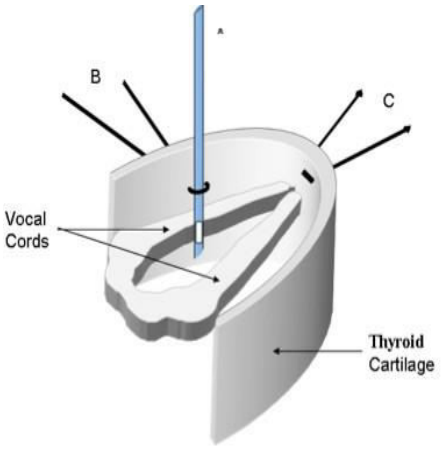
The Yale Larynx Laboratory

A Clinical Review

Early Tongue Cancer

Clarence T. Sasaki MD, David Folk MD



Laboratory Note

The purpose of this newsletter is to update our readers with the evidence-based management of certain Head & Neck disease presentations. In this issue we shall focus on elective neck dissection in cancers of the oral tongue.

The Yale Larynx Laboratory was founded by John A. Kirchner in 1967. Since 1975 this laboratory has been in continuous operation under the direction of Clarence T. Sasaki, the Charles W. Ohse Professor and has been funded by the National Institutes of Health and by endowments of grateful patients.

Case Presentation

The patient was a 77 year old woman who presented with a nonhealing lesion on her left lateral tongue gradually enlarging over several months. There was no associated pain, or referred otalgia. She denied weight loss. The patient did not smoke or drink. A biopsy of the lesion demonstrated squamous cell carcinoma.

Clinical Findings

Physical examination revealed a 3cm fungating tumor of the left lateral tongue border with approximately 1.5cm of infiltration into the underlying intrinsic tongue muscles (Fig 1). Tongue mobility was normal. Speech and swallow were unimpaired. There were no palpable neck nodes as correlated with negative CT scan findings. Given the physical findings, the tumor was clinically staged cT2N0.

Course

The patient underwent a hemostatic Omniguide laser resection of the tumor (Fig. 2,3). Intraoperative "first cut" frozen section margins

Fig. 1

were clear of invasive carcinoma or high-grade dysplasia. A split thickness skin graft was used for resurfacing and a neck dissection was concurrently performed based on the 1.5cm thickness of tongue tumor. The patient was discharged home on postoperative day five after her tongue bolster was taken down with 100% graft take. She was able to tolerate an oral intake without difficulty. Her speech was undisturbed.

Final pathology revealed a 3.4cm invasive squamous cell carcinoma with negative margins. There was greater than 10mm of tumor infiltration into the superficial muscle of the tongue as well as perineural invasion.

Fig. 2

Flexible CO_2 laser fiber.

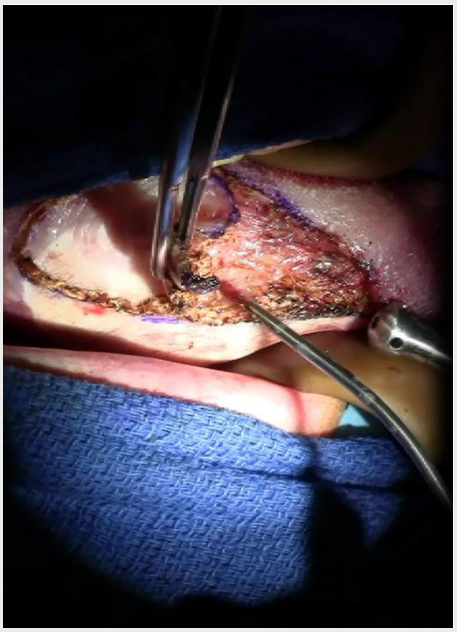


Fig. 3

Hemostatic laser resection.

Metastatic squamous cell carcinoma was found in one of fifty-six lymph nodes, without extracapsular extension. The tumor was P16 negative. On the basis of perineural invasion the patient received 60Gy adjuvant radiation therapy to encompass the primary site and ipsilateral neck, and 54Gy to the contralateral neck. She has continued to do well with no evidence of disease one year later.

Discussion

Oral tongue carcinoma is unique in that its ready accessibility facilitates both early diagnosis and treatment. In fact, at the time of diagnosis the majority of oral tongue lesions are 4cm or smaller. The effective treatment of such lesions favors transoral wide local excision with negative margins. Nevertheless, in patients with T1 or T2 tumors and clinically N0 necks, the incidence of pathologically positive neck nodes remains as high as 20-30%.

Elective neck dissection in early oral cavity tumors has been a controversial topic. It is now accepted that tumor stage alone is not entirely predictive of occult nodal metastases. Rather, tumor depth is a better indicator of possible nodal disease and, therefore, long term survival.[1] For stage I or II squamous cell carcinoma of the oral tongue, it has been shown that a tumor depth $\geq$ 4mm has a strong predictive value for occult metastasis. Others also suggest that tumor depth exceeding 5mm results in 64.7% metastasis in contrast to 5.9% when less than 5mm.[2-3] In addition, moderately differentiated squamous cell carcinoma portends a poorer prognosis compared to well differentiated carcinoma.

The method of resection of the primary tumor also deserves careful consideration. It is essential to achieve negative margins intraoperatively, preferably with the least number of incisional attempts, since oncologic outcomes are worse in cases of microscopic tumor cut-through.[5]

While both cold knife as well as CO_2 laser fiber can achieve negative margins, it has been shown that use of a flexible CO2 laser fiber is hemostatic, leading to decreased blood loss and improved intraoperative visualization of tumor margins.[6] This, in turn, decreases microscopic tumor cut through and tends to improve outcome.

Again, a close working relationship and formal collaboration with colleagues in Radiation and Medical Oncology as well as Department of Dentistry and Nutrition ensures a comprehensive and coherent plan of care.

References

1. Spiro RH, Huvos AG, Wong GY, Spiro JD, Gnecco CA, Strong EW. Predictive value of tumor thickness in squamous carcinoma conEined to the tongue and Eloor of the mouth. Am. J. Surg 1986;152:345---50.

2. Fukano H, Matsuura H, Hasegawa Y, Nakamura S. Depth of invasion as a predictive factor for cervical lymph node metastasis in tongue carcinoma. Head Neck 1997*;* 19*:* 205–210.

3. Asakage, T, Yokose T, Mukai K, *et al.* Tumor thickness predicts cervical metastasis in patients with Stage I/II carcinoma of the tongue. Cancer 1998*;* 82*:* 1443–1448.

4. Kurokawa H, Yamashita Y, Takeda S, Zhang M, Fukuyama H, Takahashi T. Risk factors for late cervical lymph node metastases in patients with stage I or II carcinoma of the tongue. Head & neck 2002;24:731---6.

5. Scholl P, Byars RM, Batsakis JG, Wolf P, Santini H: Microscopic cut---through of cancer in the surgical treatment of SCC of the tongue, Am. J. Surg 1986; 152: 354---60.

6. Chee M, Sasaki C. Carbon dioxide laser Eiber for the excision of oral leukoplakia. The Annals of otol, rhinol, and laryngol 2013;122:547---9.

The Yale Larynx Laboratory

Clarence T. Sasaki, M.D., The Charles W. Ohse Professor

Michael Wadie, M.D.

Boris Paskhover, M.D.

Kenneth Bagwell, M.D.

David Folk, M.D.

Office Location:

Yale Physician's Building

800 Howard Avenue, 4th Floor

New Haven, CT 06519

For new patient appointments:

Phone: 203-785-2593

Fax: 203-785-3970

For all follow-up appointments:

Phone: 203-785-2592

Editor-in-chief

David Folk, M.D.