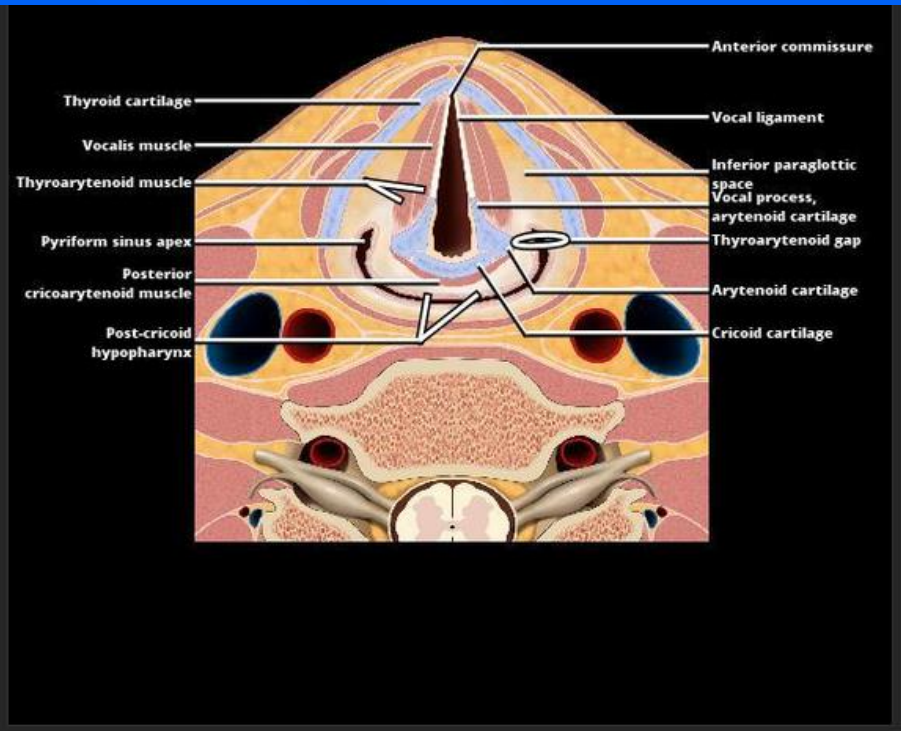
Glottis

- True vocal cords (Thyroarytenoid muscle)
- Anterior commissure
- Posterior commissure
- Vocal ligament



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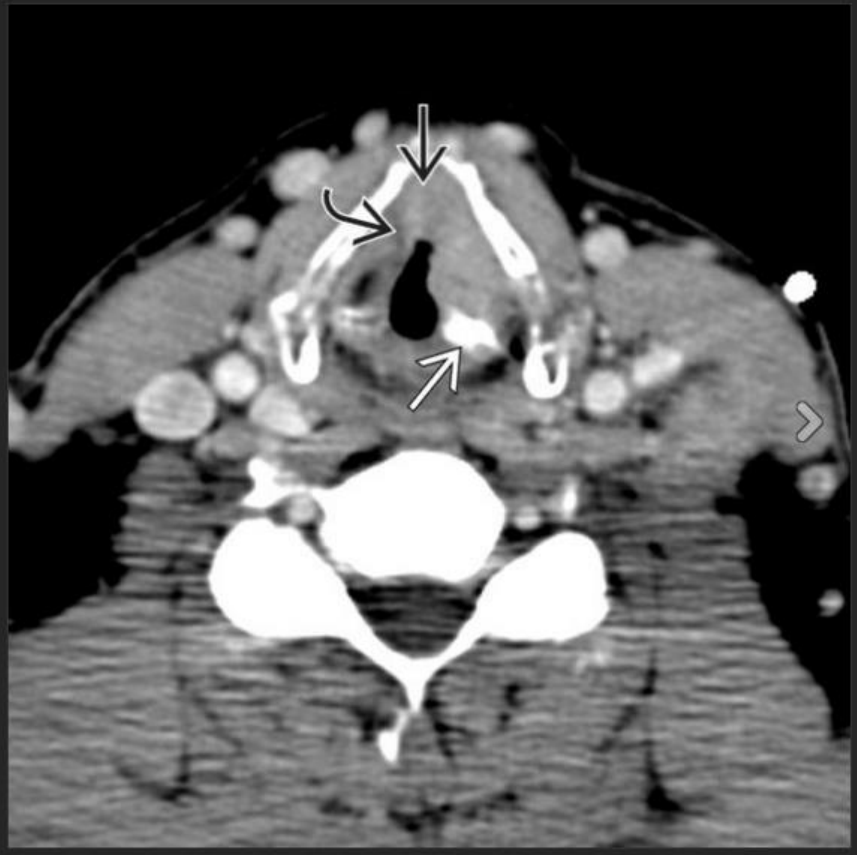
Graphic at glottic, true vocal cord level of the larynx shows the thyroarytenoid muscle, which makes up the bulk of the true vocal cord. Medial fibers of thyroarytenoid muscle are known as vocalis muscle. The pyriform sinus apex is seen at the glottic level. The thyroarytenoid gap is the location where SCCa may spread between larynx & hypopharynx.

Glottis SCC



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Axial CECT reveals SCCa involving entire left true vocal cord (TVC), anterior commissure ⇨, and anterior 1/3 of right cord ⇗. Left arytenoid → and thyroid cartilages are sclerotic but without destruction or cartilage penetration. This is T1b tumor by imaging.

Clinical Issues

- Much more common in males; usually > 50 years
- Often presents early with low T stage because of symptoms of hoarseness or change in voice
- T1: XRT or laser surgery; > 90% 5-year survival
- T4: Laryngectomy; 30-60% 5-year survival rate

Imaging

- Image is at TVC level when
  - Thyroid, arytenoid, and cricoid cartilages all on same axial image
  - Thyroarytenoid muscles on image with no fat lateral to muscles; fat is supraglottic in location
  - Apex of pyriform sinus is visualized
- Assess for cartilage erosion or invasion
  - Sclerosis nonspecific, may be benign periostitis or tumor invasion
  - Cartilage lysis, erosion, and extralaryngeal tumor more specific
  - Erosion of inner cortex of thyroid cartilage = T3 tumor
  - Extension to soft tissues of neck = T4a, moderately advanced tumor
- Metastatic nodes uncommon, typically late with large tumor

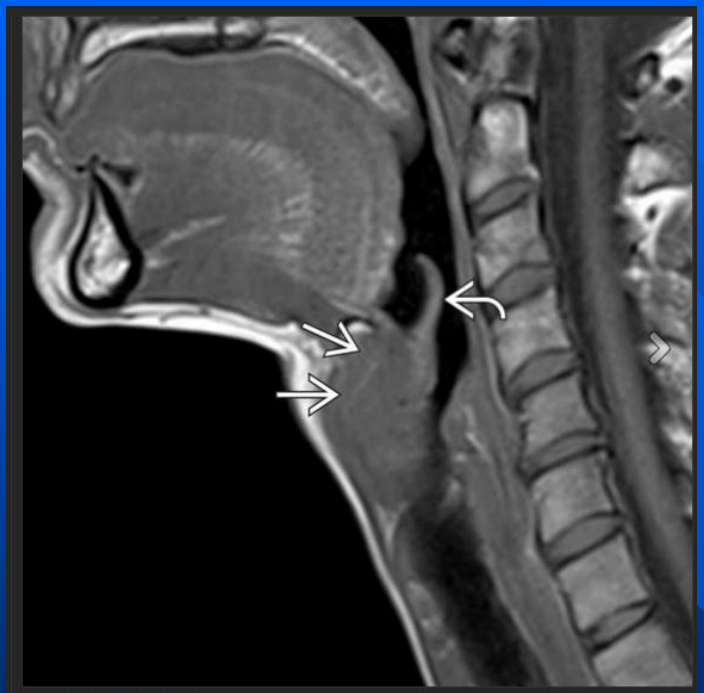
Image Interpretation Pearls

- If anterior commissure > 1 mm thick, then likely involved with tumor
- Assess images below glottis for subglottic ± cricoid cartilage involvement
  - Coronal reformations helpful for subglottic spread

Reporting Tips

- Clarify
  - Is cartilage normal?
  - Has tumor eroded inner cortex?
  - Is cartilage completely penetrated?
- Evidence of extralaryngeal tumor essential to report

Cases



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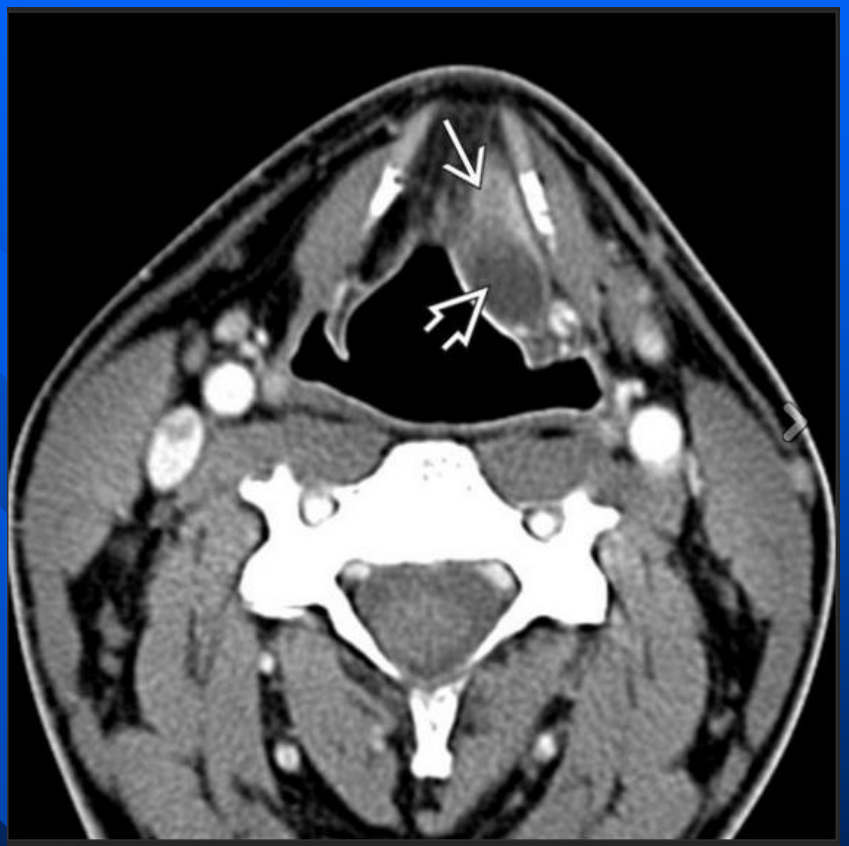
Sagittal T1WI MR shows bulky supraglottic SCCa filling preepiglottic space → and replacing fat, but sparing the suprahyoid epiglottis ↷. Sagittal plane MR or CECT reformations nicely show involvement of preepiglottic fat, which denotes at least T3 disease.



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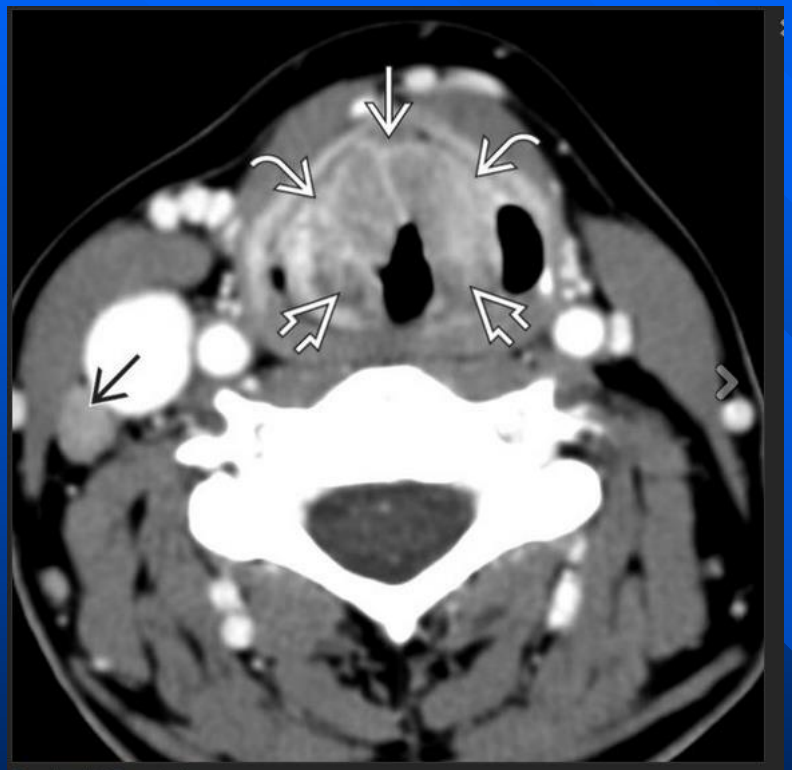
Axial CECT shows mixed density supraglottic mass distending paraglottic fat. Nonenhancing or mucoid density portion of mass ⇉ is due to internal laryngocele that developed from obstruction of laryngeal ventricle by tumor →.

Cases



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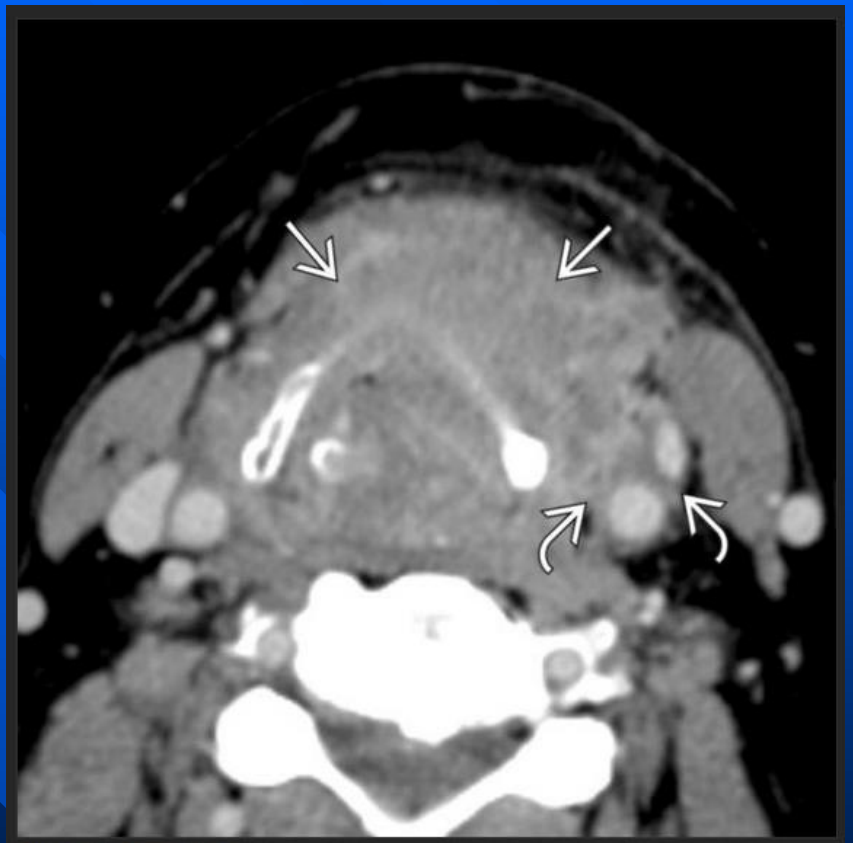
Axial CECT shows large bulky supraglottic SCCa that fills both paraglottic spaces ↗, crosses at midline →, and involves both aryepiglottic folds ⇨. Note airway compromise and metastatic level III node on right ⇨.



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Axial CECT shows large T4a supraglottic SCCa with complete airway obstruction. Tumor has extended through thyroid cartilage, and bulky extralaryngeal SCCa invades strap muscles →. Note close proximity to carotid sheath ↗.

5 signs of vocal cord palsy

- Atrophy of the vocal cord (thyroarytenoid muscle)
- Ipsilateral dilatation of piriform sinus and laryngeal ventricle
- medial orientation of the vocal cord
- rotation of the arytenoid cartilage
- medial orientation of the aryepiglottic fold

Fatty replacement in cartilage due to radioation