### 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
  - Consider PET scan for stage III/IV
  - Modified barium swallow/esophagoscopy
  - Chest imaging (PET-CT preferred, but CT chest with contrast acceptable)
- Lifestyle risk assessment

### 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
- Speech pathology for all patients and videostroboscopy, if indicated
- Consider esophagoscopy or barium swallow
- Conditions for pre-operative Internal Medicine
  - Plastic surgery for patients who will require major reconstruction (pharyngeal reconstruction)
  - Nutritional assessment
  - Smoking cessation for active smokers only

### PRE-TREATMENT EVALUATION

- Glottic
  - Node negative
- Supraglottic
  - Node positive

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

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1. See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice.
2. Conditions for pre-operative Internal Medicine Perioperative Assessment Center (IMPAC) consult:
   - Hypertension
     - Uncontrolled or newly diagnosed
     - Poorly compliant patient
   - Multi-drug regimen for control
   - Hepatic disease
     - History of cirrhosis
     - Laboratory of hepatic dysfunction
   - Anticoagulation
   - Pulmonary disease
     - 20 or more pack-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 pneumonia
     - History of tuberculosis
   - Cerebrovascular disease
     - Previous cerebrovascular accident
   - History of transient ischemic attack
   - Carotid bruit or known stenosis
   - Diabetes
     - Type I
     - Type II
   - Cardiac disease
     - History of myocardial infarction or angina
     - History of cardiac or vascular surgery
     - Cardiac murmur or valvular heart disease
     - Congestive heart failure

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Larynx Cancer

CLINICAL EVALUATION

Primary tumor most T1-2, any N

Severe dysplasia/carcinoma in situ

Primary tumor T4 disease, any N

Glottic

Primary tumor most T3, N0-N1

Radiation therapy as clinically indicated for patients who may have poor functional surgical outcome

Endoscopic removal (stripping/laser) or

Endoscopic partial laryngectomy or

Open partial laryngectomy

Endoscopic partial laryngectomy or

Open partial laryngectomy

Consider induction chemotherapy

Total laryngectomy\(^1,2\) and neck dissection(s) as indicated, and ipsilateral thyroidectomy

Consider primary tracheoesophageal puncture (TEP)

\(^1\) 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

Consider induction chemotherapy

Concurrent chemoradiation

Consider primary TEP

Complete response at primary site?

Residual nodal disease?

Presence of pathological risk features?\(^3\)

Is nodal status positive?

\(^3\) 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

ADJUVANT TREATMENT

Total laryngectomy\(^1,2\) and neck dissection(s), as clinically indicated

Radiation therapy

Consider chemoradiation\(^4\)

Surveillance (see Page 6)

Medical oncology (optional) for chemoprevention trials

SURVEILLANCE

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

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Larynx Cancer

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

Supraglottic node negative

Primary tumor
- T3, N0
- Selected T4, N0

Primary tumor
- T4, N0

Primary tumor most T1-2, N0

CLINICAL EVALUATION

PRIMARY TREATMENT

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

Definitive radiation

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

Concurrent chemoradiation

Complete response at primary site?

ADJUVANT TREATMENT

Yes → Radiation or chemoradiation

No → Consider induction chemotherapy

Pathologic N1?

Yes → Consider radiation therapy

No → Observe

Yes → Radiation therapy

No → Observe

Residual nodal disease?

Yes → Neck dissection(s)

No → Observe

Laryngectomy and neck dissection(s), as clinically indicated

SURVEILLANCE

Yes → Radiation therapy

No → Consider chemoradiation

Surveillance (see Page 6)

Medical oncology (optional) for chemoprevention trials

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)

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

Low-volume base-of-tongue involvement

1 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)

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

3 Low-volume base-of-tongue involvement

4 Primary tumors requiring total laryngectomy not amenable to partial surgery

5 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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Department of Clinical Effectiveness V7
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Supraglottic node positive

TREATMENT

Concurrent chemoradiation

Complete response at primary site?

Yes

Complete response of nodal disease?

Yes

Salvage surgery as clinically indicated

No

Neck dissection

Observation

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)

Pathological risk factors for addition of chemotherapy include:

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

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

Primary tumor

T4, N+

Radiation or chemoradiation

Survival (see Page 6)

Complete response at primary site?

Yes

Yes

Radiation therapy

Observe

No

Neck dissection

Salvage surgery as clinically indicated

No

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)

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

Primary tumor

Most T3, N+2 or

Selected T42

Concurrent chemoradiation

Complete response at primary site?

Yes

Yes

Radiation therapy

Observe

No

Neck dissection

Observation

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)

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

Primary tumor

Selected T3 (not requiring total laryngectomy)

Concurrent chemoradiation1

Complete response at primary site?

Yes

Complete response of nodal disease?

Yes

Salvage surgery as clinically indicated

No

Neck dissection

Observation

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)

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

Primary tumor

T1-2, N+ and

Selected T3

Concurrent chemoradiation1

Complete response at primary site?

Yes

Complete response of nodal disease?

Yes

Salvage surgery as clinically indicated

No

Neck dissection

Observation

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)

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

Primary tumor

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

Recurrence of disease
- 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
- No

Primary treatment chemoradiation?
- Yes
  - Consider salvage surgery, as clinically indicated
- No
  - Consider chemotherapy and radiation therapy

Is recurrence resectable?
- Yes
  - Consider systemic therapy
  - Clinical trial
  - Palliative care, as clinically indicated
- No
  - Consider postoperative chemotherapy and radiation therapy

Surveillance (see Page 6)

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

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

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# 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>Head and neck history and physical exam</td>
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<td>x</td>
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<td>x</td>
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<tr>
<td>Chest x-ray (CT chest, if smoker)</td>
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<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Thyroid function</td>
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<td>x</td>
<td>x</td>
<td>x</td>
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</tr>
</tbody>
</table>

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SUGGESTED READINGS


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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DEVELOPMENT CREDITS

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