capacity

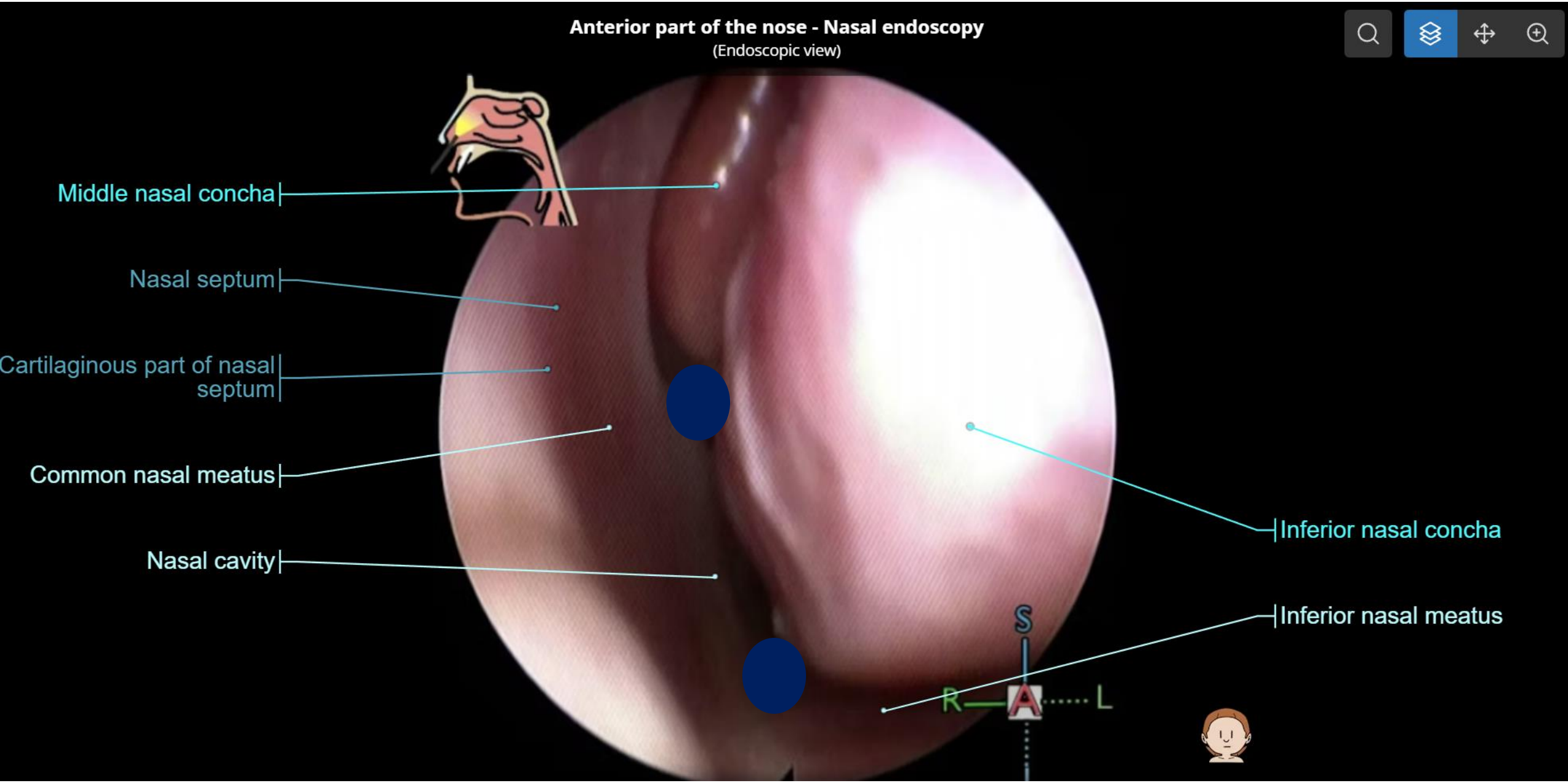
Procedure

- 1. Lubricate the laryngoscope tip (optional as this can blur the image)
- 2. Insert the laryngoscope tip into the nose and slowly advance so that the tip is either above or below to the inferior turbinate (concha); Keep the tip parallel to the floor of the nose


Eyepiece
Control switch
Body of scope
Flexible tip (light and camera)

Anterior part of the nose - Nasal endoscopy

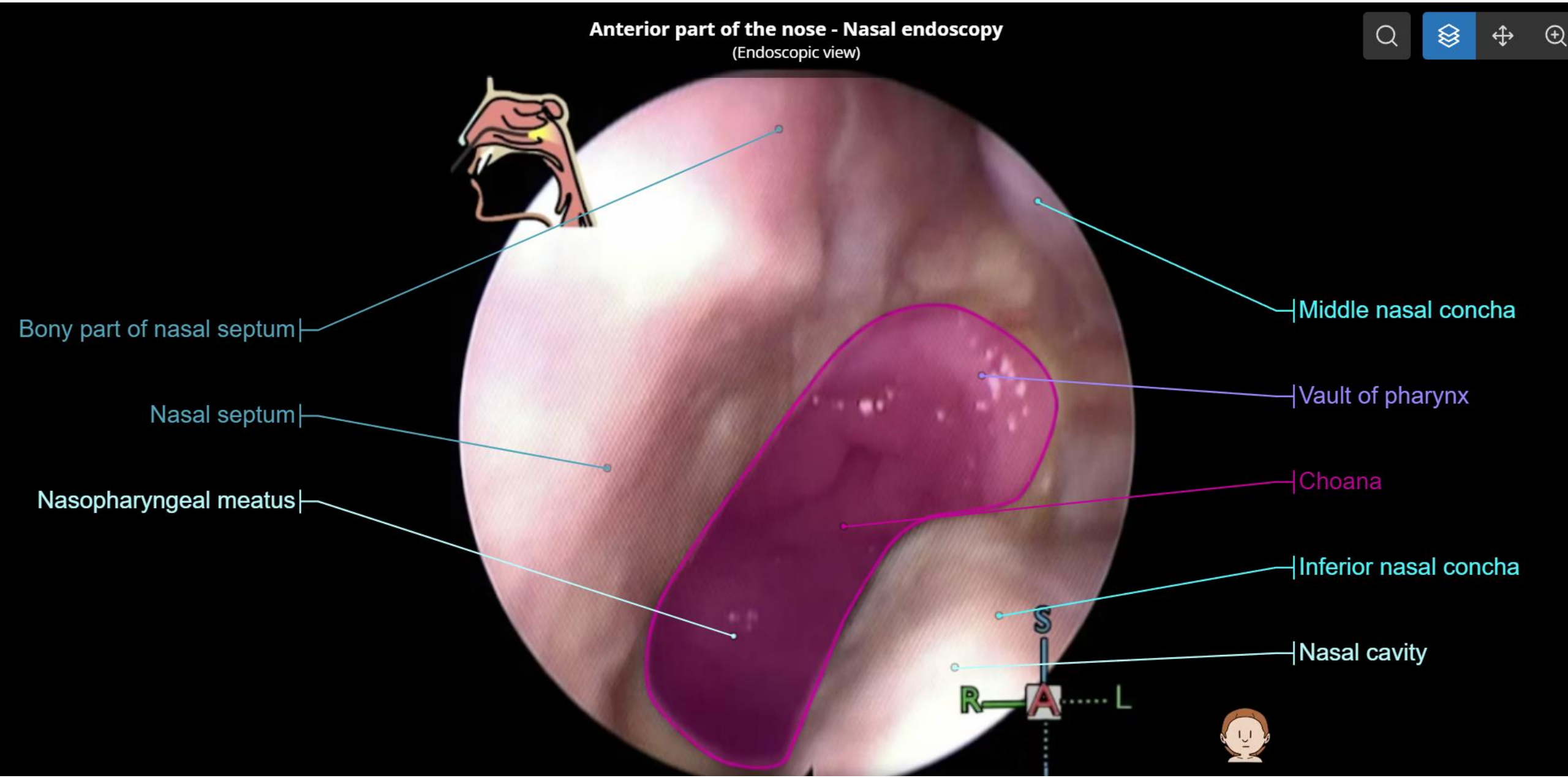
(Endoscopic view)



- 3. Advance it into the nasopharynx, inspecting the eustachian tube opening in the lateral nasopharynx and the adenoid tissue on the posterior wall.
  - Make sure to check both sides of eustachina tubes
- 4. Tell the patient to breathe through the nose (which makes the soft palate drop). Use the thumb control on the laryngoscope to flex the tip down to go past the palate, and then straighten to avoid curling forward into the uvula.

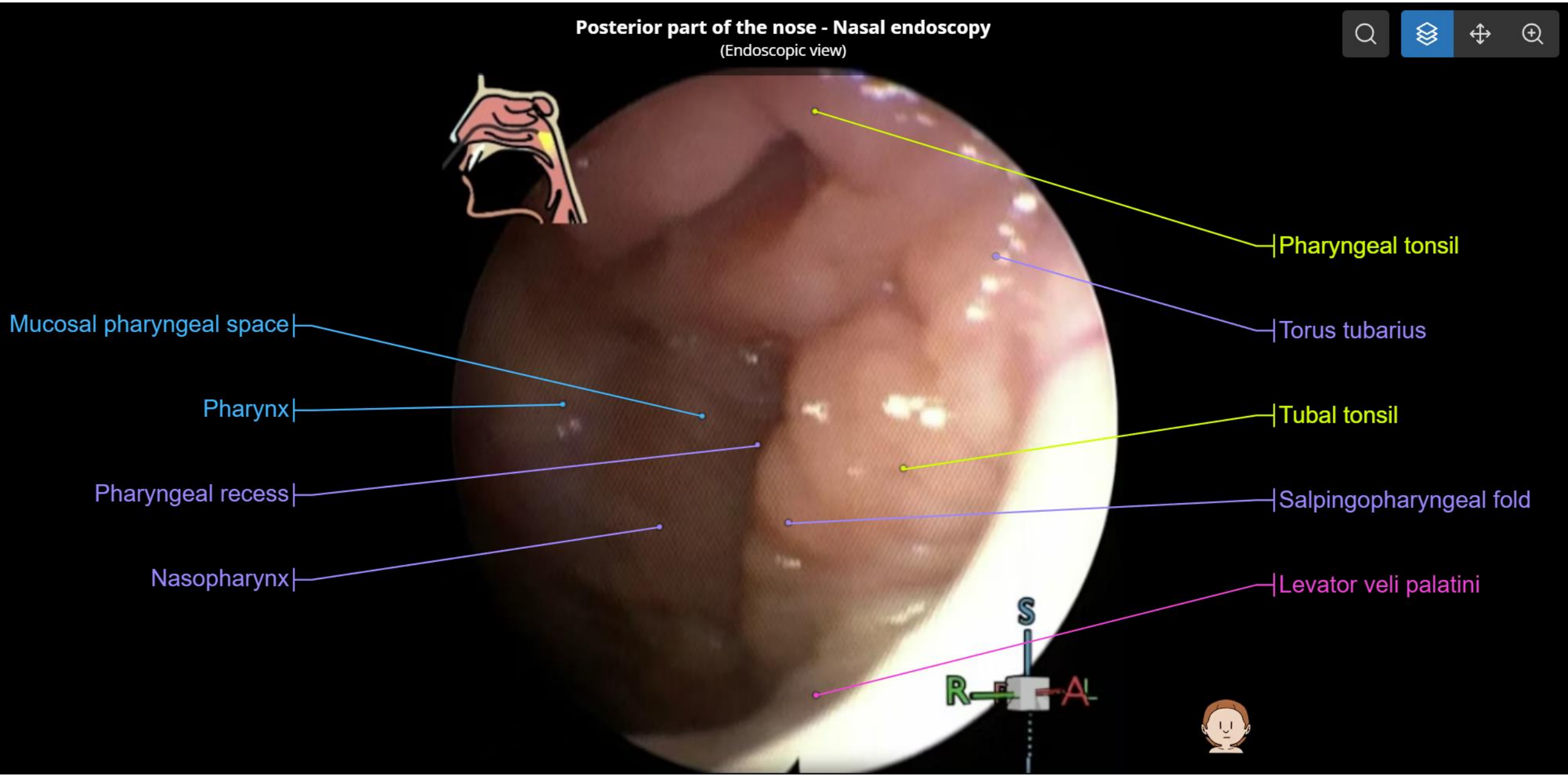
Anterior part of the nose - Nasal endoscopy

(Endoscopic view)



Posterior part of the nose - Nasal endoscopy

(Endoscopic view)



Posterior part of the nose - Nasal endoscopy

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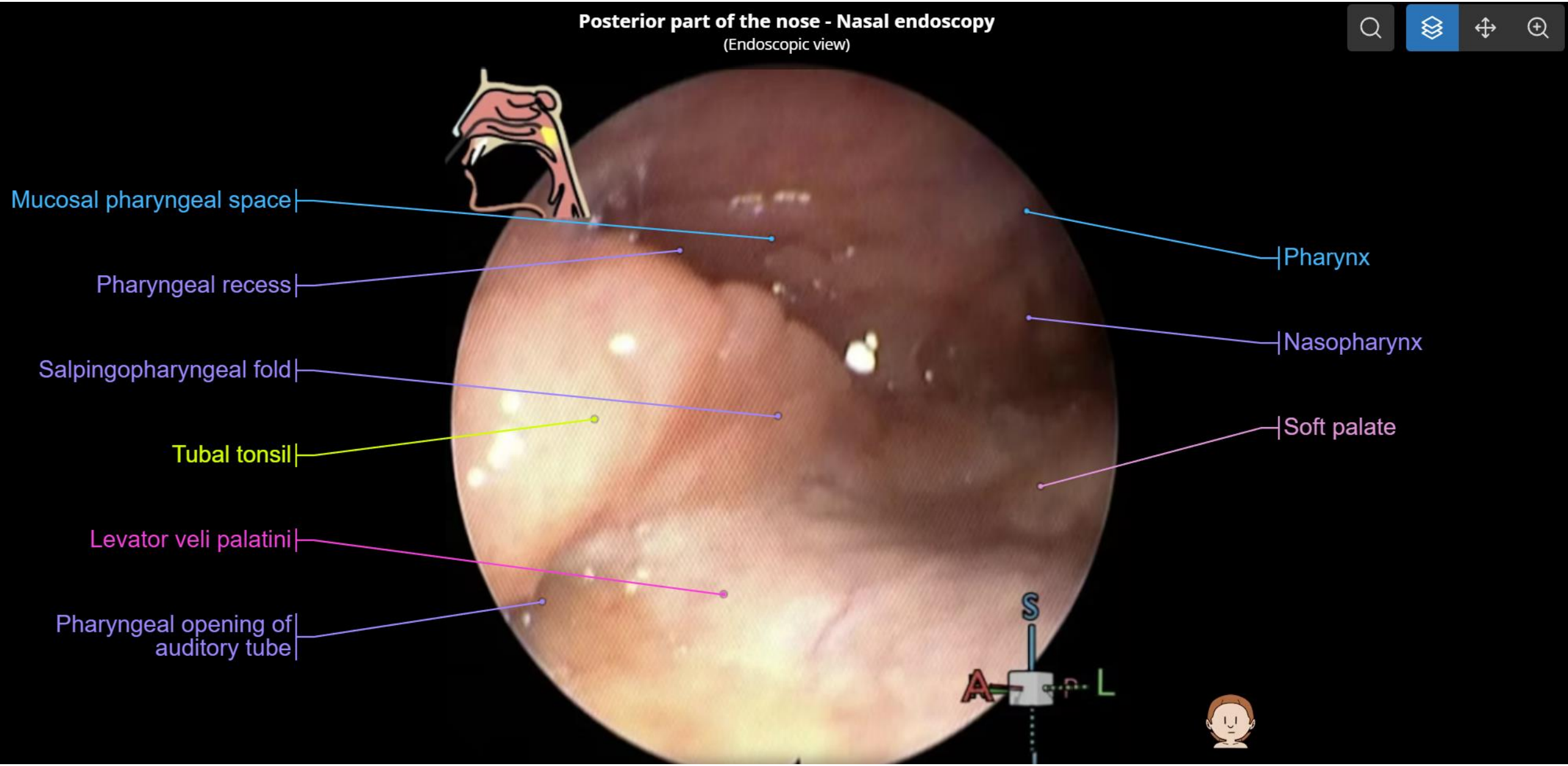

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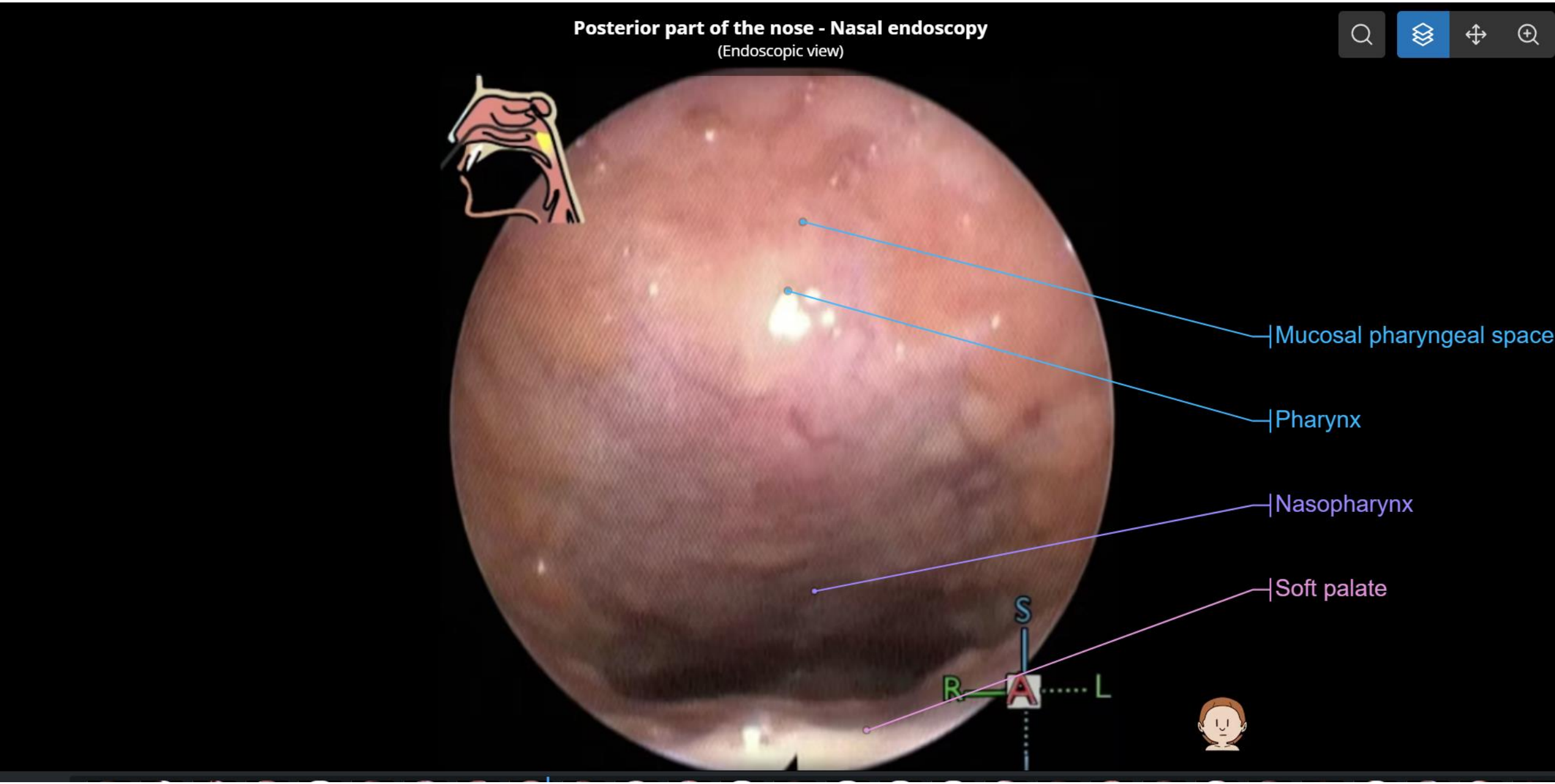
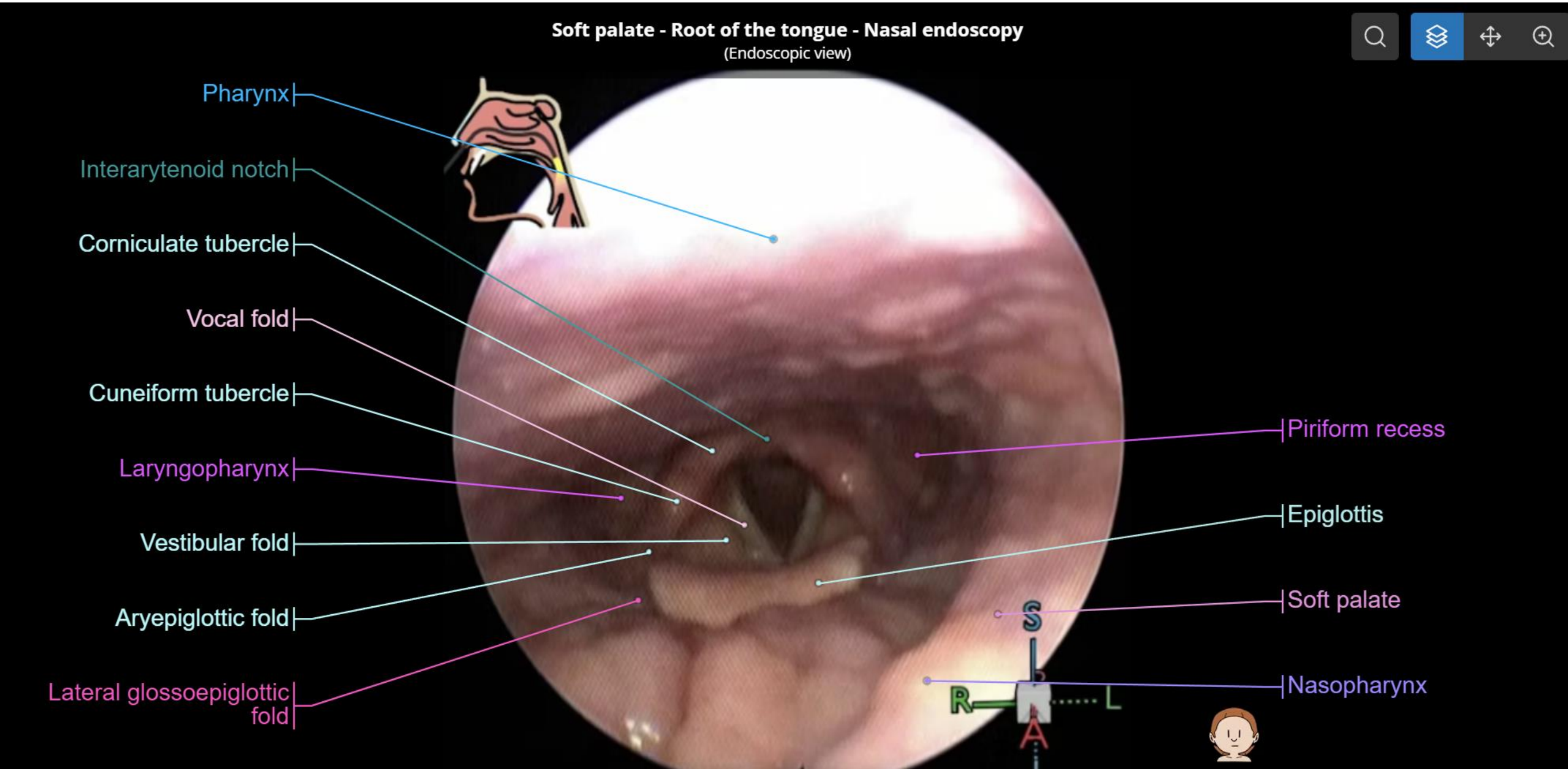


- 5. Inspect the base of the tongue, valleculae, epiglottis, piriform sinuses, arytenoids, false and true vocal cords, and the larynx below the vocal cords.
- 6. Do not pass the laryngoscope through the vocal cords because contact can cause laryngospasm.

Soft palate - Root of the tongue - Nasal endoscopy

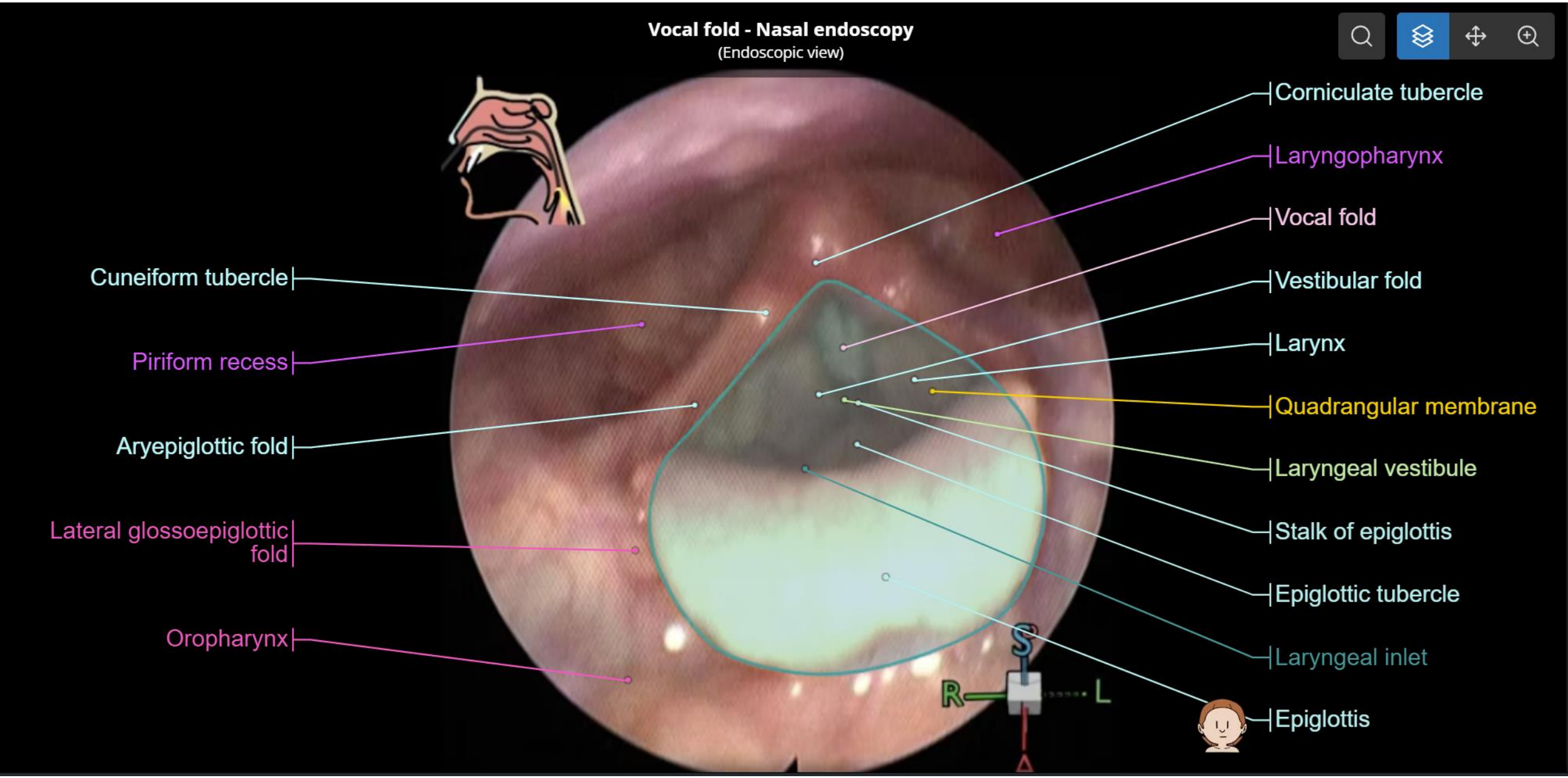
(Endoscopic view)



- 7. Fully inspect the vocal cords. Instruct the patient to say "eeee," which will contract the vocal cords and allow more thorough inspection.
  - Check for asymmetry in shape or motion
- 8. Avoid touching the mucosa or epiglottis because this may provoke a gag reflex.
- 9. Gently withdraw the laryngoscope.

Vocal fold - Nasal endoscopy

(Endoscopic view)



Aftercare for Flexible Laryngoscopy

- Instruct patient to avoid eating and drinking for at least 20 minutes to prevent aspiration due to residual laryngopharyngeal anesthesia.

Common Errors

- Inserting the scope too forcefully, causing bleeding and/or discomfort
  - No jerky movements
- Losing situational awareness of the direction of the scope tip
  - Practice outside of patient to check the direction of scope tip based on thumb maneuver
- Using too little anesthesia or vasoconstrictor

Tips and Tricks

- Give the patient a tissue prior to and after the procedure.
- Remind the patient to breathe during the procedure because some patients reflexively hold their breath.
- Ask the patient not to swallow during the procedure unless directed to help clear the scope.
- Rest the flexible scope on your left thumb and avoid gripping the scope with your thumb and index finger: this can cause a push-pull movement of the scope along the nasal floor, which can be irritating.

Tips and Tricks

- If the camera gets fogged up or covered with mucus, ask the patient to swallow if the tip is at or distal to the oropharynx. This should clear the camera lens.
- Be careful when the tip is close to the larynx. Accidentally touching the mucosa with the endoscope will be uncomfortable for the patient and may trigger a cough reflex.
- It may be helpful to verbalize the structures as you identify them

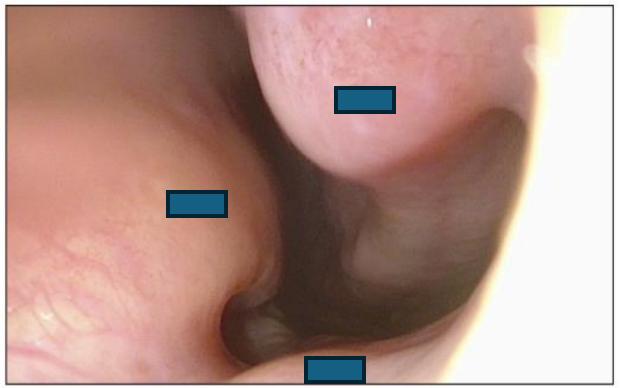


Figure 3. Initial view at the anterior nasal passage. IT: Inferior Turbinate..

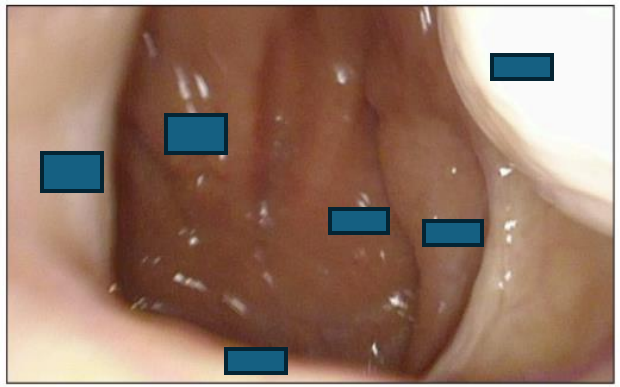


Figure 4. Posterior nasal passage and nasopharynx. NP: Nasopharynx. FR: Fossa of Rosenmuller. ET: Opening of Eustachian Tube.

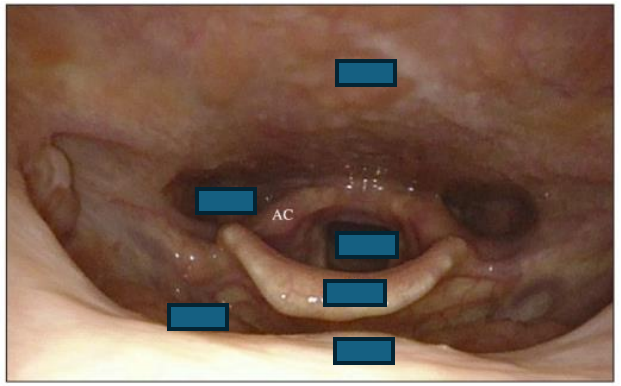


Figure 5. Looking down at the oropharynx. PS: Pyriform Sinus. AC: Arytenoid Cartilages. Tr: Trachea. E: Epiglottis. T: Tongue base.

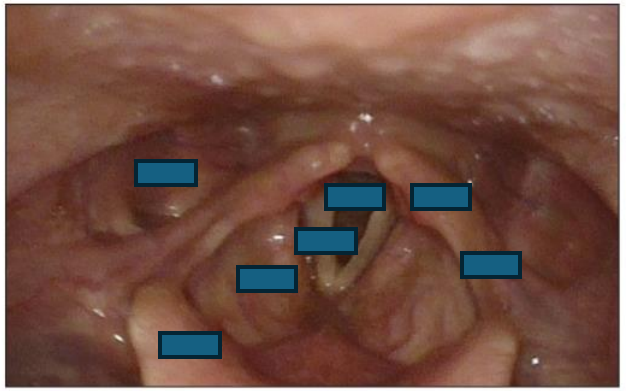


Figure 6a. View of the supraglottic structures with open vocal cords. TVF: True Vocal Fold. FVF: False Vocal Fold..

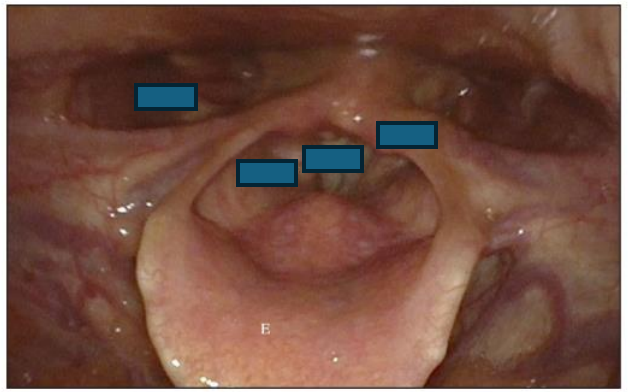


Figure 6b. View of the supraglottic structures with closed vocal cords.

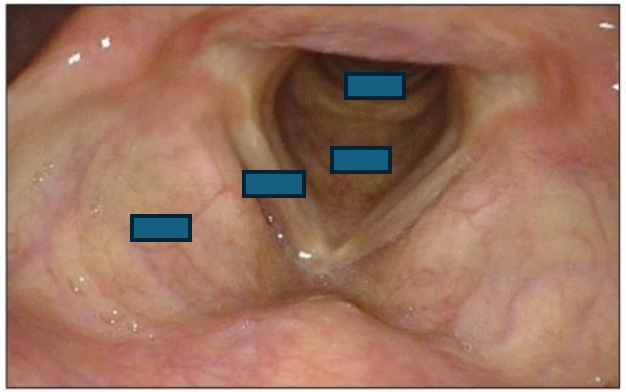
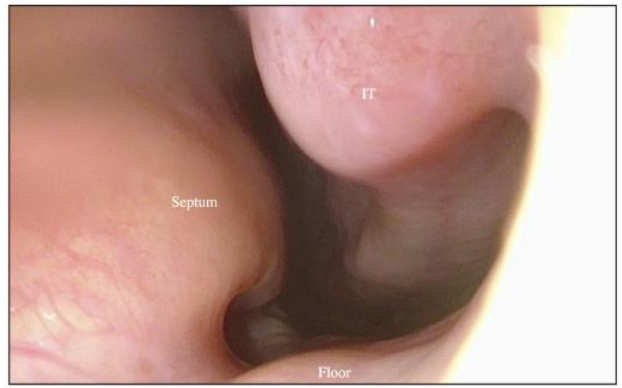


Figure 7. View of the subglottic space and trachea. SgS: Subglottic Space



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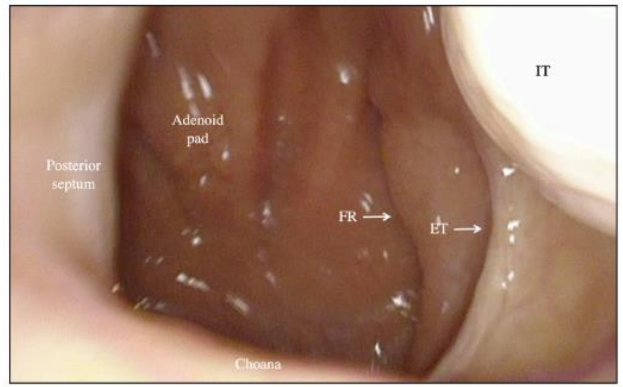

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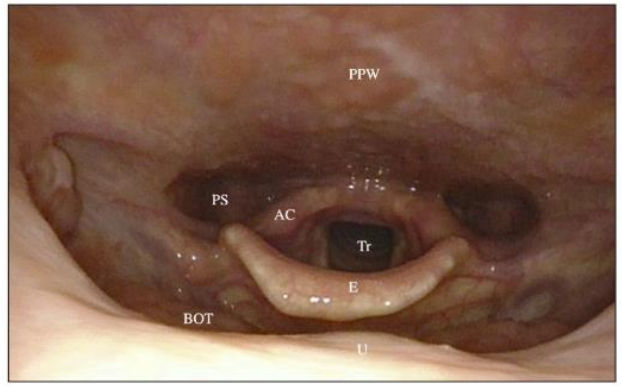

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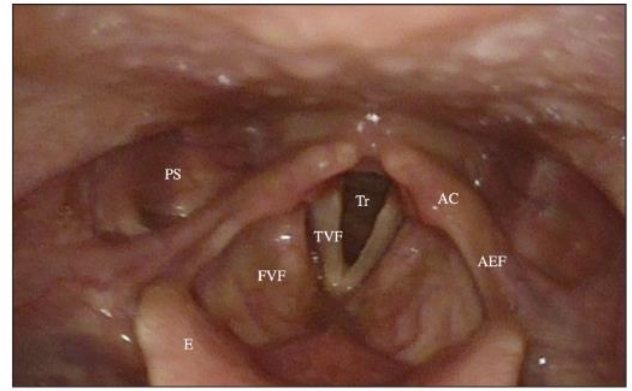

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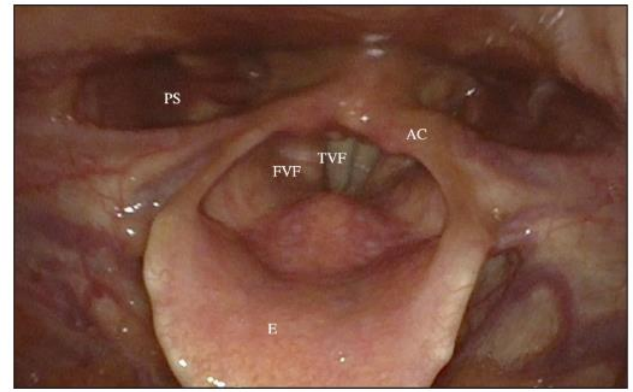

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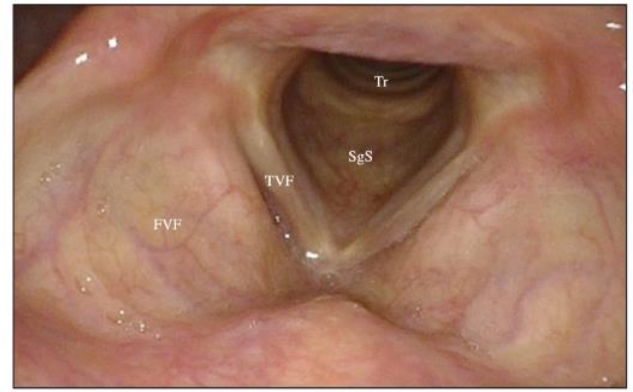

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Useful Resources

- https://www.merckmanuals.com/professional/ear,-nose,-and-throat-disorders/how-to-do-throat-procedures/how-to-do-flexible-laryngoscopy#Step-by-Step-Description-of-Procedure_v49752157
- https://www.imaios.com/en/e-anatomy/head-and-neck/nasal-fibroscopy
- https://www.educase.com/index.php/edumods/edumod-courses/guruPrograms/10-fiberoptic-examination/30-fiberoptic-examination-for-the-radiation-oncologist
- https://ojs.library.dal.ca/DMJ/article/view/11260