Larynx Cancer

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.

Note: If available, clinical trials should be considered as preferred treatment options for eligible patients.

INITIAL EVALUATION

- Confirm outside pathology
- History:
  - Chief complaint
  - History of present illness and previous treatment
- Past Medical History:
  - Medical illnesses
  - Surgeries
  - Medication allergies
  - Family history
  - Social history (including tobacco and alcohol use)
  - Medications
- Review of systems
- Previous Radiation Therapy – Head and Neck, Thoracic, Breast (for previous primary or benign diagnosis)

Physical Examination:
- Full head and neck exam
- Fiberoptic exam
- Videostroboscopy (optional)

General medical exam
- Stage T and N (AJCC)

Imaging studies:
- CT scan H&N
- Consider PET scan for Stage III/IV

CONSULTATIONS

- If no biopsy/pathology: consider EUA, 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.
- Speech pathology for all patients and videostroboscopy, if indicated
- Consider esophagoscopy or barium swallow
- IMPAC® (for surgical management)
- Plastic surgery for patients who will require major reconstruction (pharyngeal reconstruction)
- Nutritional assessment and follow all patients
- Smoking cessation for active smokers only

PRE-TREATMENT EVALUATION

- Glottic
- Supraglottic
- Node Negative

- Supraglottic
- Node Positive
  (based on clinical and/or radiographic imaging)

Conditions for pre-op internal medicine consult:
- Hypertension
  - Uncontrolled or newly diagnosed
  - Poorly compliant patient
- Cardiac Disease
  - History of MI or angina
  - History of cardiac or vascular surgery
  - Cardiac murmur or valvular heart disease
  - CHF

- Pulmonary Disease
  - 20 or more pack per year smoking history
  - Moderate to severe COPD with less than 2 flight exercise tolerance
  - Reactive airway disease
  - Previous lung resection
  - Multiple history of pneumonias
  - History of TB

- Cerebrovascular Disease
  - Previous CVA
  - History of TIA
  - Carotid bruit or known stenosis

- Hepatic Disease
  - History of cirrhosis
  - Laboratory of hepatic dysfunction

- Diabetes
  - Type I
  - Type II

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Primary Tumor:
- Most T1-2, any N
- Most T3, N0-N1
- T4 disease, Any N

Severe dysplasia / carcinoma in situ

Endoscopic removal (stripping/laser)

Glottic

Primary Tumor:

Concurrent chemoradiation

Complete response at primary site?

Yes

Residual nodal disease?

Yes

Total laryngectomy and neck dissection(s), as clinically indicated

No

Is nodal status positive?

Yes

No

Observe

Adjuvant Treatment

- Radiation therapy or
- Neck dissection(s)

Yes

No

Observe

Surveillance

- (See page 6)
- Medical oncology (optional) for chemoprevention trials

Primary Tumor:

- T4 disease, Any N

Total laryngectomy/neck dissection(s), as indicated, and ipsilateral thyroidectomy.

Consider primary Tracheosophageal Puncture (TEP)

Radiation therapy

Consider chemoradiation

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)
  - Positive margins (re-excision to clear margins is preferred)
  - Extracapsular extension

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**Supraglottic Node Negative**

**Primary Tumor:**
Most T1-2, N0

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

Radiation or Chemoradiation

**Primary Tumor:**
T3, N0
- Selected T4¹, N0

Total laryngectomy²³ and neck dissection(s), as indicated, and ipsilateral thyroidectomy,
- Consider primary Tracheosophageal Puncture (TEP)

**Primary Tumor:**
T4, N0

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

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.

**Node Positive**
See page 4

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**Supraglottic Node Positive**

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**Supraglottic Node Positive**

**Primary Tumor:**
- T1-2, N+ and
- Selected T3 (Not requiring Total Laryngectomy)

**Treatment:**
- Concurrent chemoradiation
- Complete response at primary site?
  - Yes → Complete response of nodal disease?
    - Yes → Observe
    - No → N1 (initial stage)
  - No → Salvage surgery as clinically indicated

**Primary Tumor:**
- Most T3, N+1 or
- Selected T4

**Treatment:**
- Concurrent chemoradiation
- Complete response at primary site?
  - Yes → Complete response of nodal disease?
    - Yes → Observe
    - No → Neck dissection
  - No → Salvage surgery as clinically indicated

**Primary Tumor:**
- T4, N+

**Treatment:**
- Total laryngectomy and neck dissection(s), as indicated, and ipsilateral thyroidectomy.
- Consider primary Tracheosophageal Puncture (TEP)
- Complete response of nodal disease?
  - Yes → Radiation therapy
  - No → Radiation therapy

**Pathological Risk Features**
- Presence of 
  - 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)
        - Positive margins (re-excision to clear margins is preferred)
        - Extracapsular extension

---

1 Low-volume base-of-tongue involvement
2 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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**CLINICAL PRESENTATION**

Recurrent disease → Restage
- CT head and neck
- CT chest or PET to evaluate for distant metastatic disease

→ Presence of distant metastatic disease?

Yes → Consider Systemic Therapy/Phase I Clinical Trial
- Palliative Care as clinically indicated

→ Is recurrence resectable?

Yes → Consider Salvage Surgery as clinically indicated

→ Primary treatment chemoradiation?

Yes → Consider Systemic Therapy
- Palliative Care as clinically indicated/clinical trial

No → Consider salvage surgery as clinically indicated

→ Is recurrence resectable?

Yes → Consider Chemotherapy and Radiation Therapy

No → Consider Chemotherapy and Radiation Therapy

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1 Pathological Risk Factors should be taken into consideration when making concurrent treatment decisions

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LARYNX CANCER SURVEILLANCE

<table>
<thead>
<tr>
<th>Total Years for Surveillance</th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 5</th>
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<td>Frequency of Surveillance by month</td>
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<td>6</td>
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<td>Head and Neck History and Physical Exam</td>
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<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
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<td>Thyroid function</td>
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<td>x</td>
<td></td>
<td>x</td>
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</tbody>
</table>
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SUGGESTED READINGS


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Development Credits

This practice consensus 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 medical, radiation and surgical oncologists:

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