

Staging

- **T1:** Limited to cord(s) or commissures, with normal cord mobility
 - **T1a:** Tumor limited to 1 cord
 - **T1b:** Tumor involves both cords
- **T2:** Supra- \pm subglottic spread &/or impaired cord mobility
- **T3:** Fixed vocal cord &/or paraglottic space invasion \pm inner thyroid cartilage erosion
- **T4a:** Tumor through outer cortex of thyroid cartilage \pm extralaryngeal extension
 - Involvement of trachea, thyroid gland, esophagus, strap muscles, extrinsic tongue muscles
- **T4b:** Invades prevertebral muscles, encases carotid artery, or invades mediastinal soft tissues

Treatment

- Small T1 tumors: Laser surgery or XRT alone
 - Often not imaged
- Higher stage, larger tumor: Combination of XRT and partial or total laryngectomy
 - Extension into subglottis: Total laryngectomy
 - Speech-preserving partial laryngectomy
 - » Vertical hemilaryngectomy: No cord fixation and < 1/3 contralateral cord involvement

Glottic Staging

Staging Glottic Cancer

Determined by:

- TVC mobility
- Extra-glottic spread
- Cartilage Invasion
- Extra-laryngeal spread

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Staging

Staging Glottic Cancer

- **T1**: Limited TVC (s), normal mobility
 - T1a - 1 TVC; T1b - both TVC
- **T2**: Impaired TVC mobility, supra- or subglottic spread
- **T3**: Limited to larynx, TVC fixation, PGS, minor thyroid cartilage invasion
- **T4**: Thyroid cartilage invasion, or invasion of adjacent soft tissues in neck
- **T4b**: Invasion prevertebral, carotid, mediastinum

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Cartilage Invasion

Cartilage Invasion

Significance:

- Radiation: relative contraindication due to risk radiation necrosis
- Usually requires total laryngectomy

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Cartilage Invasion

Cartilage Invasion

- Extension to strap muscles
 - **CT:** Cartilage sclerosis - 50%
 - **MR:** T2-hyperintensity enhancement
- Other 50% likely have perichondral spread

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Innervation

Laryngeal Innervation

Vagus and Recurrent Laryngeal Nerves

- Medulla
- Jugular foramen
- Carotid sheath
- Aortic arch left; Subclavian artery right
 - Tracheoesophageal groove
- Cricothyroid membrane to intrinsic mm

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Vocal Cord Paralysis

Vocal Cord Paralysis

- 1) Atrophy thyroarytenoid muscle
- 2) Dilatation
 - ipsilat. piriform sinus,
 - vallecula
 - laryngeal ventricle
- 3) Medial deviation TVC, AE fold

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