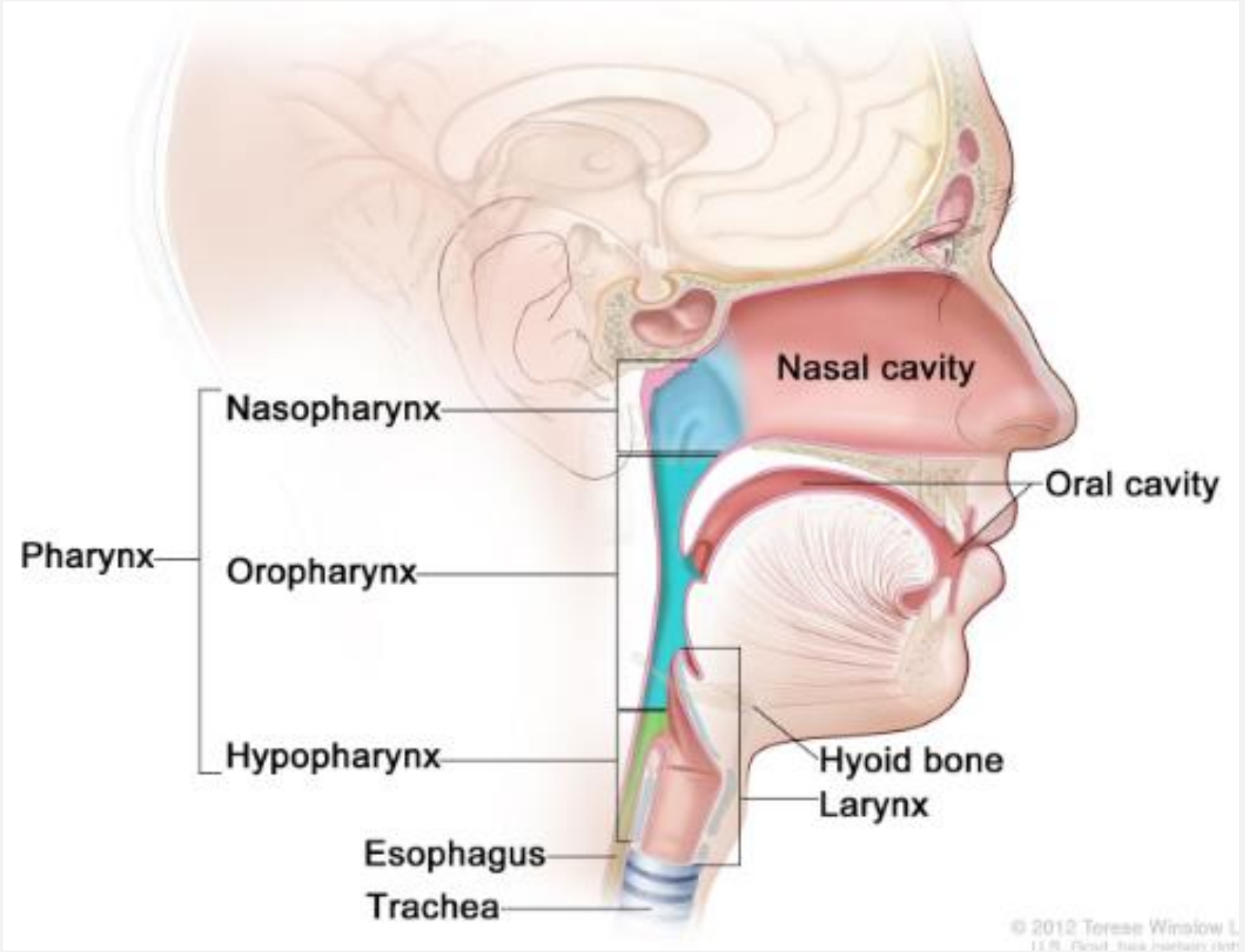
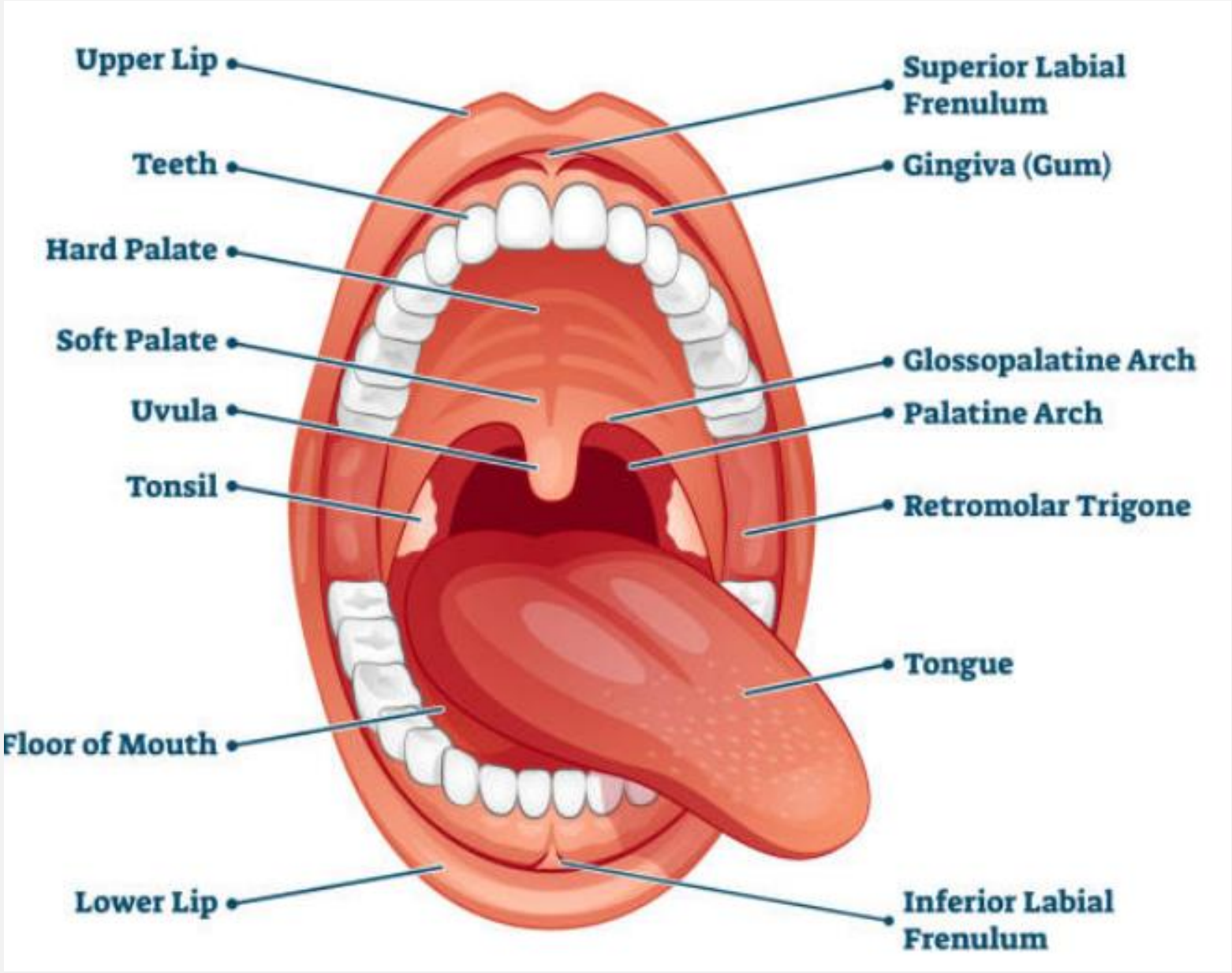
專科護理師教學

耳鼻喉頭頸外科：口腔、咽喉、甲狀腺篇

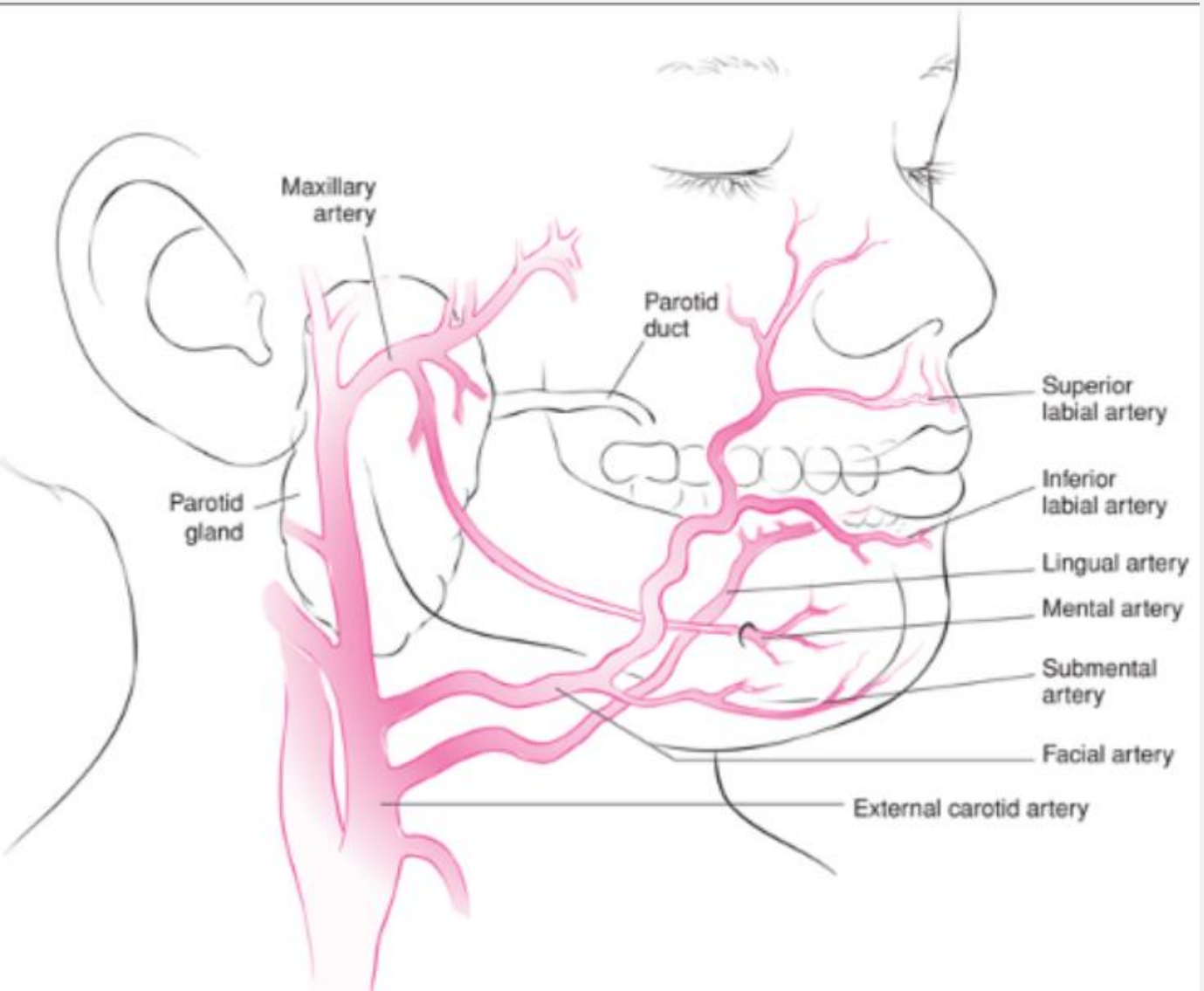
1 口腔、咽喉解剖位置

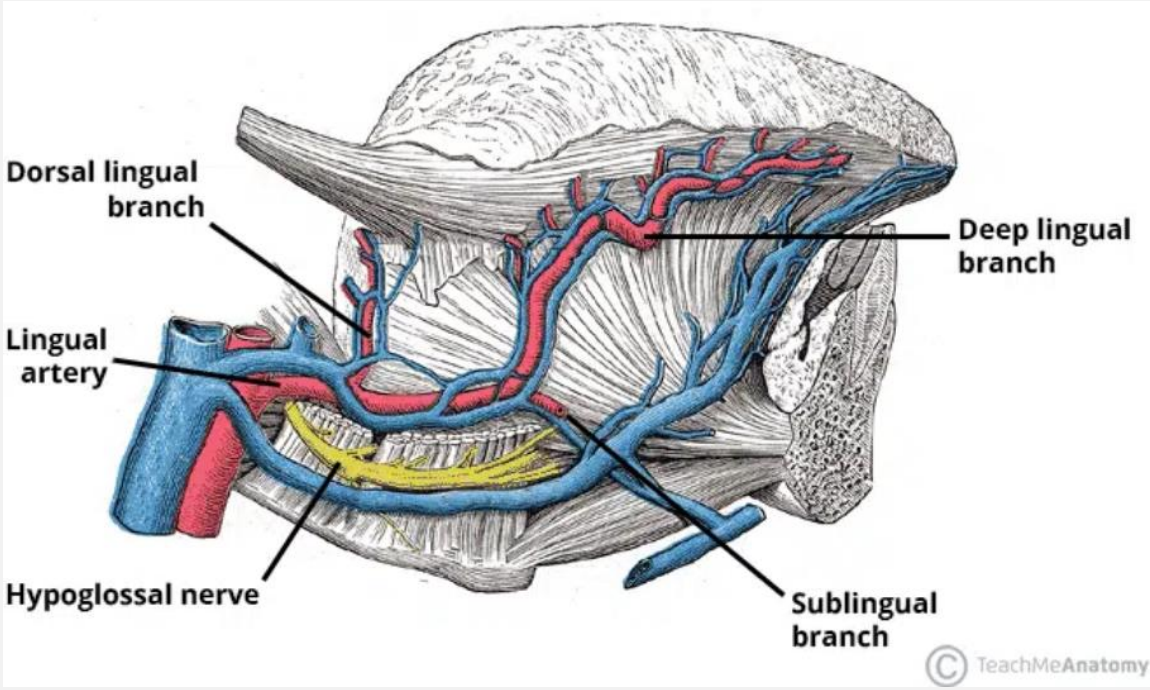

Nasal cavity
Nasopharynx
Oral cavity
Pharynx
Oropharynx
Hypopharynx
Hyoid bone
Larynx
Esophagus
Trachea

1 口腔、咽喉解剖位置

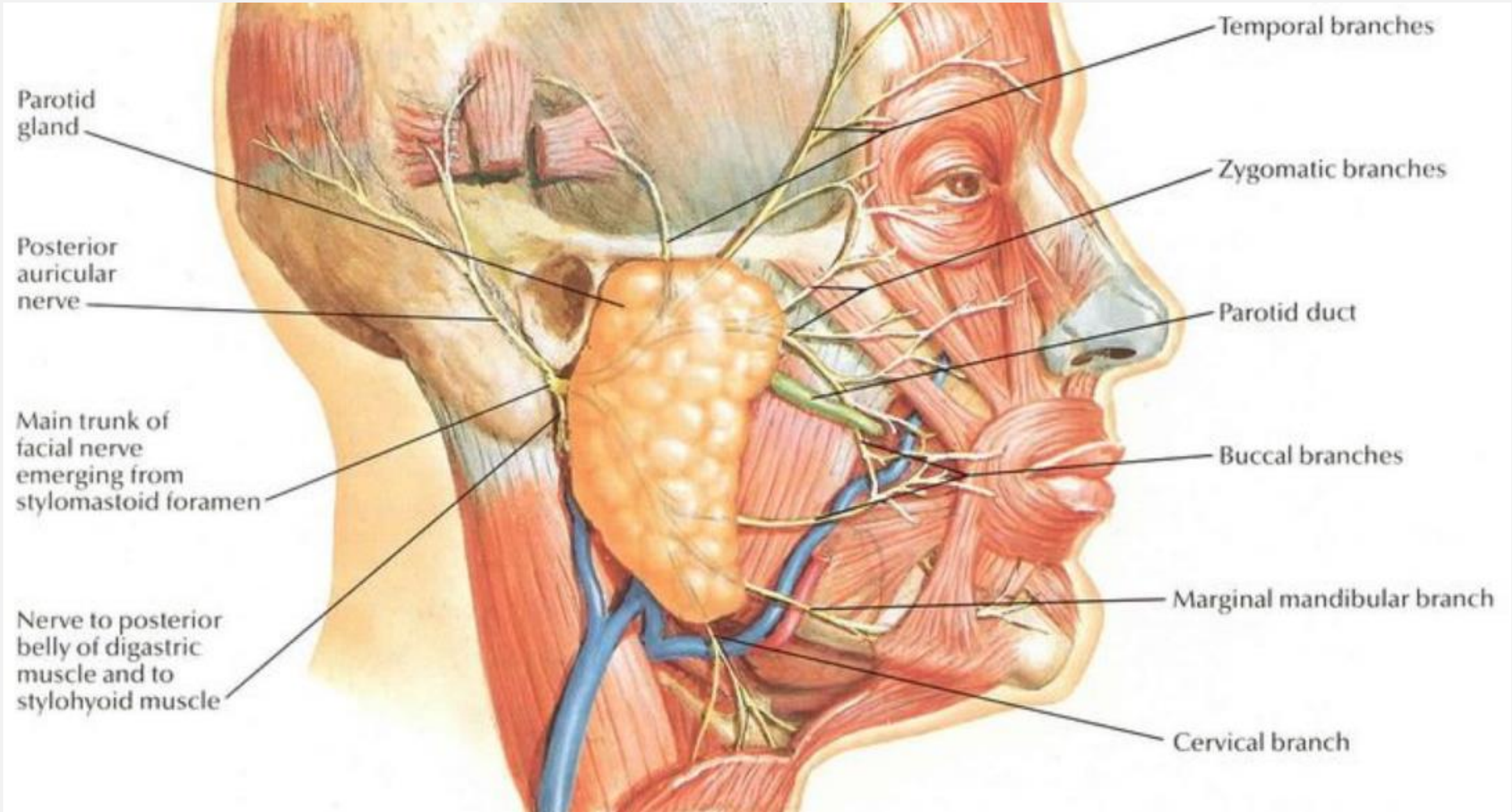

Upper Lip
Teeth
Hard Palate
Soft Palate
Uvula
Tonsil
Floor of Mouth
Lower Lip
Superior Labial Frenulum
Gingiva (Gum)
Glossopalatine Arch
Palatine Arch
Retromolar Trigone
Tongue
Inferior Labial Frenulum

2 口腔血流供應

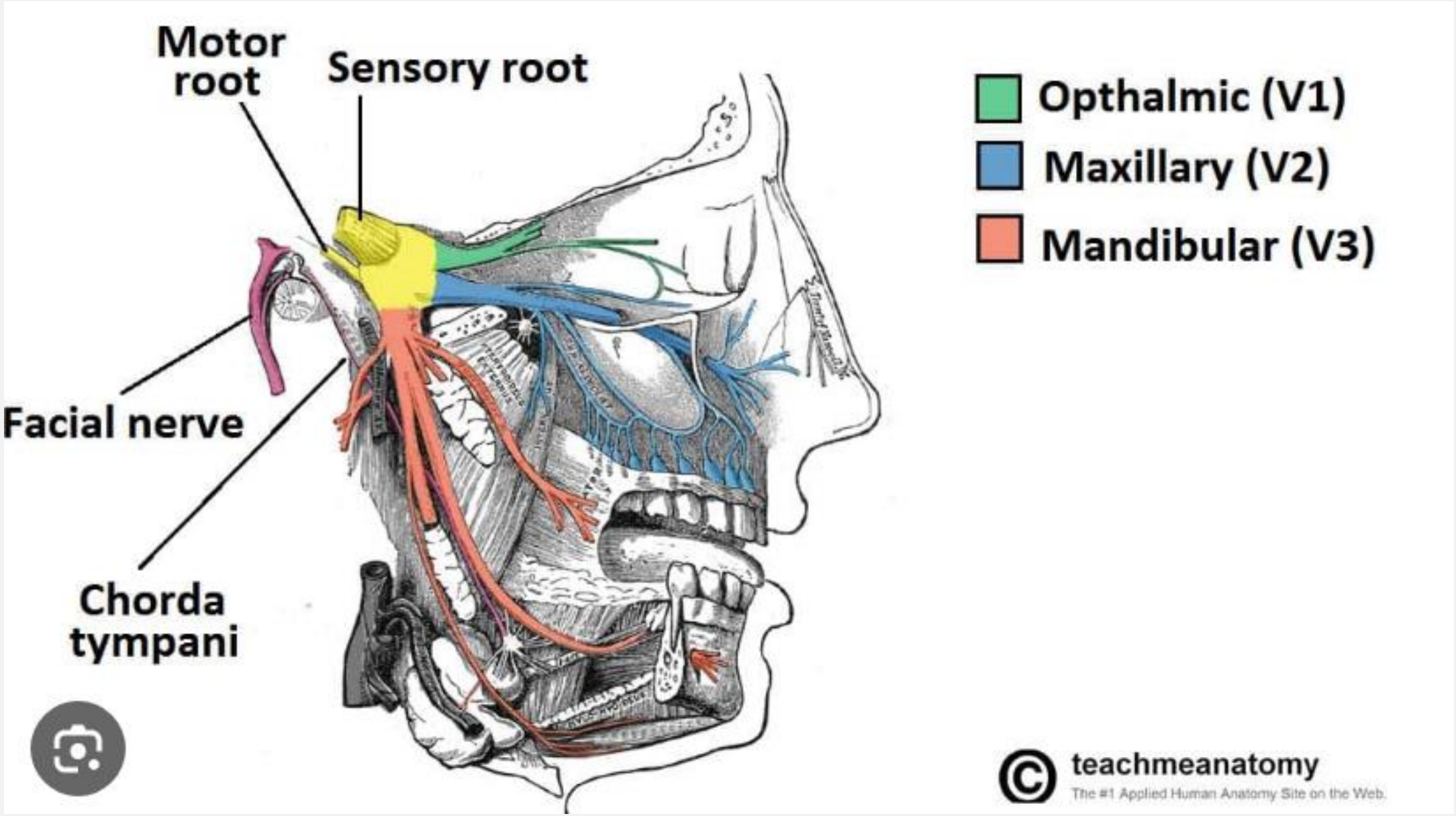

Maxillary artery
Parotid duct
Parotid gland
Superior labial artery
Inferior labial artery
Lingual artery
Mental artery
Submental artery
Facial artery
External carotid artery


Dorsal lingual branch
Deep lingual branch
Lingual artery
Hypoglossal nerve
Sublingual branch
© TeachMeAnatomy

2 口腔神經供應

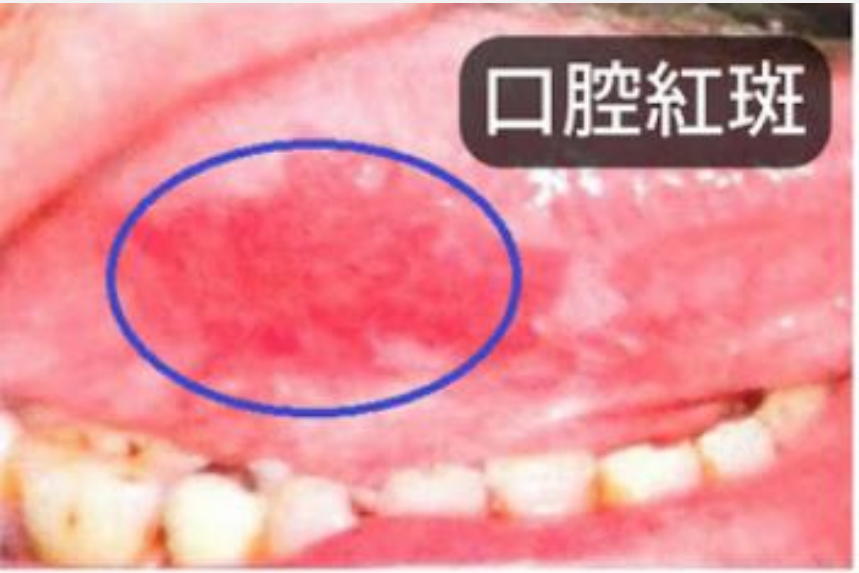

Temporal branches
Parotid gland
Zygomatic branches
Posterior auricular nerve
Parotid duct
Main trunk of facial nerve emerging from stylomastoid foramen
Buccal branches
Marginal mandibular branch
Nerve to posterior belly of digastric muscle and to stylohyoid muscle
Cervical branch

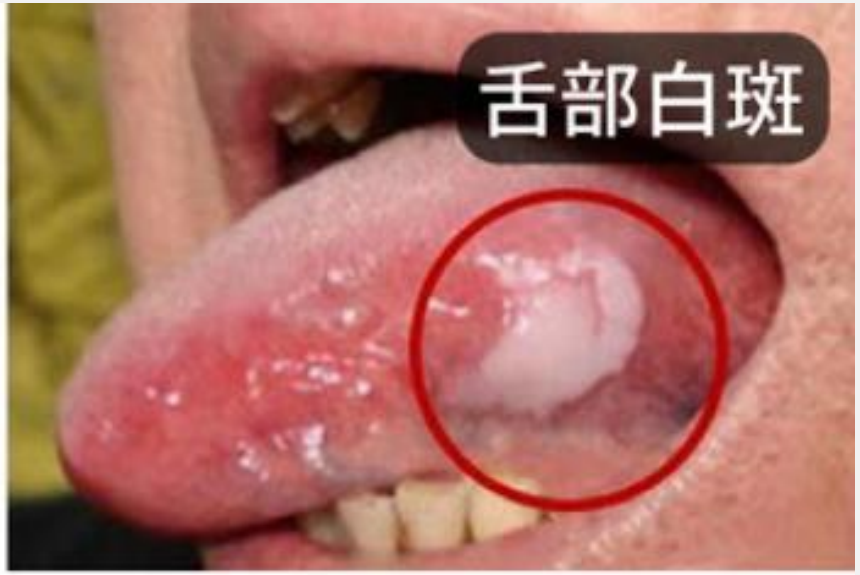
2 口腔神經供應


Motor root
Sensory root
Facial nerve
Chorda tympani
Opthalmic (V1)
Maxillary (V2)
Mandibular (V3)
teachmeanatomy
The #1 Applied Human Anatomy Site on the Web.

2 口腔白斑(Leukoplakia)、紅斑(erythroplakia)

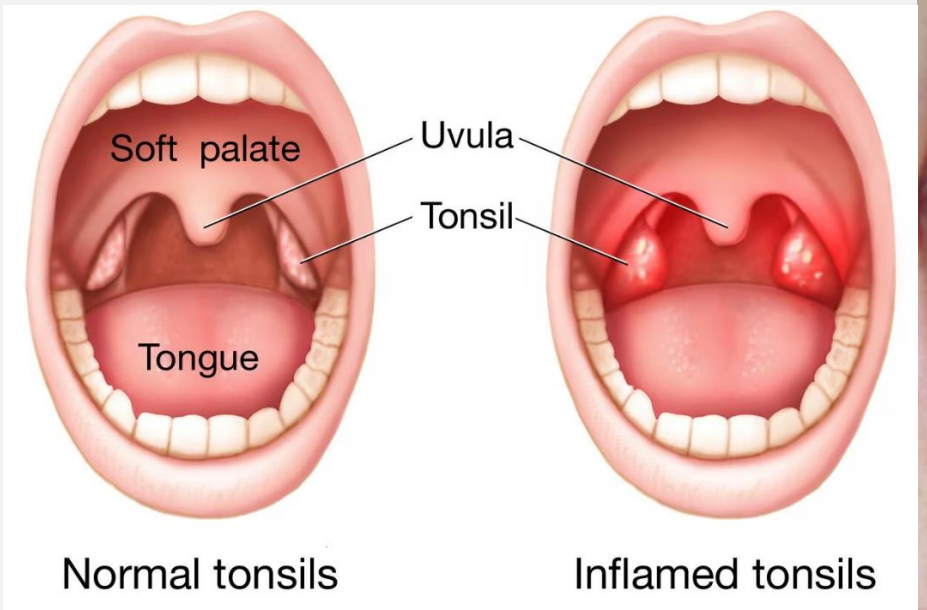
- 常被視為癌前病變
- 症狀表現：無痛性腫塊、久未癒合(>兩周)、表面凹凸不平
- 處置：切片。若為良性，可考慮雷射切除；惡性則照癌症指引治療。

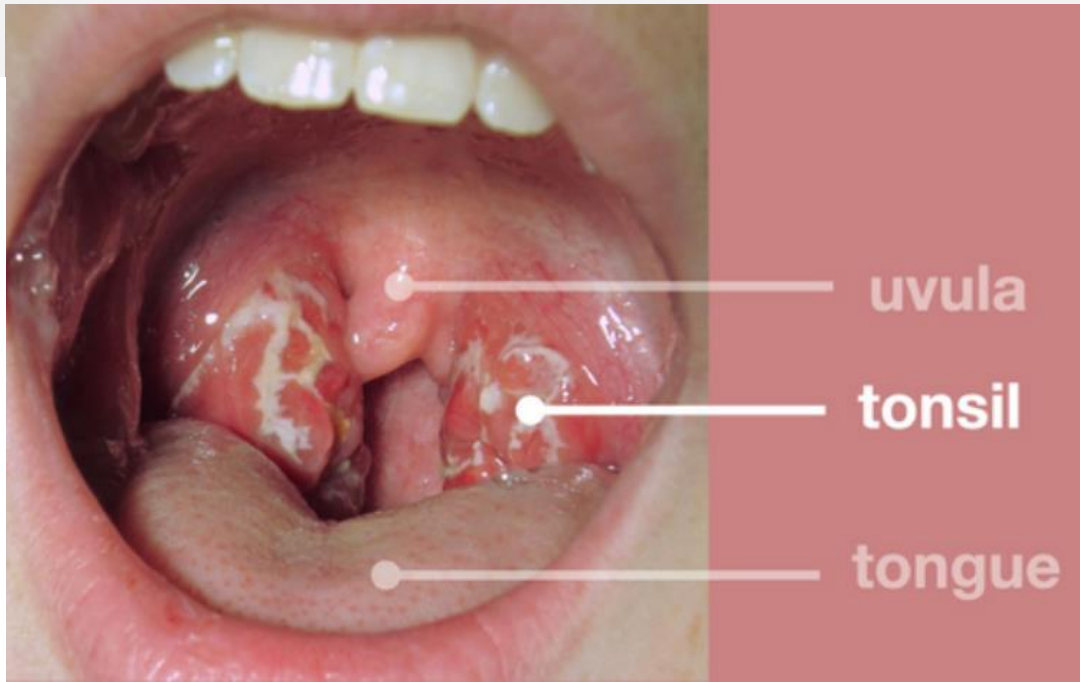




2 急性扁桃腺炎(Acute tonsillitis)

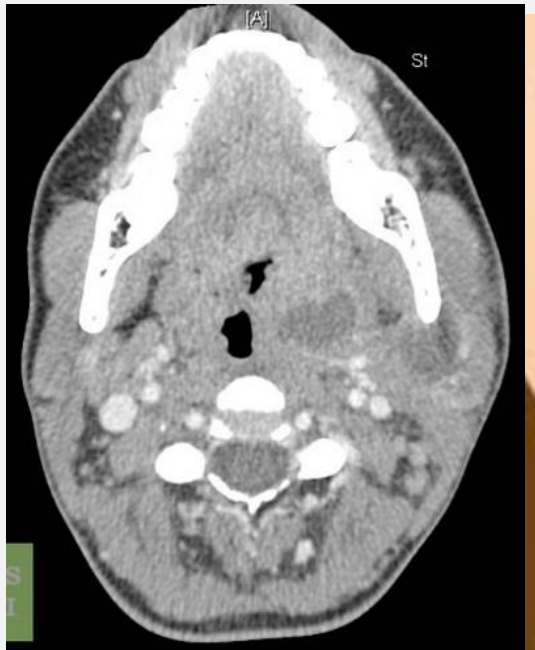
- 多數與病毒感染(adenovirus, coronavirus)有關，少部分為細菌感染(group A streptococcus)
- 症狀：發燒、喉嚨痛、吞嚥疼痛
- 理學檢查：扁桃腺紅腫，有時可見化膿
- 治療：支持性治療(止痛、輸液)、抗生素

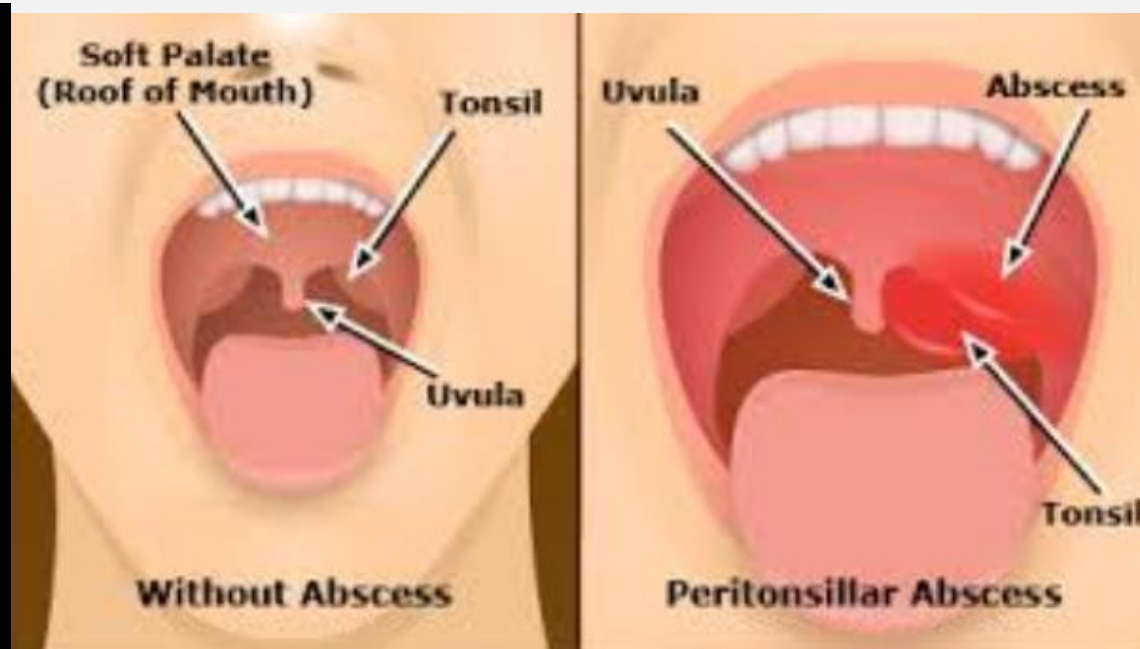




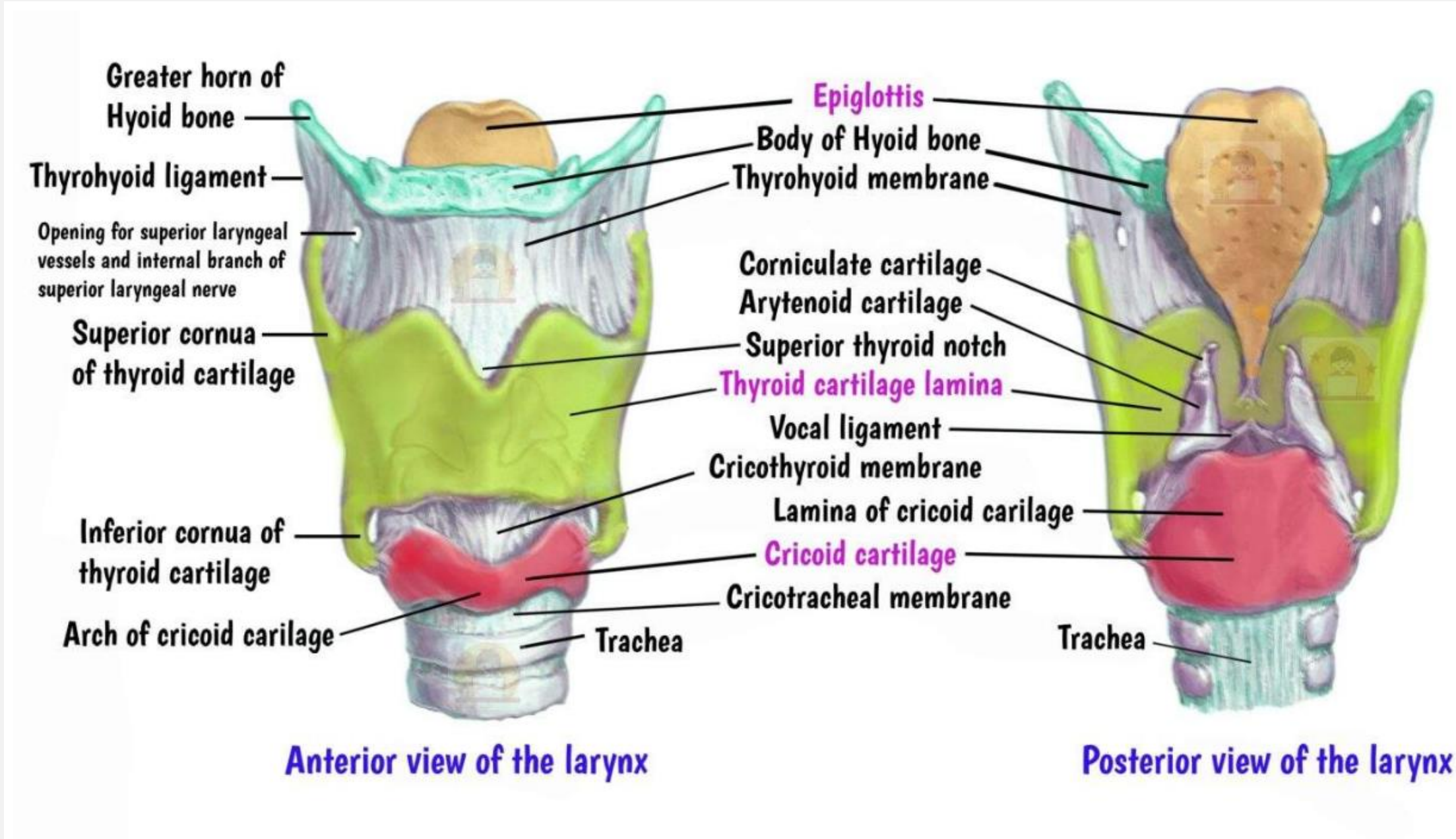
2 扁桃腺周圍膿瘍(Peritonsillar abscess, quinsy, quinsey)

- 通常為細菌感染(group A streptococcus)，常為急性扁桃腺炎的併發症
- 症狀：發燒、喉嚨痛、吞嚥疼痛
- 理學檢查：扁桃腺周圍紅腫，有時可見化膿
- 處置：抗生素、切開引流，必要時預防性插管

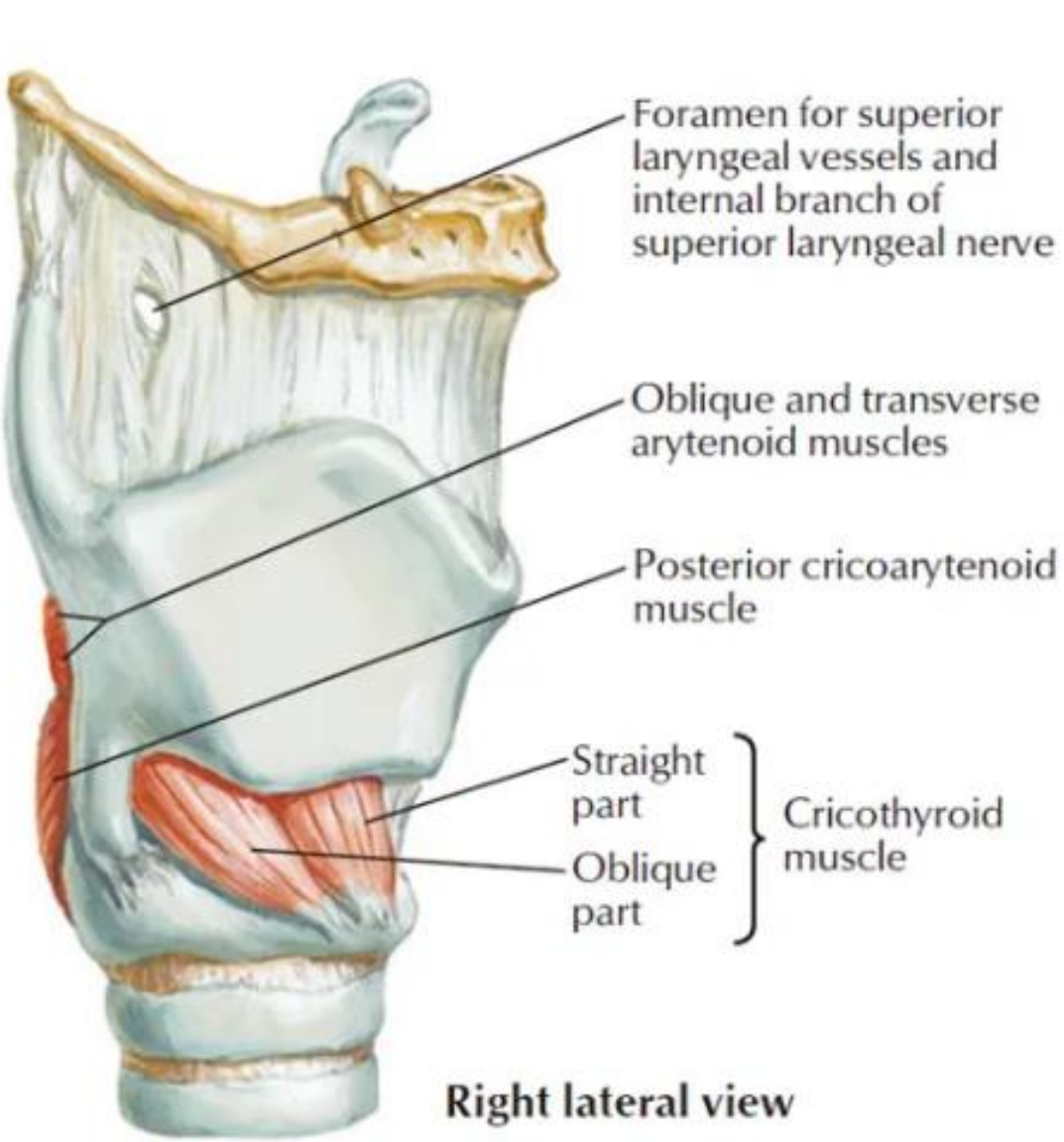


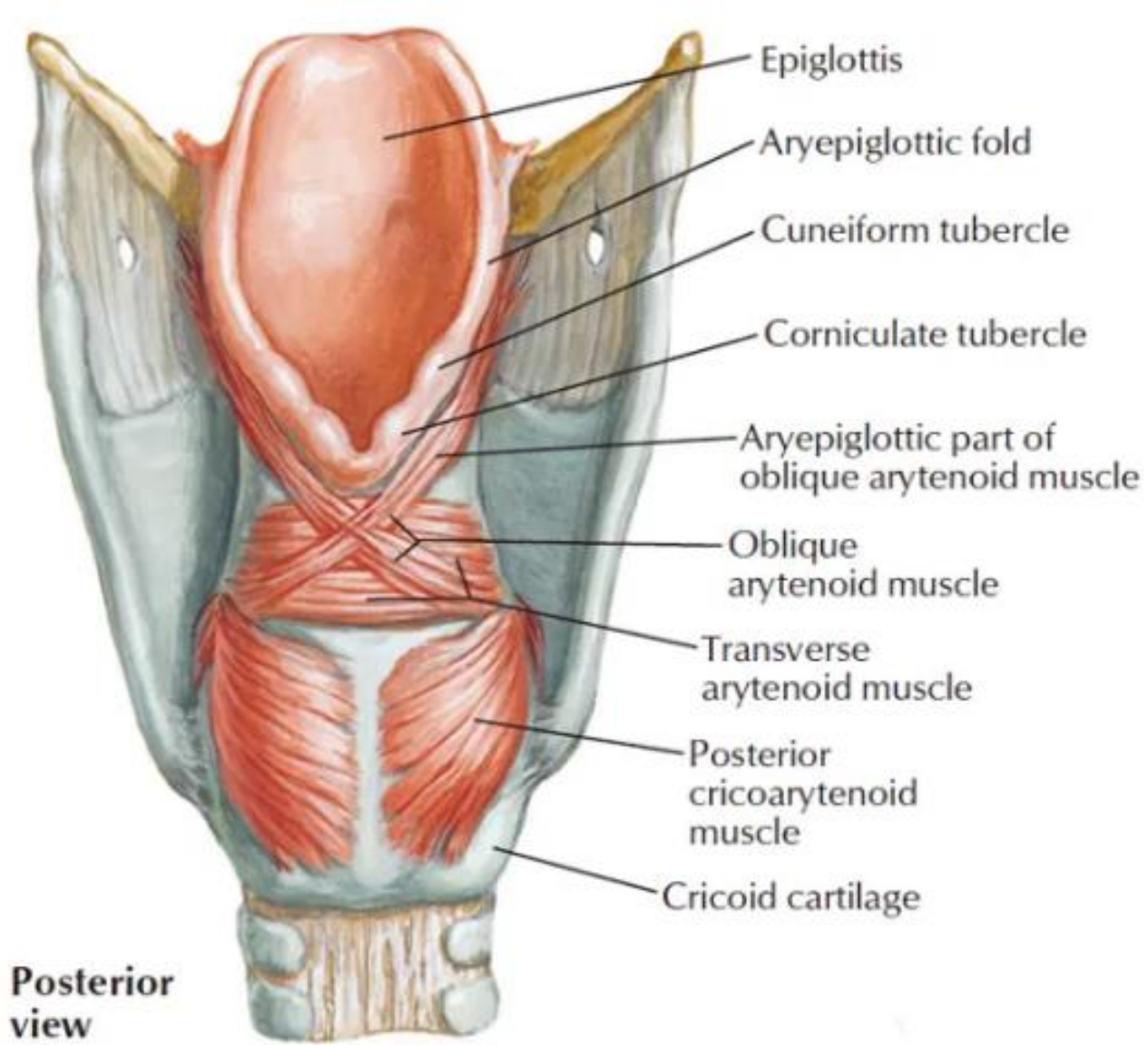


3 喉部解剖


Greater horn of Hyoid bone
Thyrohyoid ligament
Opening for superior laryngeal vessels and internal branch of superior laryngeal nerve
Superior cornua of thyroid cartilage
Inferior cornua of thyroid cartilage
Arch of cricoid carilage
Trachea
Epiglottis
Body of Hyoid bone
Thyrohyoid membrane
Corniculate cartilage
Arytenoid cartilage
Superior thyroid notch
Thyroid cartilage lamina
Vocal ligament
Cricothyroid membrane
Lamina of cricoid carilage
Cricoid cartilage
Cricotracheal membrane
Trachea
Anterior view of the larynx
Posterior view of the larynx

3 喉部解剖-肌肉


Foramen for superior laryngeal vessels and internal branch of superior laryngeal nerve
Oblique and transverse arytenoid muscles
Posterior cricoarytenoid muscle
Straight part
Oblique part
Cricothyroid muscle
Right lateral view

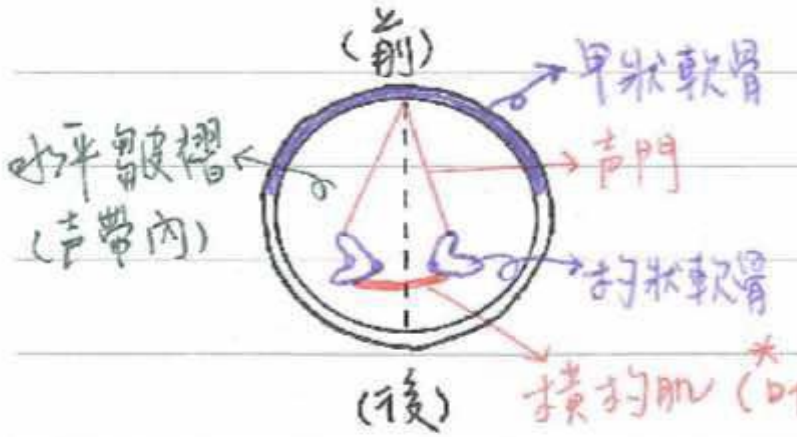

Epiglottis
Aryepiglottic fold
Cuneiform tubercle
Corniculate tubercle
Aryepiglottic part of oblique arytenoid muscle
Oblique arytenoid muscle
Transverse arytenoid muscle
Posterior cricoarytenoid muscle
Cricoid cartilage
Posterior view

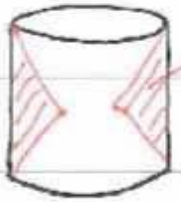
3 喉部解剖-肌肉

<喉肉在肌> ⇒ CN 10

環甲 —— 緊(拉長) → 上喉N.(外側支) —甲狀腺切除術→ 受損 → 不能發高音

環杓 < 後 —— 開(外展)
環杓 < 側(閉側肌) —— 閉(內收)
甲杓 —— 鬆(縮短)
→ 返喉N. —甲狀腺切除術→ 受損 < 單側 ⇒ 聲音沙啞
雙側 ⇒ 聲門閉閉(呼吸困難)

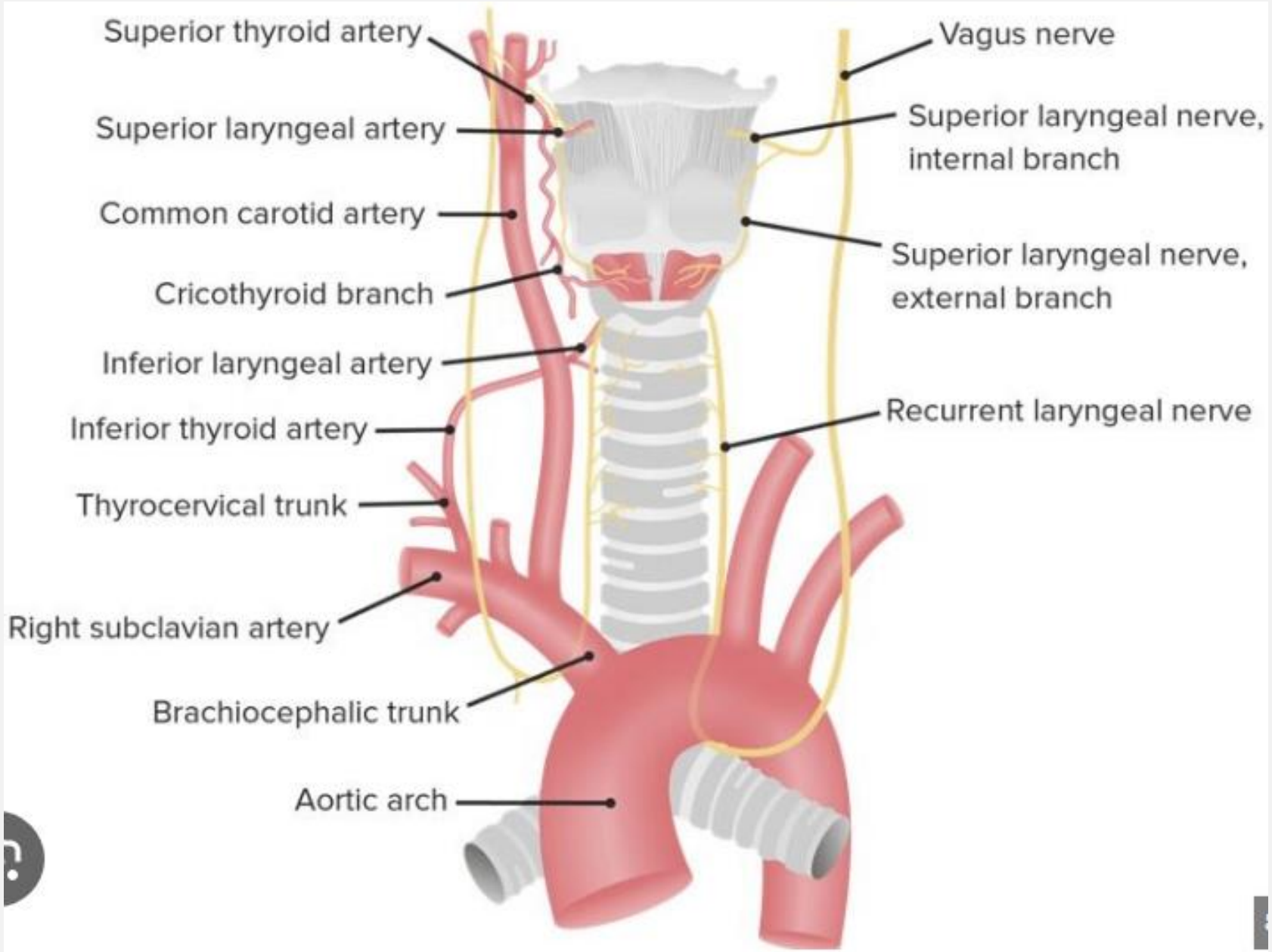




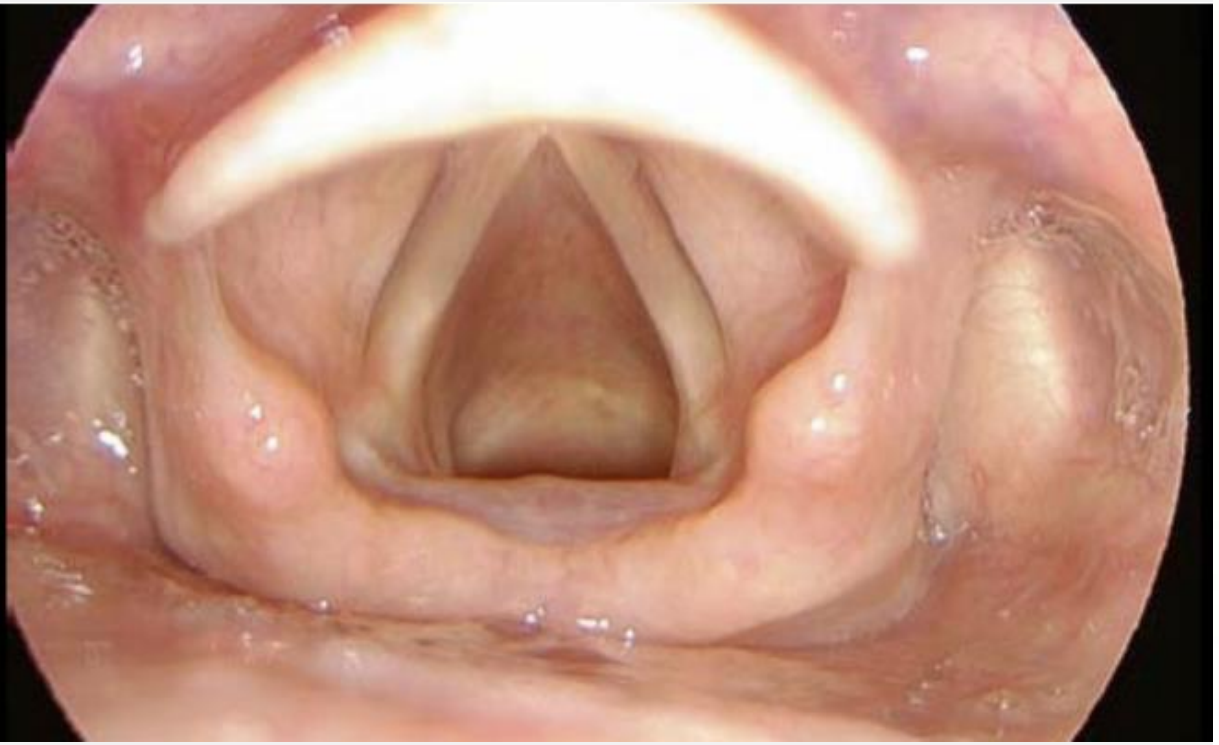
斜杓肌 → 窄化聲門入口
(喉入口括約肌)

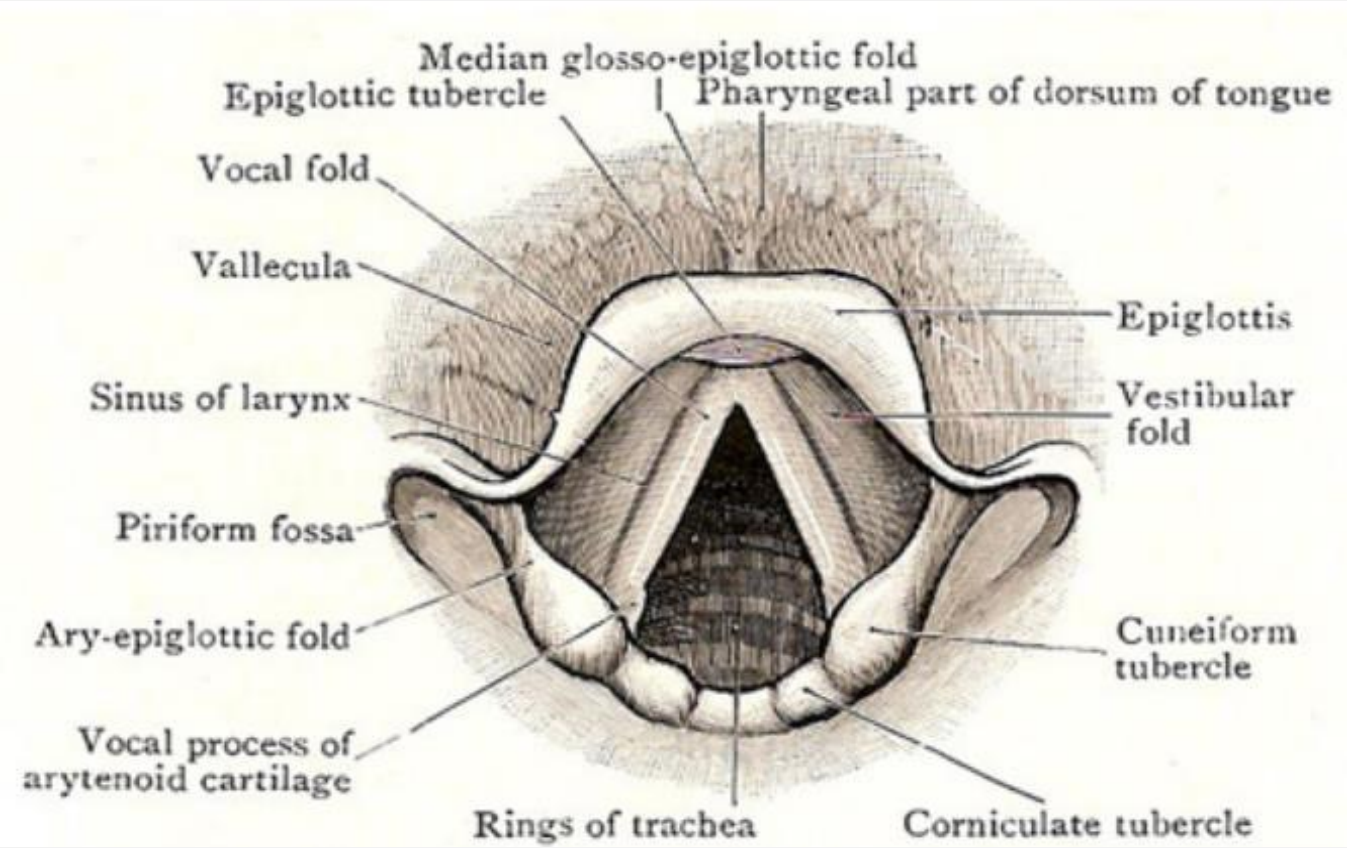
* 上喉N. & 下喉N.(=返喉N.)都是迷走N.分支(CN 10)
  - 內喉N. ⇒ 感覺支(聲帶皺襞以上喉黏膜感覺)
  - 外喉N. ⇒ 運動支(環甲肌運動)

3 喉部解剖-血管、神經

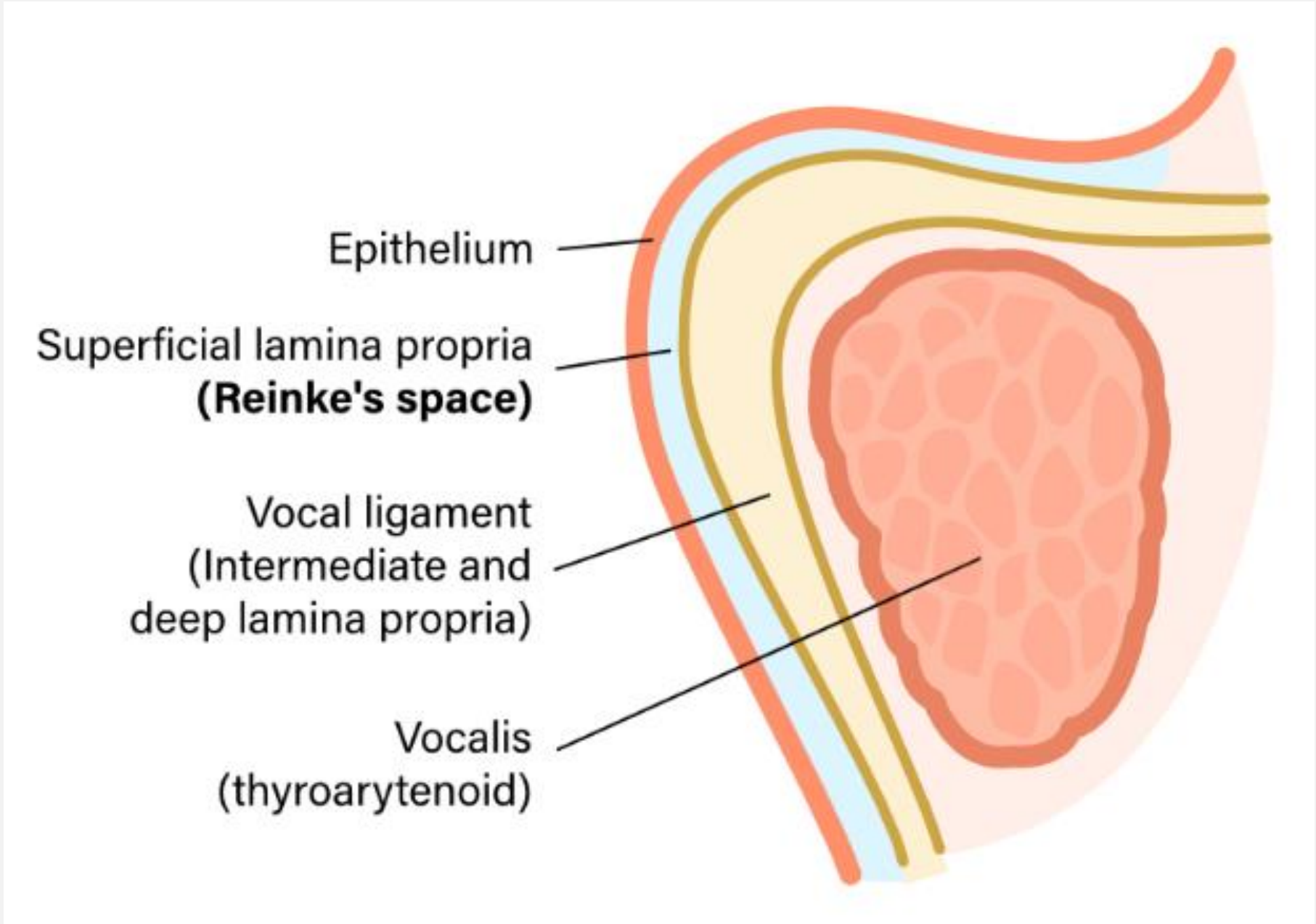

Superior thyroid artery
Superior laryngeal artery
Common carotid artery
Cricothyroid branch
Inferior laryngeal artery
Inferior thyroid artery
Thyrocervical trunk
Right subclavian artery
Brachiocephalic trunk
Aortic arch
Vagus nerve
Superior laryngeal nerve, internal branch
Superior laryngeal nerve, external branch
Recurrent laryngeal nerve

3 喉部解剖




Median glosso-epiglottic fold
Epiglottic tubercle
Pharyngeal part of dorsum of tongue
Vocal fold
Vallecula
Epiglottis
Sinus of larynx
Vestibular fold
Piriform fossa
Ary-epiglottic fold
Cuneiform tubercle
Vocal process of arytenoid cartilage
Rings of trachea
Corniculate tubercle

3 喉部解剖


Epithelium
Superficial lamina propria
(Reinke's space)
Vocal ligament
(Intermediate and
deep lamina propria)
Vocalis
(thyroarytenoid)

4 聲音評估

- 職業、菸酒檳榔史
- **Maximum phonation time (MPT)**
  - **The longest duration of sustained vowel phonation(深吸氣後說E)，正常>25秒**
- **The S/Z ratio**
  - **比較the MPT of voiced (/z/) and unvoiced (/s/) sound，正常S音遠久於Z音**
- **VHI-10**
- **GRBAS**

4 聲音評估

Component		Description
G	Grade	Degree of hoarseness of the voice
R	Roughness	Impression of irregularity of the vibration of the vocal folds
B	Breathiness	Degree to which air escaping from between the vocal folds can be heard by the examiner
A	Asthenia	Degree of weakness heard in the voice
S	Strain	Extent to which strain or hyperfunctional use of phonation is heard
I	Instability	Changes in voice quality over time

Rating scale: 0, normal; 1, slight; 2, moderate; 3, severe.

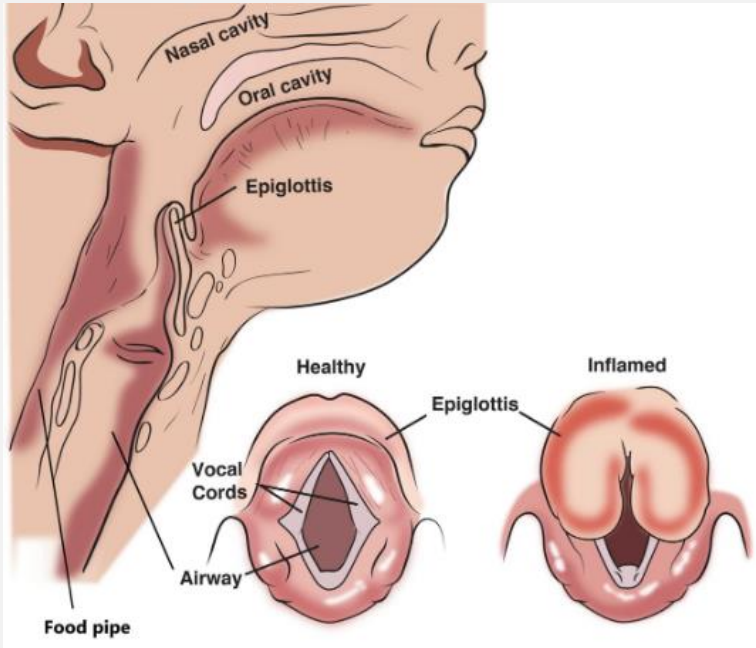
Source: Yamauchi, E.J., Imaizumi, S., Maruyama, H. & Haji, T. (2010). Perceptual evaluation of pathological voice quality: A comparative analysis between the RASATI and GRBASI scales. *Logopedics Phoniatrics Vocology*, *35*, 121–128.

4 聲音評估

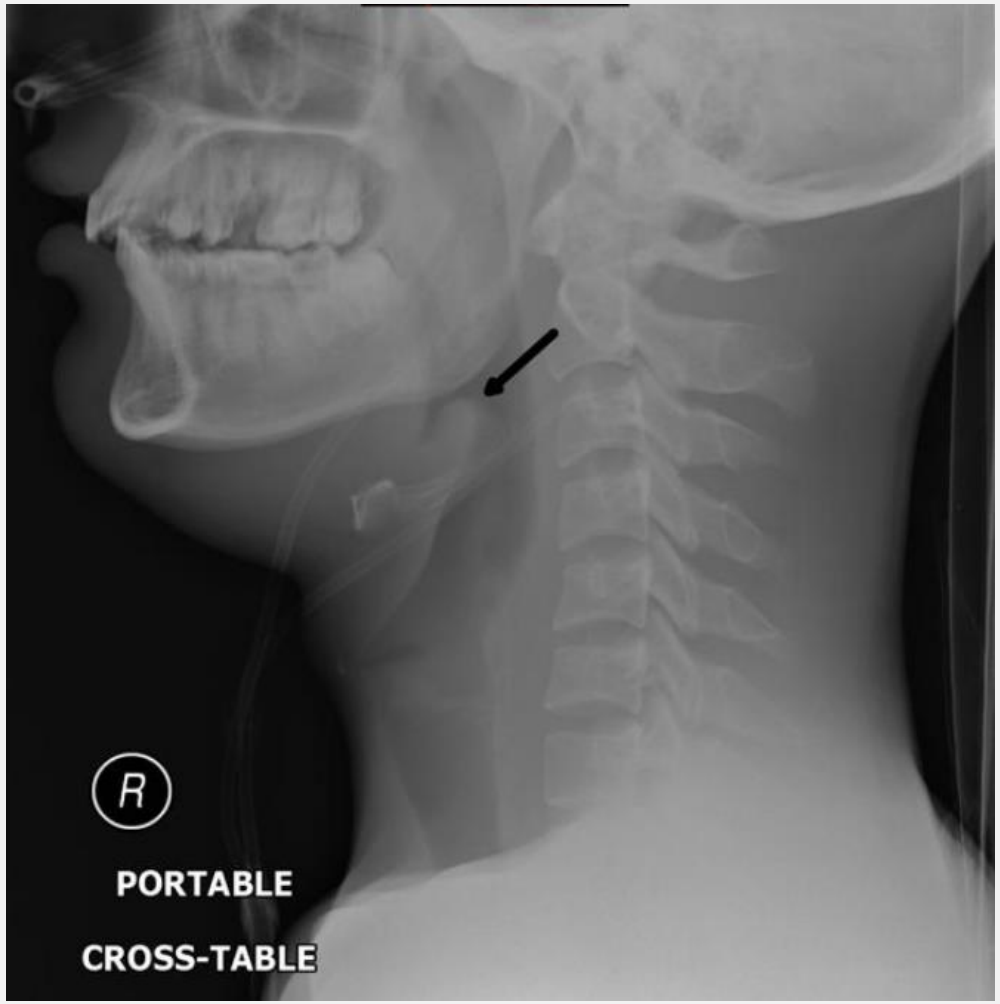
Voice Handicap Index-10						
F1	My voice makes it difficult for people to hear me.	0	1	2	3	4
F2	People have difficulty understanding me in a noisy room.	0	1	2	3	4
F8	My voice difficulties restrict my personal and social life.	0	1	2	3	4
F9	I feel left out of conversation because of my voice.	0	1	2	3	4
F10	My voice problem causes me to lose income.	0	1	2	3	4
P5	I feel as though I have to strain to produce voice.	0	1	2	3	4
P6	The clarity of my voice is unpredictable.	0	1	2	3	4
E4	My voice problem upsets me.	0	1	2	3	4
E6	My voice makes me feel handicapped.	0	1	2	3	4
P3	People ask, "What's wrong with your voice?"	0	1	2	3	4

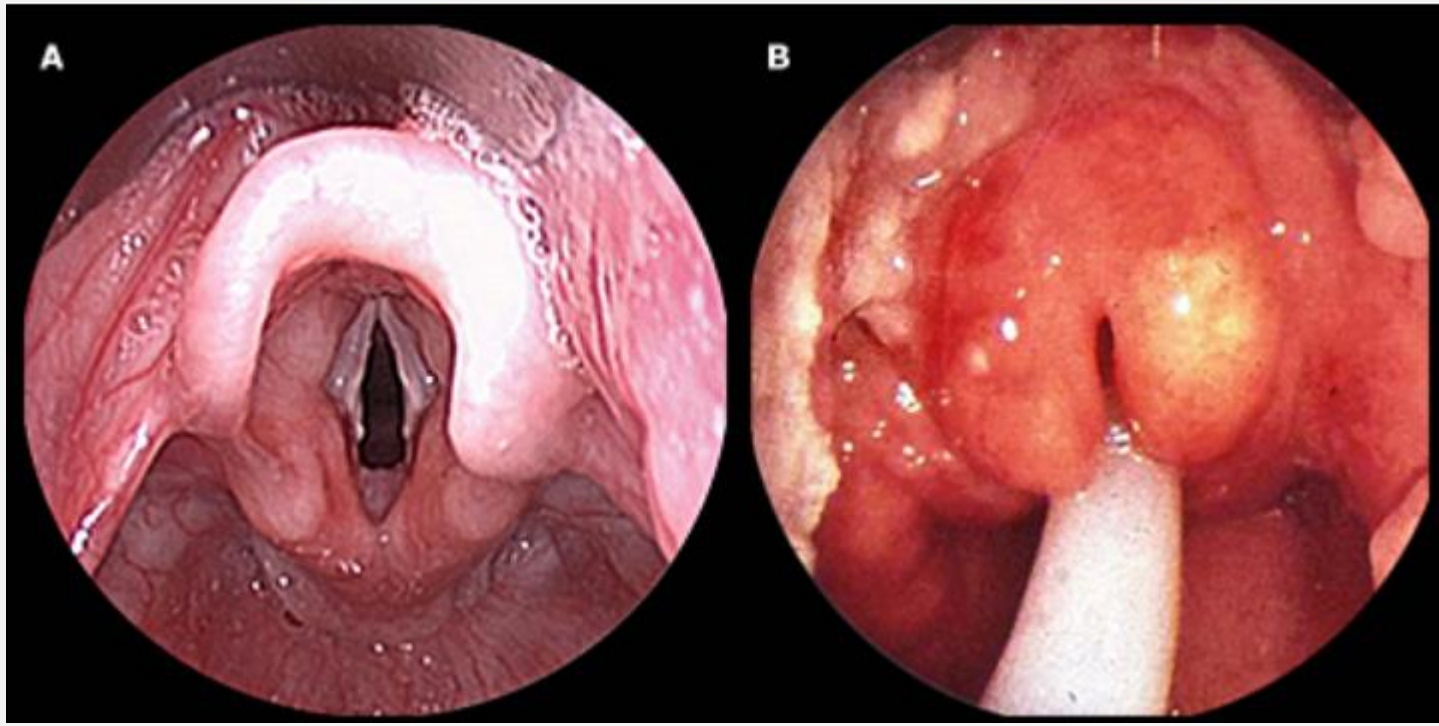
5 急性會厭炎

- 會厭軟骨周遭因感染或是創傷導致的發炎、腫脹
- 常見致病菌：**Streptococcus pneumoniae, Streptococcus pneumoniae**
- 症狀：發燒、喉嚨痛、吞嚥困難、呼吸困難、發聲困難
- 理學檢查： 會厭軟骨處腫脹、**stridor**、 **Neck LAT可見Thumb sign**
- 治療：抗生素、可能須預防性插管



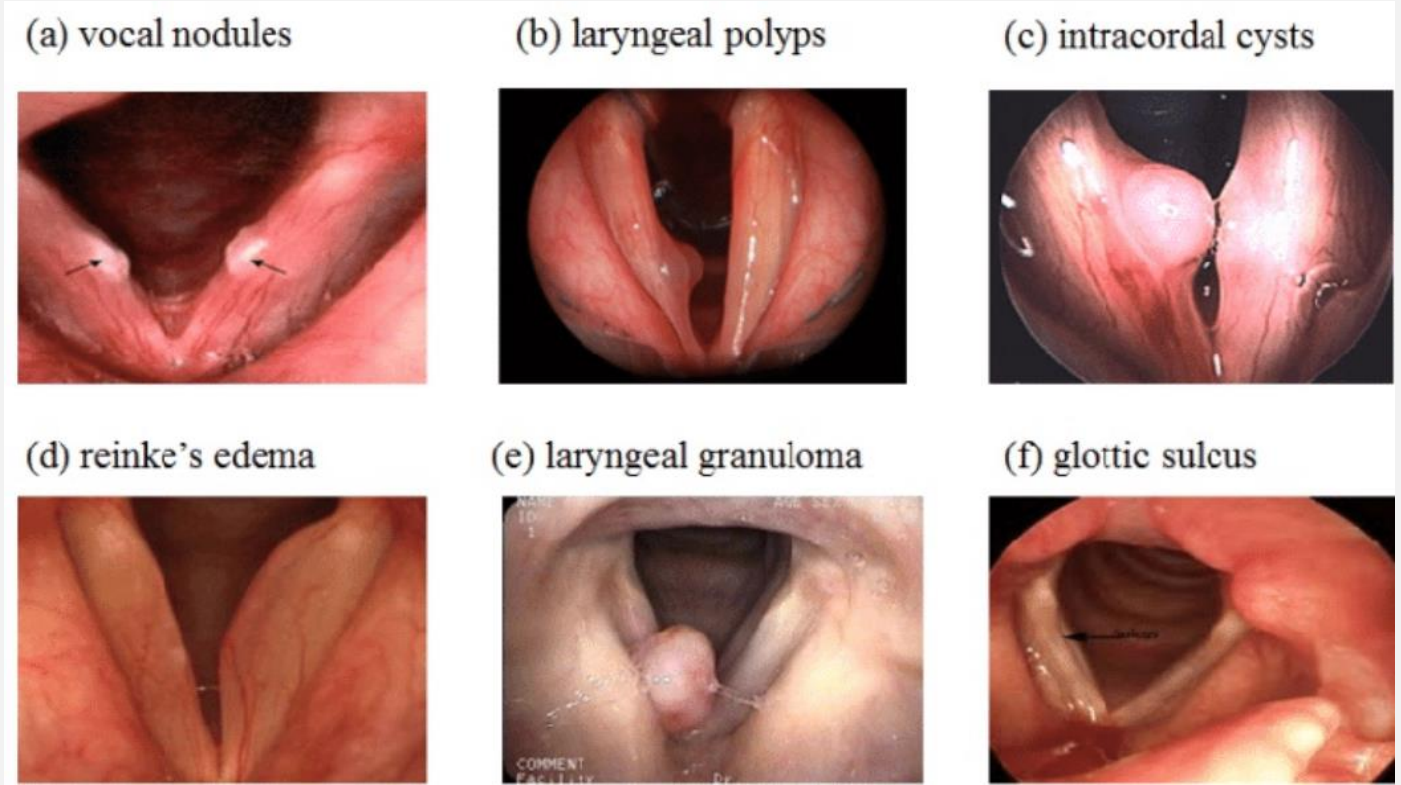
5 急性會厭炎

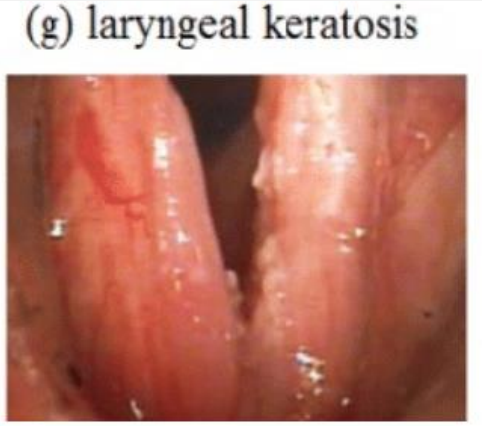


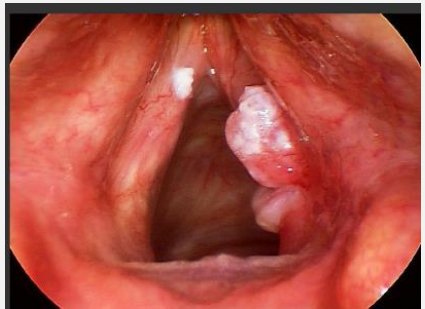


5 聲帶疾病 Vocal cord lesion

- 通常與聲音過度使用有關(歌手、老師)，或與抽菸有關
- 症狀：沙啞、喉嚨痛、聲音疲勞
- 處置：休息、口服類固醇、喉顯微手術、喉注射手術

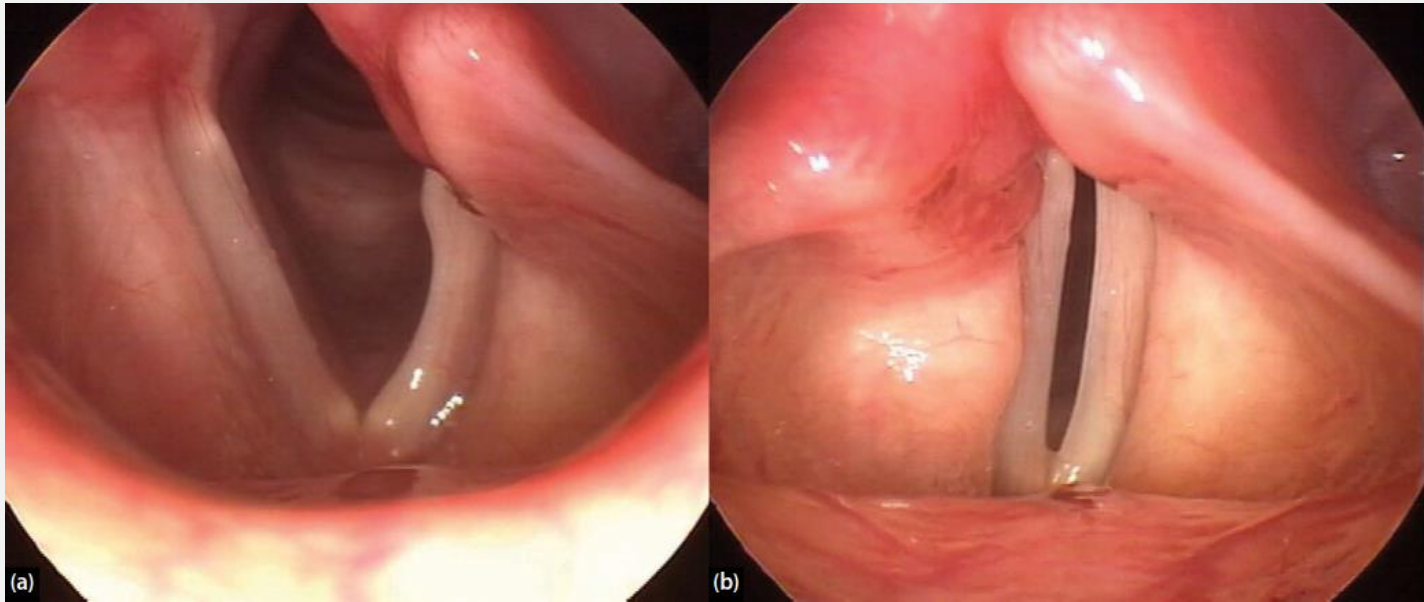






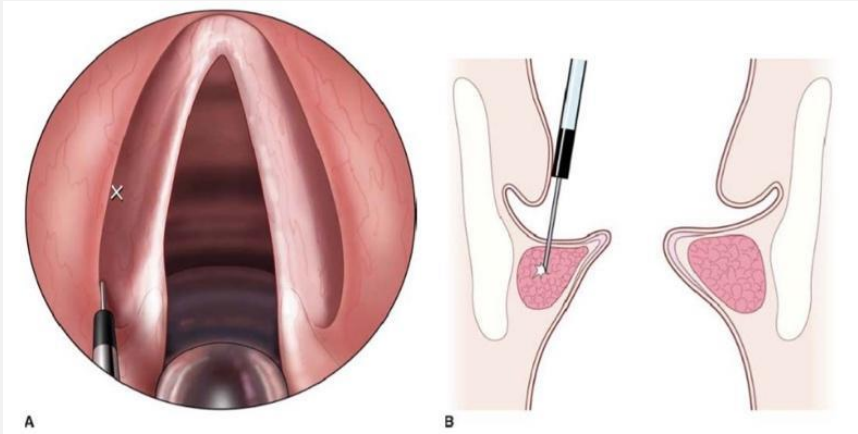
5 單側聲帶麻痺

- 周邊神經受損造成聲帶無法運動(特別是收縮)，最多為醫源性(甲狀腺術後)
- 症狀：沙啞、音量變小、吞嚥困難(較少發生)
- 檢查：頸部觸診、咽喉內視鏡、神經學檢查、頸部電腦斷層



5 單側聲帶麻痺－治療

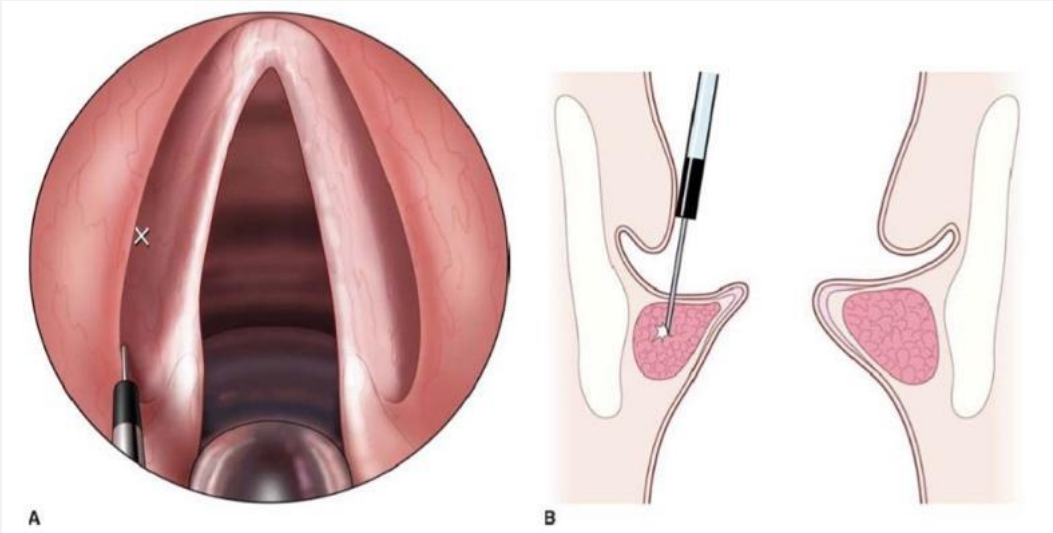
- **保守治療，觀察**
  - 在沒有呼吸困難以及併發症情況下可以保守治療。也可進行語言治療。
- **聲帶注射**
  - 有吞嚥困難以及容易嗆到的病人可以選擇此手術方法，適合在**vocal cord gap**較小**(2-3mm)**的病人
- **Laryngeal Framework Surgery**
  - 適合在**vocal cord gap**較大**(>3mm)**的病人，以及**gap**位於後方的病人



5 Injection Laryngoplasty

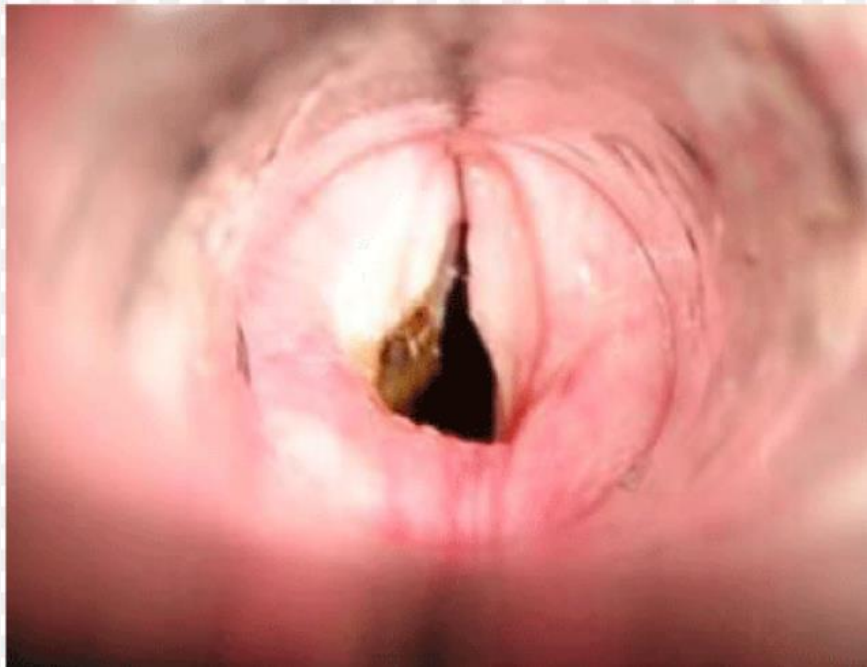
- 藉由注射可吸收式的填充物入the paralyzed fold 來 improve the glottic insufficiency，大多數填充物都需要overinjection to allow for reabsorption

- 補充
  - 理想注射的位置在vocalis m.的medial aspect，不要打到Reinke's space，會永久loss vocal vibration。注射太表，會擾亂VF vibration ; 注射太外側無法有效medialization
    理想注射點在vocal process外側緣與membranous VF的中點; 目標是稍微overcorrection讓注射處膨起呈圓弧狀

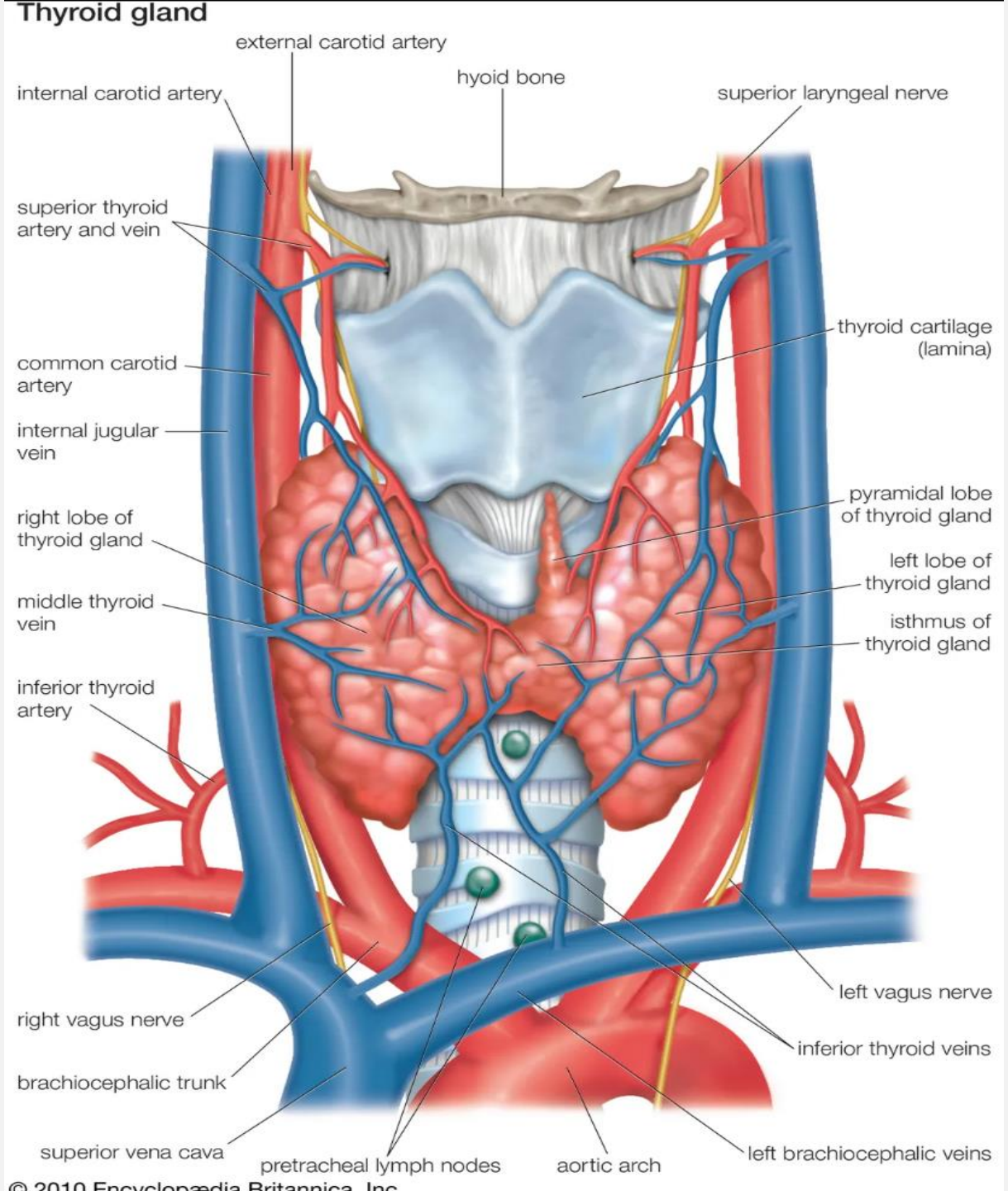


5 雙側聲帶麻痺

- 成因基本與單側聲帶麻痺一樣，主要仍為醫源性
- 症狀：喘、呼吸音變大(尤其是吸氣時)、嗆入。吞嚥、講話通常不受影響
- 處置：若呼吸困難則需要氣切維持呼吸道暢通



6 甲狀腺解剖位置


Thyroid gland
external carotid artery
internal carotid artery
hyoid bone
superior laryngeal nerve
superior thyroid artery and vein
thyroid cartilage (lamina)
common carotid artery
internal jugular vein
pyramidal lobe of thyroid gland
right lobe of thyroid gland
left lobe of thyroid gland
middle thyroid vein
isthmus of thyroid gland
inferior thyroid artery
left vagus nerve
right vagus nerve
inferior thyroid veins
brachiocephalic trunk
superior vena cava
pretracheal lymph nodes
aortic arch
left brachiocephalic veins
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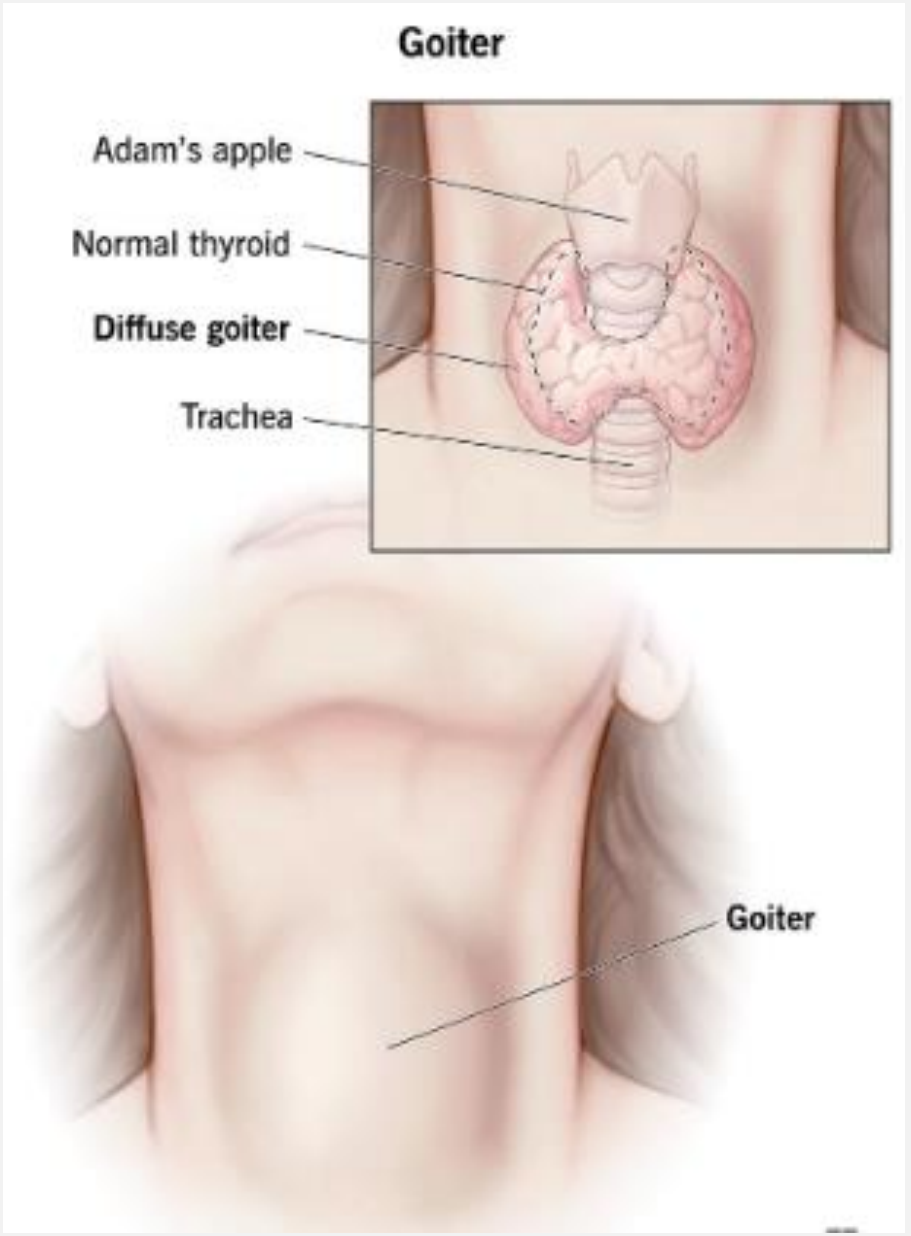
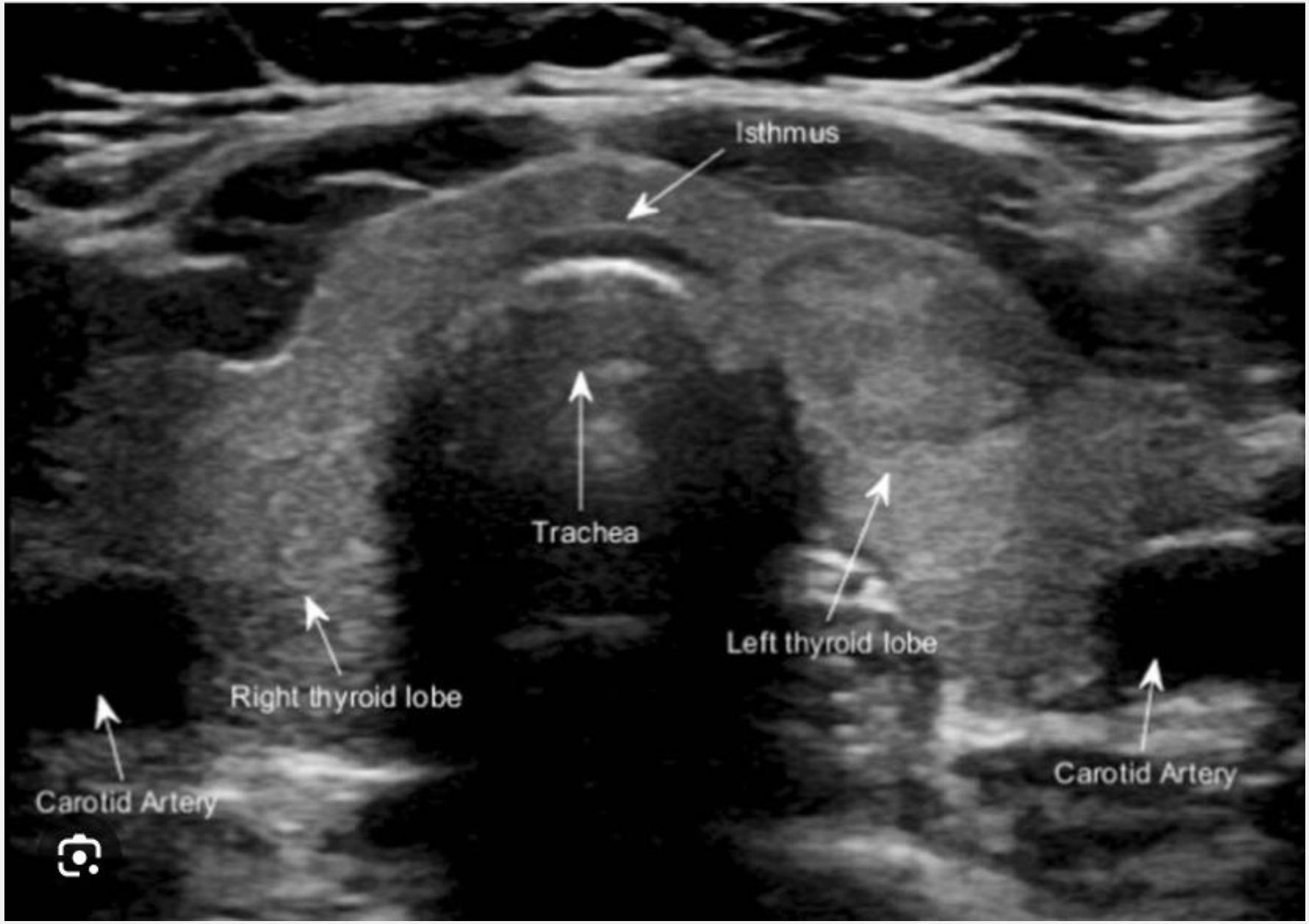
6 Thyroid mass- evaluation

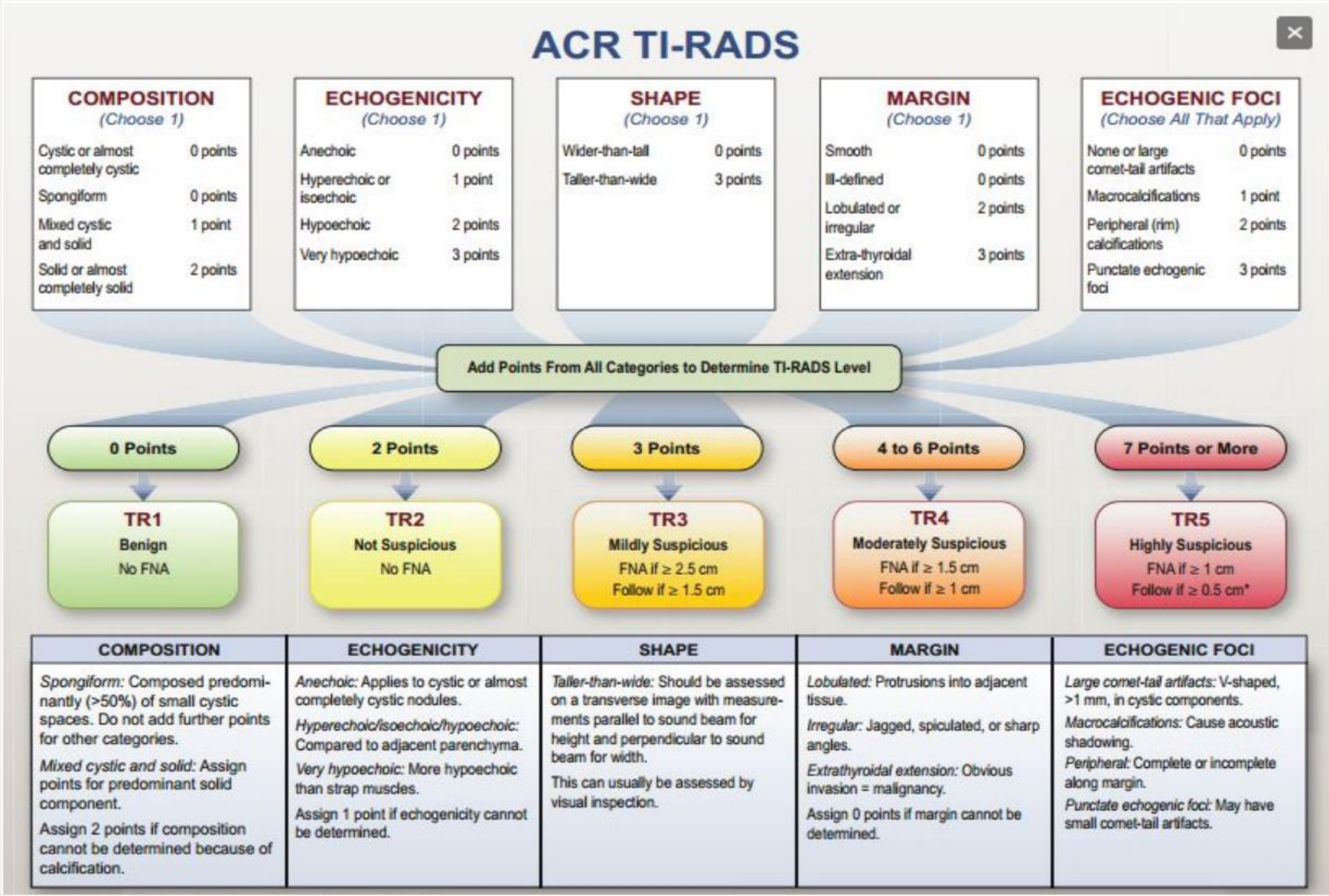
- PE：觸診
- Image：超音波、電腦斷層
- LAB：T3, Free T4, TSH, Ca, Mg, P, Anti-TPO



6 Thyroid sono



6 Thyroid sono



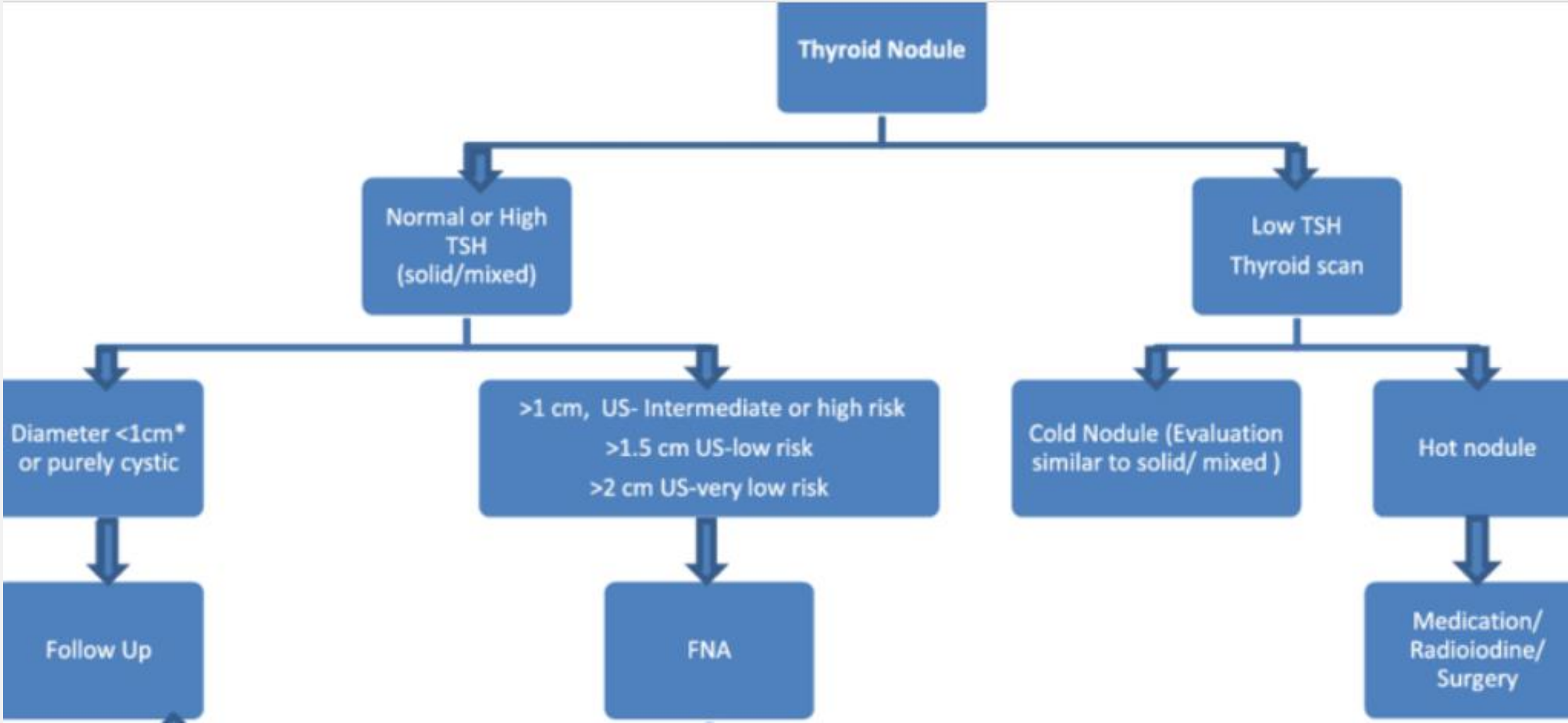
6 Thyroid FNA

The 2017 Bethesda system for reporting thyroid cytopathology

Implied risk of malignancy and recommended clinical management (simplified)

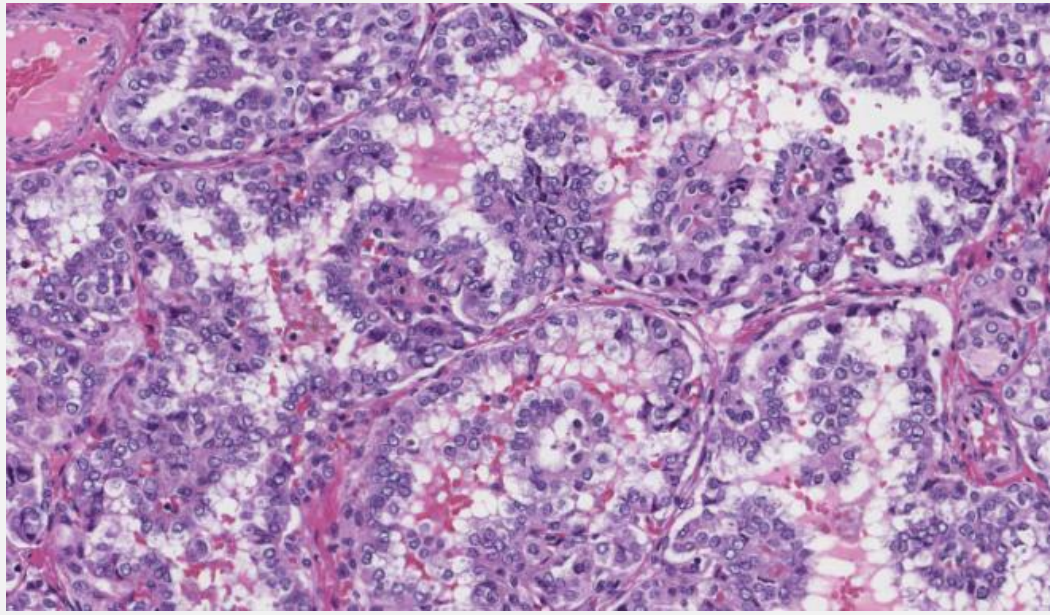
Diagnostic category	Risk of malignancy		Usual management
	NIFTP ≠ cancer	*NIFTP = cancer*	
I. **Nondiagnostic**	5–10%	5–10%	Repeat FNA with ultrasound guidance
II. **Benign**	0–3%	0–3%	Clinical and sonographic follow–up
III. **AUS/FLUS**	6–18%	≈ 10–30%	Repeat FNA, molecular testing, or lobectomy
IV. **FN/SFN**	10–40%	25–40%	Molecular testing, lobectomy
V. **Suspicious for malignancy**	45–60%	50–75%	Near–total thyroidectomy or lobectomy
VI. **Malignant**	94–96%	97–99%	Near–total thyroidectomy or lobectomy

6 良性甲狀腺腫瘤


Thyroid Nodule
Normal or High TSH (solid/mixed)
Low TSH
Thyroid scan
Diameter <1cm* or purely cystic
>1 cm, US- Intermediate or high risk
>1.5 cm US-low risk
>2 cm US-very low risk
Cold Nodule (Evaluation similar to solid/ mixed)
Hot nodule
Follow Up
FNA
Medication/ Radioiodine/ Surgery

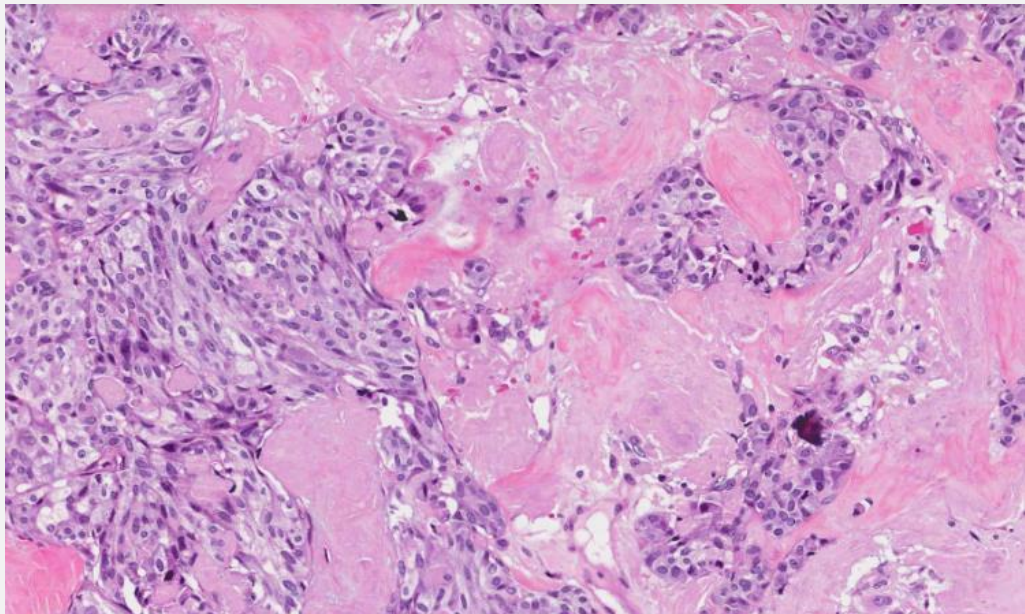
5 甲狀腺乳突癌(Papillary cancer)

- 佔甲狀腺惡性腫瘤80%，由甲狀腺濾泡上皮細胞衍生而來。女性發生率較高
- 症狀：脖子腫塊
- 診斷：超音波、細針穿刺
- 治療：以手術切除(患側甲狀腺切除)為主，若腫瘤>4公分或是有包膜外侵犯、淋巴結轉移則應做全甲狀腺切除



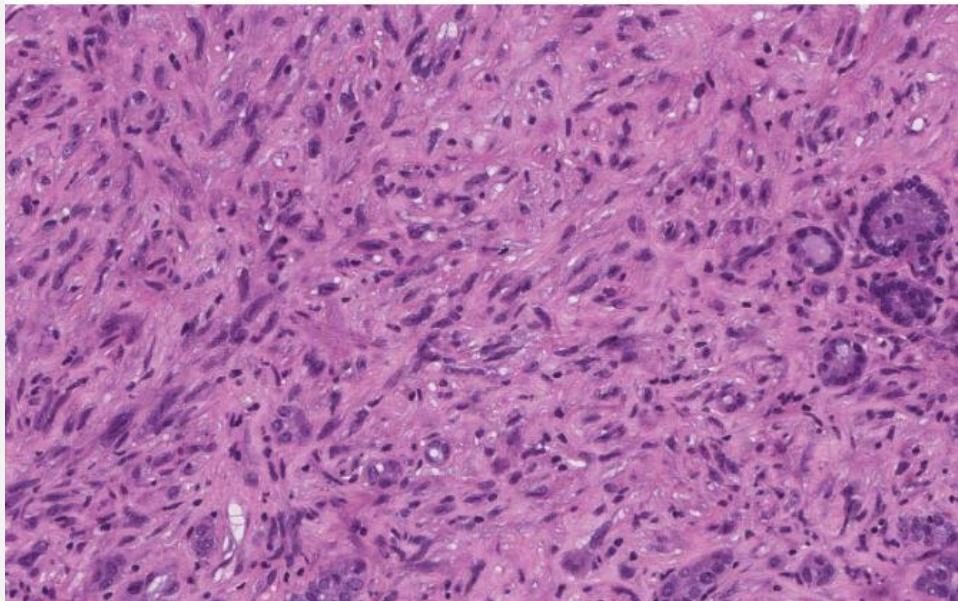
5 甲狀腺髓質癌(Medullary cancer)

- 佔甲狀腺惡性腫瘤3%，由甲狀腺旁細胞（C-cells，一種神經內分泌的細胞）衍生而來。女性發生率較高。與MEN2有關係
- 症狀：脖子腫塊、腹瀉
- 診斷：超音波、抽血(calcitonin↑)、細針穿刺
- 治療：全甲狀腺切除合併氣管前淋巴廓清術



5 甲狀腺未分化癌(Anaplastic cancer)

- 佔甲狀腺惡性腫瘤1%，預後極差。通常確診時已經遠端轉移
- 症狀：脖子腫脹、呼吸困難
- 診斷：超音波、細針穿刺
- 治療：若能手術應手術切除，但通常發現時已經無法手術只能放射化學治療。



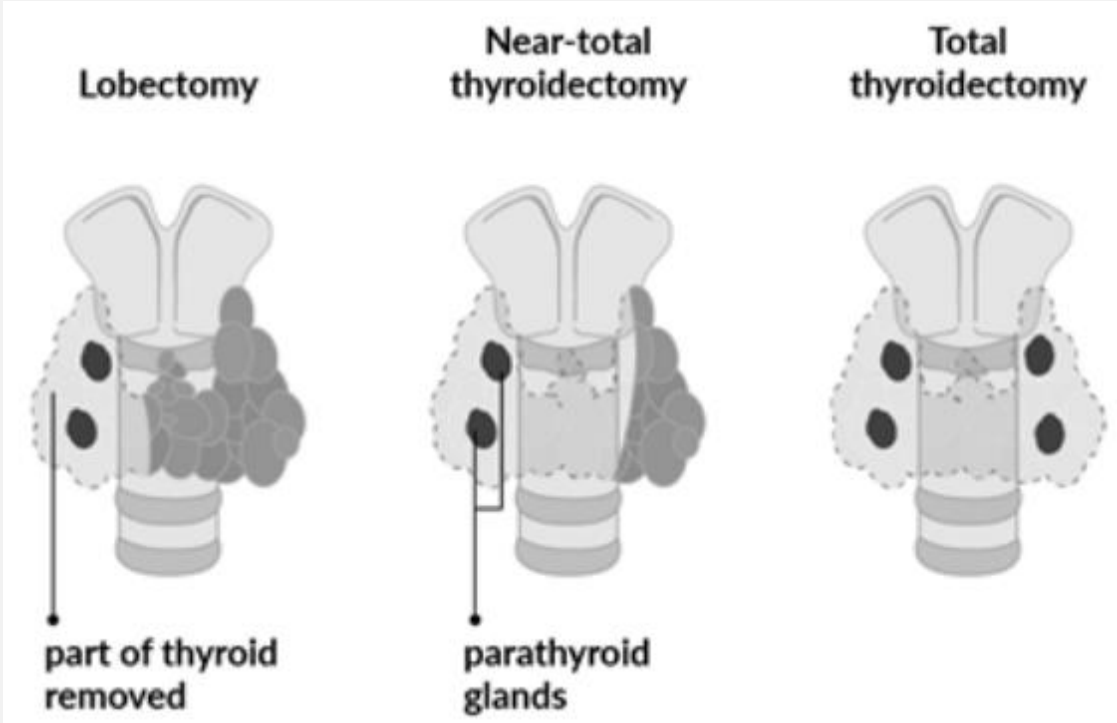
5 全甲狀腺切除手術(Total thyroidectomy)- 適應症

良性腫瘤

- 腫瘤 >4 公分
- 雙側多發性結節
- 經藥物治療仍無法控制的Graves disease
- 病人考量、美容考量

惡性腫瘤

- 甲狀腺乳突癌(Papillary cancer)
  - 腫瘤> 4cm, 有包膜外侵犯, 頸部淋巴轉移
- 甲狀腺髓質癌(Medullary cancer)
- 甲狀腺未分化癌(Anaplastic cancer)
  - 通常確診時已無法手術

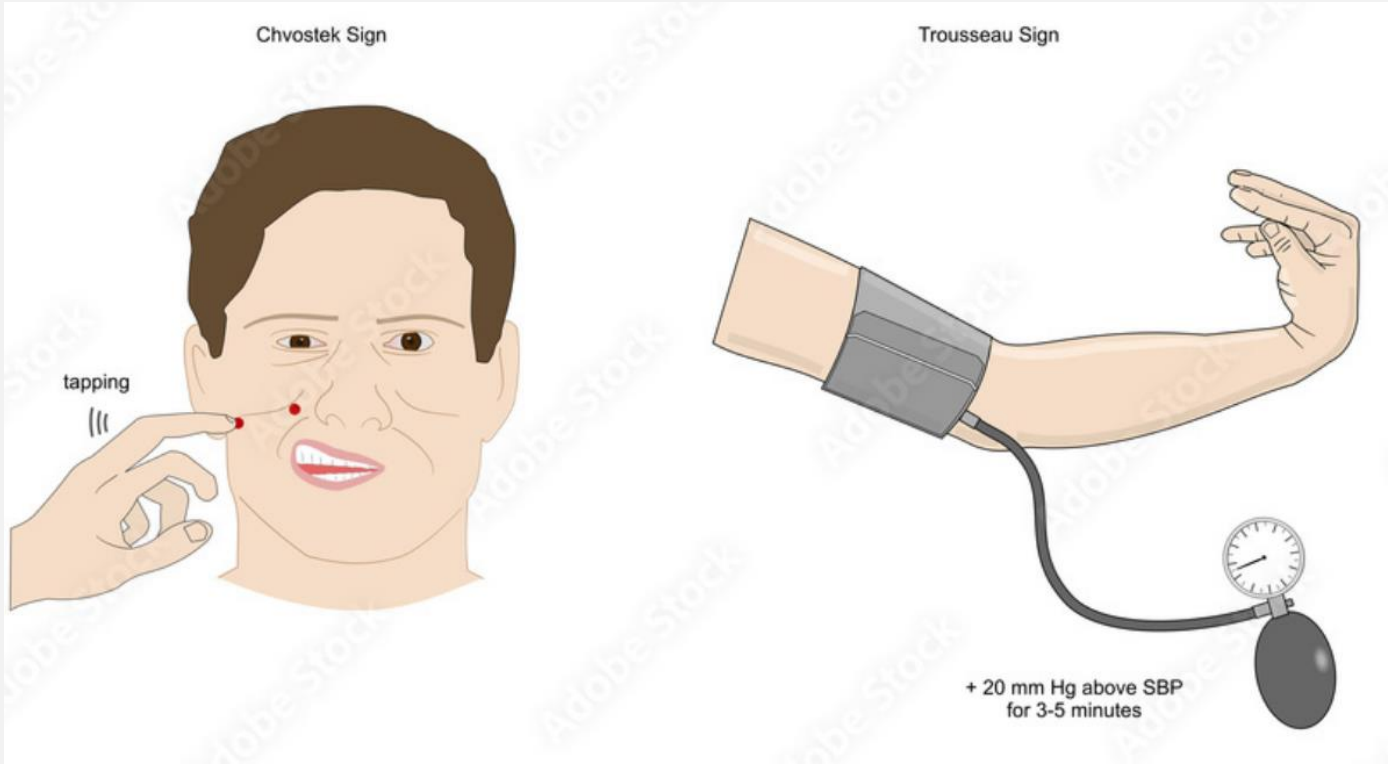


5 甲狀腺術後注意事項

- 傷口血腫：若是腫脹到影響呼吸應立即切開傷口移除血塊以及止血
- 聲帶麻痺：可考慮保守治療或聲帶注射
- 副甲狀腺素低下
- 甲狀腺素低下
- 低血鈣

5 低血鈣(Hypocalcemia)

- 正常值：**8.8** 到 **10.7mg/dl**
- 症狀：感覺遲鈍、肌肉痙攣、癲癇發作、意識混亂
- 治療：口服鈣片、補充**VitD**



5 血清鈣校正?

JAMA Network | Open™

Original Investigation | Diabetes and Endocrinology

Use of Albumin-Adjusted Calcium Measurements in Clinical Practice

Noémie Desgagnés, MD; James A. King, MSc; Gregory A. Kline, MD; Isolde Seiden-Long, PhD; Alexander A. Leung, MD, MPH

CONCLUSIONS AND RELEVANCE In this cross-sectional study drawn from a contemporaneous population, there appeared to be heavy reliance on adjustment formulas for calcium in clinical practice with little gain but considerable risk of misclassification of true calcium status, especially in the presence of hypoalbuminemia. These results suggest that unadjusted total calcium was the best and most practical alternative to ionized calcium.

Thanks for your attention