INITIAL EVALUATION

- Confirm outside pathology
- History:
  - Chief complaint
  - History of present illness and previous treatment
- Past medical history (including but not limited to):
  - Social history (including tobacco and alcohol use)
  - Previous radiation therapy – head and neck, thoracic, breast (for previous primary or benign diagnosis)
- Physical examination:
  - Full head and neck examination
  - Fiberoptic exam
  - Videostroboscopy (optional)
  - General medical examination
- Stage T and N (AJCC)
- Imaging studies:
  - CT head and neck examination
  - Consider PET scan for stage III/IV
  - Modified barium swallow/esophagoscopy
  - Chest imaging, as clinically indicated (if smoking history of greater than 30 pack-year, consider CT chest)

CONSULTATIONS

- If no biopsy/pathology: consider examination under anesthesia (EUA), direct laryngoscopy (DL), biopsy, esophagoscopy
- Radiation oncology
- Medical oncology for patients with stage III or IV
- Dental oncology for dentulous patients except those receiving narrow field radiation
- Consider esophagoscopy or barium swallow
- IMPAC\(^1\) (for surgical management)
- Plastic surgery for patients who will require major reconstruction (pharyngeal reconstruction)
- Nutritional assessment and follow up with all patients
- Smoking cessation for active smokers only (refer to Tobacco Cessation Algorithm - Adult)

PRE-TREATMENT EVALUATION

- Patient information presented at multidisciplinary planning conference

\(^1\) Conditions for pre-operative internal medicine consult:

- Hypertension
  - Uncontrolled or newly diagnosed
  - Poorly compliant patient
  - Multi-drug regimen for control
- Cardiac disease
  - History of myocardial infarction or angina
  - History of cardiac or vascular surgery
  - Cardiac murmur or valvular heart disease
  - Congestive heart failure
- Pulmonary disease
  - 20 or more pack per year smoking history
  - Moderate to severe chronic obstructive pulmonary disease (COPD) with less than 2 flight exercise tolerance
  - Reactive airway disease
  - Previous lung resection
  - Multiple history of pneumonias
  - History of tuberculosis
- Cerebrovascular disease
  - Previous cerebrovascular accident
  - History of transient ischemic attack
  - Carotid bruit or known stenosis
- Hepatic disease
  - History of cirrhosis
  - Laboratory of hepatic dysfunction
- Diabetes
  - Type I
  - Type II
- Anticoagulation

Note: Consider Clinical Trials as treatment options for eligible patients.
Larynx Cancer

Primary tumor
most T1-2, any N

Primary tumor
most T3, N0-N1

Primary tumor
T4 disease, any N

Severe dysplasia/
carcinoma in situ

Endoscopic removal (stripping/laser)

Is nodal status positive?

Yes

No

Radiation therapy or Neck dissection(s)

Observe

Radiation therapy

Consider chemoradiation

Observe

• Radiation to primary tumor or
• Endoscopic partial laryngectomy or
• Open partial laryngectomy

• Total laryngectomy1,2 and neck dissection(s) as indicated, and ipsilateral thyroidectomy
• Consider primary tracheoesophageal puncture (TEP)

Presence of pathological risk features3?

Yes

No

Radiation therapy

Consider chemoradiation4

Observe

Residual nodal disease?

Yes

No

Neck dissection(s)

Observe

Total laryngectomy1,2 and neck dissection(s), as clinically indicated

• Radiation therapy
• Consider chemoradiation4

Note: Consider Clinical Trials as treatment options for eligible patients.

1 Primary tumors requiring total laryngectomy not amenable to partial surgery
2 Total laryngectomy to be considered for patients with significant pretreatment laryngopharyngeal dysfunction or are medically unable to tolerate organ preservation therapy

3 Pathological risk features include:
   - Primary pathology:
     - Any T1 or T2 with perineural invasion or lymphovascular invasion
     - Any T3 or T4
   - Regional pathology:
     - Multiple lymph nodes (any N2, N3)

4 Pathological risk factors for addition of chemotherapy include:
   - Positive margins (re-excision to clear margins is preferred)
   - Extracapsular extension

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Note: Consider Clinical Trials as treatment options for eligible patients.

1 Primary tumors requiring total laryngectomy not amenable to partial surgery
2 Total laryngectomy to be considered for patients with significant pretreatment laryngopharyngeal dysfunction or are medically unable to tolerate organ preservation therapy
Supraglottic node negative

**CLINICAL EVALUATION**

- Primary tumor most T1-2, N0
  - Surgery: Endoscopic resection with neck dissection(s) or Open partial laryngeal surgery with neck dissection(s)
  - Definitive radiation

- Primary tumor T4, N0
  - Surgery: Total laryngectomy and neck dissection(s), as indicated, and ipsilateral thyroidectomy
  - Concurrent chemoradiation

- Primary tumor T3, N0
  - Selected T4, N0
  - Consider primary TEP

**PRIMARY TREATMENT**

- Surgery: Endoscopic resection with neck dissection(s) or Open partial laryngeal surgery with neck dissection(s)
- Definitive radiation
- Concurrent chemoradiation

**ADJUVANT TREATMENT**

- Presence of pathological risk features?
  - Yes: Radiation or chemoradiation
  - No: Observe

- Pathologic N1?
  - Yes: Consider radiation therapy
  - No: Observe

**SURVEILLANCE**

- Pathologic N1?
  - Yes: Radiation therapy
  - No: Observe

- Residual nodal disease?
  - Yes: Neck dissection(s)
  - No: Observe

- Laryngectomy and neck dissection(s), as clinically indicated

- Radiation therapy

- Consider chemoradiation

- Surveillance (see Page 6)

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1. Low-volume base-of-tongue involvement
2. Primary tumors requiring total laryngectomy not amenable to partial surgery
3. Total laryngectomy to be considered for patients with significant pretreatment laryngopharyngeal dysfunction or are medically unable to tolerate organ preservation therapy

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*Note: Consider Clinical Trials as treatment options for eligible patients.*
Supraglottic node positive

Primary tumor
- T1-2, N+ and
- Selected T3 (not requiring total laryngectomy)

Concurrent chemoradiation

Complete response at primary site?
- Yes
  - Complete response of nodal disease?
    - Yes
      - Radiation therapy
    - No
      - N1 (initial stage)
      - Observe
  - No
      - Salvage surgery as clinically indicated

- Total laryngectomy and neck dissection(s) as indicated, and ipsilateral thyroidectomy
- Consider primary TEP

Primary tumor
- Most T3, N+ or
- Selected T4

Concurrent chemoradiation

Complete response at primary site?
- Yes
  - Complete response of nodal disease?
    - Yes
      - Radiation therapy
    - No
      - Observe
  - No
      - Ne w dissection

- Total laryngectomy and neck dissection(s) as indicated, and ipsilateral thyroidectomy
- Consider primary TEP

Primary tumor
T4, N+

Concurrent chemoradiation

Complete response at primary site?
- Yes
  - Complete response of nodal disease?
    - Yes
      - Radiation therapy
    - No
      - Observe
  - No
      - Neck dissection

- Total laryngectomy and neck dissection(s) as indicated, and ipsilateral thyroidectomy
- Consider primary TEP

Pathological risk features include:
- Primary pathology
  - Any T1 or T2 with perineural invasion or lymphovascular invasion
  - Any T3 or T4
- Regional pathology
  - Multiple lymph nodes (any N2, N3)
- Extracapsular extension

Pathological risk factors for addition of chemotherapy include:
- Positive margins (re-excision to clear margins is preferred)
- Extracapsular extension

Note: Consider Clinical Trials as treatment options for eligible patients.

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CLINICAL PRESENTATION

RECURRENT TREATMENT

- Consider systemic therapy/phase I clinical trial
- Palliative care as clinically indicated

- Consider salvage surgery, as clinically indicated

- Consider systemic therapy
- Clinical trial
- Palliative care, as clinically indicated

- Consider salvage surgery as clinically indicated
- Consider postoperative chemotherapy and radiation therapy1

- Consider chemotherapy and radiation therapy1

1 Pathological risk factors should be taken into consideration when making concurrent treatment decisions

Note: Consider Clinical Trials as treatment options for eligible patients.
## LARYNX CANCER SURVEILLANCE

<table>
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<th>Total years for surveillance</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<td>Frequency of surveillance by month</td>
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<td>9</td>
<td>12</td>
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<td>Head and neck history and physical exam</td>
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<td>x</td>
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<td>Baseline CT</td>
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<td>x</td>
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<td>x</td>
<td>x</td>
<td>x</td>
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SUGGESTED READINGS


This practice algorithm has been specifically developed for MD Anderson using a multidisciplinary approach and taking into consideration circumstances particular to MD Anderson, including the following: MD Anderson’s specific patient population; MD Anderson’s services and structure; and MD Anderson’s clinical information. Moreover, this algorithm is not intended to replace the independent medical or professional judgment of physicians or other health care providers. This algorithm should not be used to treat pregnant women.

DEVELOPMENT CREDITS

This practice algorithm is based on majority expert opinion of the Head and Neck Center Faculty at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

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