In the name of God

The role of surgery after recurrence of laryngeal tumor

Afrooz Eshaghian MD

Head and neck fellowship, otolaryngologist

Isfahan University of medical sciences, Kashani hospital

Recurrence or residual laryngeal SCC

- Prevalence: up to 30%
- Almost half : T3 or T4 (rT3/4) tumors
- outcomes of salvage treatment for recurrent head and neck cancer in all sites: laryngeal cancer has the highest salvage rate (approaching 50% overall), including the best survival and functional outcomes.
- Stage, age, disease site (nonglottic), perineural invasion, lymphovascular invasion, more comorbidities and margins(positive or close) are associated with inferior disease specific survival.

Recurrence or residual laryngeal SCC

- RT or CRT failures → salvaged with surgery
- surgical failures → may be salvaged with either further surgery or, in some cases, RT or CRT

Recurrence or residual laryngeal SCC

- For Nonsurgical organ-preservation therapies , surgery plays an important role in the :
  - salvage of residual or recurrent disease in the larynx
  - for residual or recurrent disease in the neck
  - for chondroradionecrosis of the larynx
  - for functional problems such as intractable aspiration, laryngeal stenosis, or pharyngoesophageal stenosis (adverse effects of RT on the soft tissue of the larynx, particularly decreased tissue vascularity and fibrosis.)

Recurrence or residual laryngeal SCC

- Signs of local recurrence: increasing edema, thickening of the true vocal cords, impairment of true vocal cord mobility, vocal cord fixation, leukoplakia, a mass lesion, and/or ulceration
- DDx: radiation-induced edema, perichondritis, or chondronecrosis

accuracy of modalities for the diagnosis of recurrent cancer

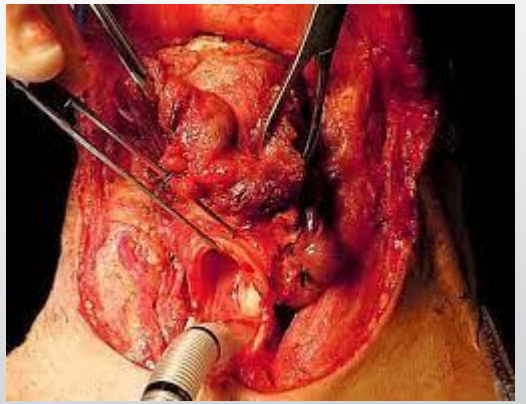
- PET:79%
- CT : 61%
- clinical examination: 43%
- PET-CT could reduce the need for biopsy in more than 50% of patients without adversely affecting subsequent surgical salvage.

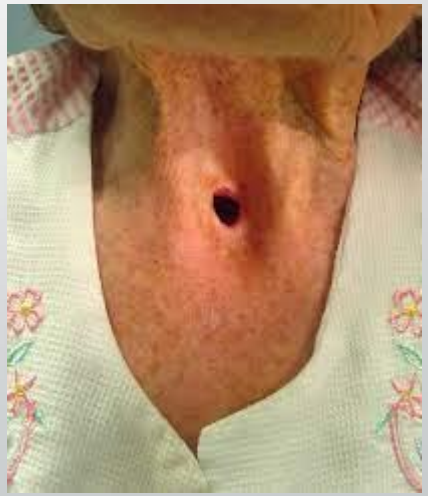
Recurrence or residual laryngeal SCC

- **Biopsy = gold standard for the diagnosis of recurrent disease**
- Recurrent cancer may be submucosal, and deep biopsies may be required, because superficial biopsies of the epithelium may fail to diagnose recurrent tumor.
- deep biopsy: may cause infection, perichondritis, or chondroradionecrosis

Recurrence or residual laryngeal SCC

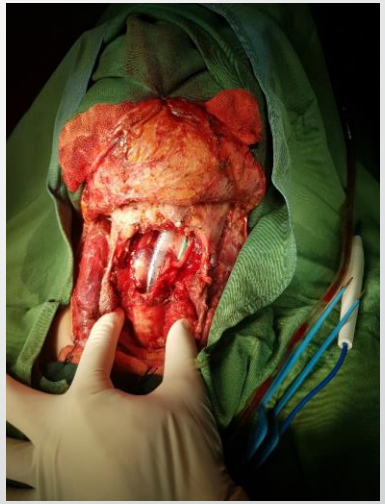
- standard treatment for recurrent laryngeal SCC is total laryngectomy



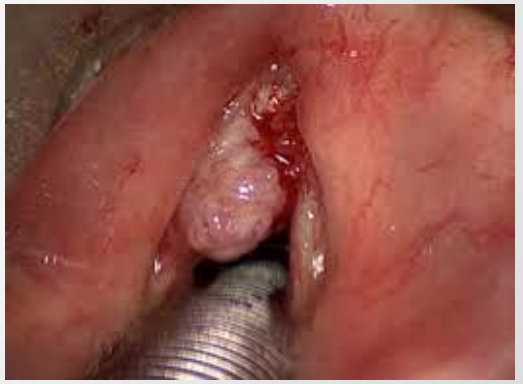


partial laryngectomy (supracricoid laryngectomy, vertical partial laryngectomy)

- salvage of radiorecurrent T1/T2 laryngeal cancer with partial laryngectomy had equivalent survival when compared to salvage TL
- Not candidate for partial laryngectomy :
  - subglottic extension greater than 5 mm
  - cartilage invasion
  - contralateral true vocal cord involvement
  - arytenoid involvement (except the vocal process)
  - true vocal cord fixation
  - recurrence that did not correlate with the original primary lesion



Transoral Laser Microsurgery

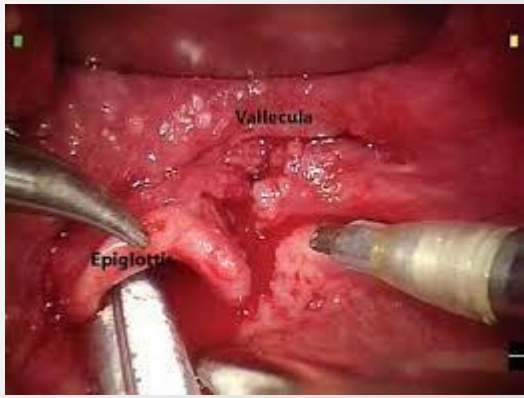


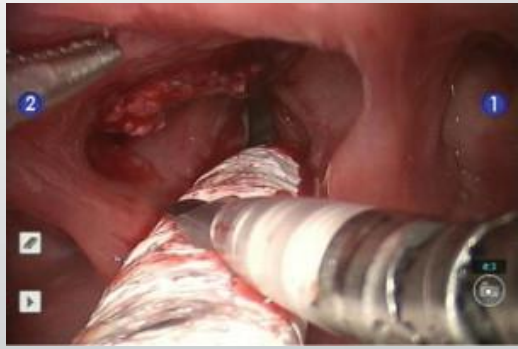
- Condidate forTLM:
  - early stage recurrences
  - in the hands of experienced surgeons, for selected advanced stage recurrences following nonsurgical treatment.

✓ The functional outcomes are also acceptable with minimal morbidity.

Trans-oral robotic surgery-assisted total laryngectomy

- The oncologic and functional outcomes were satisfactory
- Wang study: 7 patients, time of 111 ± 66 min, no severe PCF, tracheostoma stenosis (57%), 3 patients received adjuvant chemotherapy/radiotherapy. After follow-up of 36.1 ± 15.8 months, two patients had neck recurrence, and one patient died 19 months after surgery. The overall survival rate was 85.7% (6/7), and all patients had good swallowing function without tube feeding





postoperative complications for patients previously treated with RT or CRT

- overall complication rate was 67.5%
- fistula, wound complications, dysphagia, bleeding, pharyngeal stenosis, and stomal stenosis

pharyngocutaneous fistula

- the most common compication
- about 30%
- salvage TL within 1 year of RT/CRT is a risk factor for the development of a PCF
- Fistulas were more common in patients treated primarily with chemoradiation than in patients treated with radiation alone
- use of regional flaps (pectoralis major) or free tissue transfer for reconstruction following total laryngectomy or laryngopharyngectomy for the treatment of RT/CRT failures decreases the incidence of PCF and the duration of any PCF & reduces the rate of stricture formation and dependence on feeding tubes

postoperative complications for patients previously treated with RT or CRT

- wound infection, delayed healing, and fistula formation cannot always be attributed to the RT or CRT alone and may be the result of malnutrition, metabolic abnormalities, or other comorbidities.
- Therefore, when surgery is indicated for this group of patients, their nutrition, thyroid status, and general health should be optimized beforehand.

the role of neck dissection for clinically No disease when undertaking salvage TL

- neck dissection may be associated with increased morbidity, including a higher incidence of pharyngocutaneous fistula.
- occult nodal metastases have been detected in up to 28% of neck dissections for patients staged as cNo
- The incidence of metastases is increased in patients with rT4 tumors, supragloic tumors, and transglottic tumors.
- Elective neck dissection improved survival in patients with advanced local disease.
- Elective neck dissection should be performed in all patients undergoing salvage TL for recurrence, except those patients with an initial glottic SCC staged as T1/T2, with a recurrence staged as rT1/T2

Stomal Recurrence

- a grave sign
- may be secondary to paratracheal node involvement, invasion of the thyroid gland, intraoperative tumor spill with implantation of cells in the stoma, or incomplete excision of tracheal invasion by subglottic spread.

Stomal Recurrence

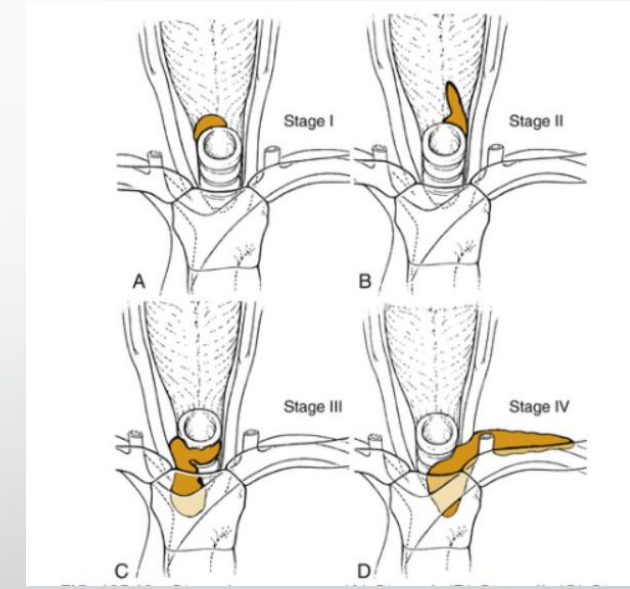
- The treatment of stomal recurrence is morbid and often unsuccessful.
- The risk of stomal recurrence is great in:
  - primary subglottic SCC
  - glottic SCC with greater than 1 cm of subglotic extension
  - T_4 glottic tumors
- So → ipsilateral thyroid lobe is removed together with the larynx, and bilateral paratracheal node dissections are performed. Adjuvant RT is also given, and the treatment field should include the upper mediastinum.

Possible morbidity and mortality associated with the surgical treatment of stomal recurrence

- injury to the great vessels
- Mediastinitis
- Hypocalcemia
- Fistula formation

Stomal Recurrence

- Aggressive treatment of stage III and IV stomal recurrence is usually not indicated because the prognosis for these patients is poor.
- May be as positive mediastinal nodal involvement



National Comprehensive Cancer Network®

NCCN Guidelines Version 3.2021
Very Advanced Head and Neck Cancer

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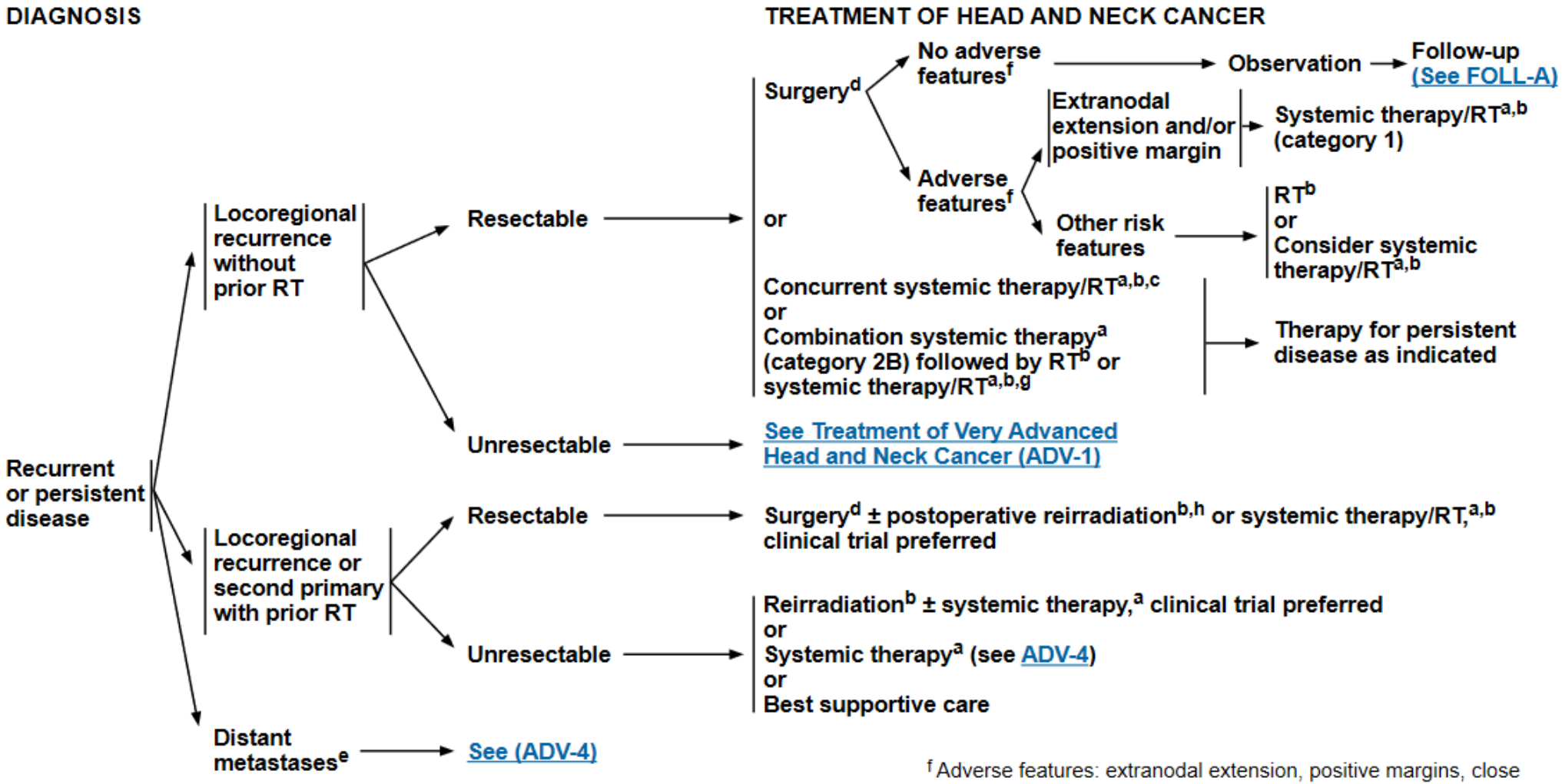
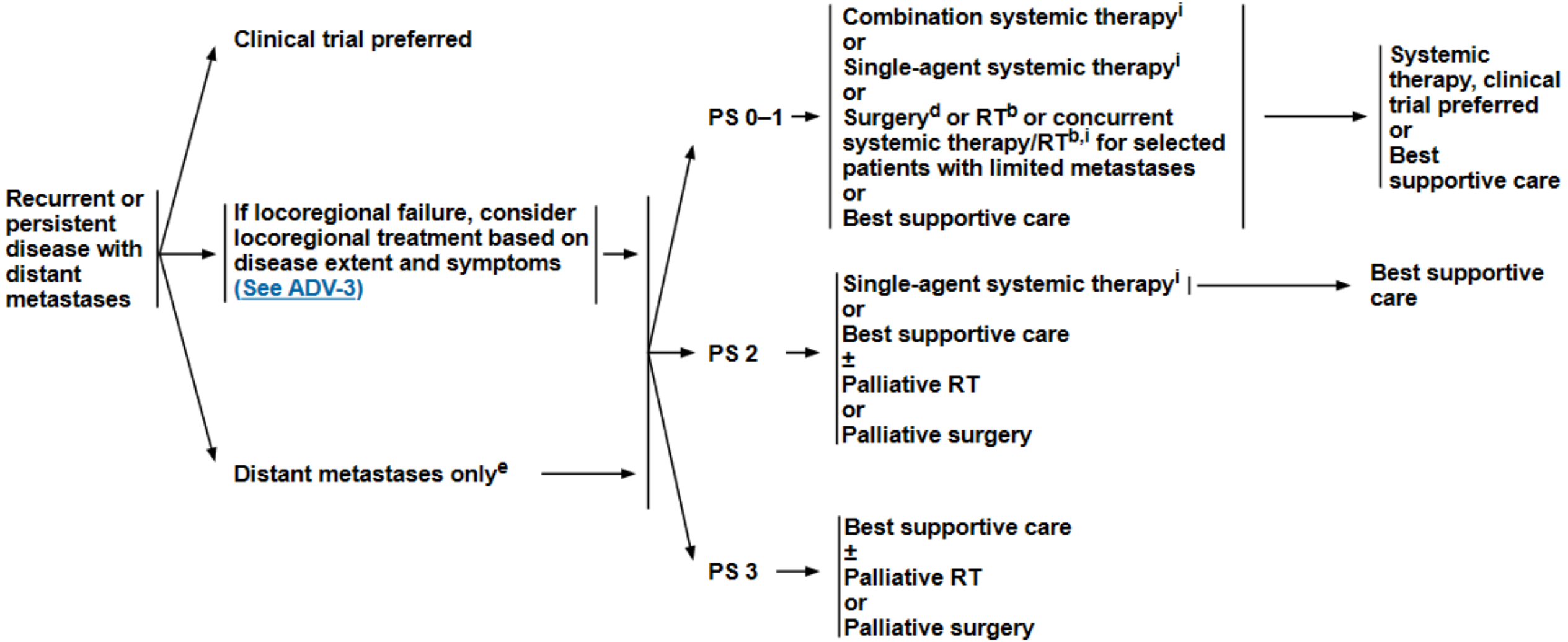


[a] See Principles of Systemic Therapy for Non-Nasopharyngeal Cancers (SYST-A).
[b] See Principles of Radiation Therapy (ADV-A).
[c] When using concurrent systemic therapy/RT, the preferred agent is cisplatin (category 1). See Principles of Systemic Therapy for Non-Nasopharyngeal Cancers (SYST-A).
[d] See Principles of Surgery (SURG-A).
[e] Consider palliative RT as clinically indicated (eg, bone metastases). (See RAD-A).
[f] Adverse features: extranodal extension, positive margins, close margins, pT3 or pT4 primary, pN2 or pN3 nodal disease, perineural invasion, vascular invasion, lymphatic invasion (See Discussion).
[g] Combination systemic therapy followed by RT or systemic therapy/RT may be considered for cytoreduction or symptom control followed by local therapy as indicated.
[h] Reirradiation should be limited to a highly select subset of patients (Janot F, et al. J Clin Oncol 2008;26:5518-5523).



PS = Performance Status (Eastern Cooperative Oncology Group ,ECOG)

Grade	ECOG
0	Fully active, able to carry on all predisease performance without restriction
1	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature—for example, light house work, office work
2	Ambulatory and capable of all self-care but unable to carry out any work activities. Up and about more than 50% of waking hours
3	Capable of only limited self-care, confined to bed or chair more than 50% of waking hours
4	Completely disabled. Cannot carry on any self-care. Totally confined to bed or chair

Question :
afroozeshaghian@gmail.com