



Brazilian Journal of  
**OTORHINOLARYNGOLOGY**

www.bjorl.org



## EDITORIAL

# Changing paradigms in treatment of larynx cancer<sup>☆</sup>

## Mudando os paradigmas no tratamento do câncer de laringe

The usual concept of conservative treatment of larynx cancer is misinterpreted by clinicians. This concept usually refers to a less aggressive treatment. But the usual consideration of less aggressive treatment modalities are referred to radiation treatment for early larynx cancer and chemoradiation for advanced larynx cancer. However, both treatments are not less aggressive treatments, compared to surgery, as patients are submitted to high doses of radiation therapy, in a daily bases, and when radiosensitizing chemotherapy is added to radiation therapy the toxicity more than doubles.<sup>1</sup> These toxic effects related to mucositis, xerostomia, loss of taste, neutropenia, kidney impairment, hearing loss and liver toxicity are troublesome. For T4 patients submitted to induction chemotherapy, 56 per cent of them required salvage total laryngectomy.<sup>2</sup> Of those with complete response and without disease, 36 per cent had a non-functioning larynx despite preservation of the organ.<sup>2</sup> The rate of local relapse was significantly higher in the induction chemotherapy group.<sup>2</sup> Disease free survival was shorter in the chemotherapy group, despite not being statistically significant, at two years.<sup>2</sup> Looking at the sample of VA study, 75 per cent of patients were T1 or T2 (10%) to T3 (65%), and most were supraglottic cancers (62%) with only 25% of T4 lesions,<sup>2</sup> then, not all cases would require total laryngectomy and could be treated with function sparing surgical treatment. Thus, if the sample were comprised with T4 lesions perhaps the results would be disappointing. Most of the recurrences in early larynx cancer after radiation therapy are more difficult to recognize in an early setting of recurrence, and most will require a salvage total laryngectomy.<sup>3</sup> Salvage total laryngectomy after chemoradiation has a higher rate of complications, such as pharyngocutaneous fistulas,<sup>4</sup> and usually requires a flap for protection of the great vessels of neck, invariably increasing the length of surgery. For T1 and T2 lesions disease free survival is higher after surgery (100% and 79%, respectively) than radiation therapy (71% and 60%, respectively) in a recent systematic review of Cochrane library.<sup>5</sup> Meta-analysis of treatment options for T1a lesions also observed a higher rate of larynx preservation after transoral laser surgery than after radiation therapy.<sup>3</sup> For early larynx cancer cost of transoral laser surgery is half of radiation therapy,<sup>6</sup> with comparable vocal and quality of life

outcomes to radiation therapy in a systematic review.<sup>7</sup> The recent published recommendations of the American Society of Clinical Oncology are for function -sparing treatment for T1 and T2. For those T3 lesions who require total laryngectomy, chemoradiation could be employed, and for T4 lesions the recommendation is for total laryngectomy.<sup>8</sup> According to studies of tumor volumetry, the higher the tumor's volume, the smaller the tumor's response. This response relapse could be significant for tumor volume higher than 23 cm<sup>3</sup>.<sup>9</sup> Those function -sparing surgeries range from transoral laser surgery to supracricoid laryngectomy, all with good quality in speech and swallowing. For those submitted to total laryngectomy, voice could be rehabilitated with insertion of voice prosthesis, esophageal voice or electrolarynx. One could bear in mind the analysis of two American cancer registry databases, the SEER (Surveillance, Epidemiology, and end Results) and NCDDB (National Cancer Data Base). As almost all cancers of human beings had an increase in five years disease free survival for larynx cancer, this survival is decreasing, probably related to increase in non-surgical options of treatment.<sup>10</sup> Then there is a need to reaffirm the surgical treatment as standard treatment for larynx cancer with function sparing surgeries, or total laryngectomy for T4 lesions, unless in the case of a widespread T1 or T2 lesion or T3 lesion, which requires total laryngectomy.

## References

1. Cooper JS, Pajak TF, Forastiere AA, Jacobs J, Campbell BH, Saxman SB, et al. Postoperative concurrent radiotherapy and chemotherapy for high-risk squamous-cell carcinoma of the head and neck. *N Engl J Med.* 2004;350:1937-44.
2. Induction chemotherapy plus radiation compared with surgery plus radiation in patients with advanced laryngeal cancer. The Department of Veterans Affairs Laryngeal Cancer Study Group. *N Engl J Med.* 1991;324:1685-90.
3. Abdurehim Y, Hua Z, Yasin Y, Xukurhan A, Imam I, Yuqin F. Transoral laser surgery versus radiotherapy: Systematic review and meta-analysis for treatment options of T1a glottic cancer. *Head Neck.* 2012;34:23-33.

<sup>☆</sup>Please cite this article as: Chone CT. Changing paradigms in treatment of larynx cancer. *Braz J Otorhinolaryngol.* 2014;80:96-7.

4. Basheeth N, O'Leary G, Sheahan P. Pharyngocutaneous fistula after salvage laryngectomy: Impact of interval between radiotherapy and surgery, and performance of bilateral neck dissection. *Head Neck*. 2013. 2014;36:580-4.
5. Dey P, Arnold D, Wight R, Mackenzie K, Kelly C, Wilson J. Radiotherapy versus open surgery versus endolaryngeal surgery (with or without laser) for early laryngeal squamous cell cancer. *Cochrane Database Syst Rev*. 2002;(2):CD002027.
6. Higgins KM. What treatment for early-stage glottic carcinoma among adult patients: CO2 endolaryngeal laser excision versus standard fractionated external beam radiation is superior in terms of cost utility? *Laryngoscope*. 2011;121:116-34.
7. Spielmann PM, Majumdar S, Morton RP. Quality of life and functional outcomes in the management of early glottic carcinoma: a systematic review of studies comparing radiotherapy and transoral laser microsurgery. *Clin Otolaryngol*. 2010;35:373-82.
8. Pfister DG, Laurie SA, Weinstein GS, Mendenhall WM, Adelstein DJ, Ang KK, et al. American Society of Clinical Oncology Clinical Practice. Guideline for the use of larynx-preservation strategies in the treatment of laryngeal cancer. *J Clin Oncol*. 2006; 24:3693-704.
9. Plataniotis GA, Theofanopoulou ME, Kalogera-Fountzila A, Haritanti A, Ciuleanu E, Ghilezan N. Prognostic impact of tumor volumetry in patients with locally advanced head-and-neck carcinoma (non-nasopharyngeal) treated by radiotherapy alone or combined radiochemotherapy in a randomized trial. *Int J Radiat Oncol Biol Phys*. 2004;59:1018-26.
10. Hoffman HT, Porter K, Karnell LH, Cooper JS, Weber RS, Langer CJ, et al. Laryngeal Cancer in the United States: Changes in demographics, patterns of care, and survival. *Laryngoscope*. 2006;116:1-13.

Carlos Takahiro Chone

*Department of Otolaryngology Head and Neck, Universidade Estadual de Campinas (UNICAMP), Campinas, SP, Brazil  
E-mail: carloschone@uol.com.br (C.T. Chone).*