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**Literature search results**

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**Search details**

T2 N0 M0 squamous cell carcinoma of the larynx. Radiotherapy field including or excluding the neck lymph nodes. How does this influence locoregional control and diseases free survival.

**Resources searched**

NICE Evidence; TRIP Database; Cochrane Library; CINAHL; EMBASE; MEDLINE; Google Scholar

**Database search terms:** (larynx OR laryngeal OR "voice box*" OR voice-box* OR voicebox*), (glottis OR glottic OR supraglottis OR supraglottic OR epiglottis OR epiglottic OR subglottis OR subglottic), ("squamous cell carcinoma*" OR "squamous cell cancer*"), (radiotherapy OR "radiation therapy"), radiation, ("radiotherapy field*" OR "radiation field*" OR "radiation therapy field*"), (neck adj3 "lymph node*"), (neck adj3 "lymph gland"), (cervical adj3 "lymph node*"), (cervical adj3 "lymph gland"), (cancer* OR oncolog* OR neoplasm* OR tumour* OR carcinoma*), exp LARYNX, exp CARCINOMA, SQUAMOUS CELL/ OR exp NEOPLASMS, SQUAMOUS CELL, exp RADIOTHERAPY, exp RADIATION, exp RADIATION FIELDS, exp LYMPH NODES/, (locoregional* OR loco-regional* OR "locoregional"*)

**Evidence search string(s):** (cancer OR carcinoma) (larynx OR laryngeal) (radiotherapy OR radiation) "lymph nodes"

**Google search string(s):** (cancer OR carcinoma) (larynx OR laryngeal) (radiotherapy OR radiation) "lymph nodes"
Evidence Reviews

Cochrane Database of Systematic Reviews

Radiotherapy versus open surgery versus endolaryngeal surgery (with or without laser) for early laryngeal squamous cell cancer, 2002

For patients with early glottic laryngeal cancer there remains uncertainty as to the comparative benefits and societal costs of different treatment modalities.

Published Research – Databases

Exclusive radiotherapy for stage T1-T2N0M0 laryngeal cancer: Retrospective study of 59 patients at CFB and CHU de Caen

Author(s): Cuny F., Gery B., Florescu C., Clarisse B., Blanchard D., Rame J.-P., Babin E., De Raucourt D.

Citation: European Annals of Otorhinolaryngology, Head and Neck Diseases, November 2013, vol./is. 130/5(251-256), 1879-7296;1879-730X (November 2013)

Publication Date: November 2013

Abstract: Objective: Study of patients with stage T1N0M0 or T2N0M0 glottic cancer treated by exclusive radiotherapy and comparison of the survival and functional results of this series with those of the literature. Method: Retrospective study of stage T1N0M0 or T2N0M0 glottic cancers diagnosed between 1st January 2000 and 31st December 2010 and treated by exclusive radiotherapy. Evaluation of survival, recurrence and larynx preservation rates. Study centres: CLCC Francois-Baclesse and CHU de Caen. Patients: Fifty-nine patients (53 men and six women) treated for glottic cancer (57 squamous cell carcinomas, two verrucous carcinomas) comprising 51 T1N0M0 and eight T2N0M0 tumours. Treatment with exclusive radiotherapy (mean dose of 70 Grays limited to the thyroid cartilage for 57 patients, with lymph node irradiation for two patients). Results: In this series, five (9.8%) patients with stage T1N0M0 glottic cancer and three patients (37.5%) with stage T2N0M0 glottic cancer relapsed, corresponding to a global recurrence rate of 13.6%. Three of the eight recurrences involved lymph nodes exclusively (N), two patients relapsed exclusively at the primary tumour site (T) and three patients presented local and lymph node recurrence (T and N). Treatment consisted of salvage total laryngectomy with bilateral cervical lymph node dissection in three cases, bilateral cervical lymph node dissection and sensitized radiotherapy in two cases, exclusive chemotherapy in one case, cervical lymph node dissection and cervical radiotherapy in one case. The last patient with recurrence died prior to salvage therapy. The larynx preservation rate was 94.9%. Conclusion: In comparison with the literature, treatment of stage T1-T2N0M0 glottic cancer by exclusive radiotherapy gives very good results, with a larynx preservation rate of 95%. 2013 Elsevier Masson SAS.

Source: EMBASE

Available in fulltext from European Annals of Otorhinolaryngology, Head and Neck Diseases at Free Access Content

A prospective longitudinal study on endocrine dysfunction following treatment of laryngeal or hypopharyngeal carcinoma.

Author(s): Lo Galbo AM, Kuik DJ, Lips P, von Blomberg BM, Bloemena E,
Leemans CR, Debree R

**Citation:** Oral Oncology, September 2013, vol./is. 49/9(950-5), 1368-8375;1368-8375 (2013 Sep)

**Publication Date:** September 2013

**Abstract:** OBJECTIVES: The incidences of hypo(para)thyroidism were assessed prospectively in 137 consecutive patients with laryngeal (84.7%) or hypopharyngeal (15.3%) carcinoma who were treated with surgery and/or radiotherapy between 2004 and 2006. MATERIAL AND METHODS: Laboratory studies were performed in patients before primary or salvage treatment of a laryngeal or hypopharyngeal carcinoma and were repeated 6, 12, 18 and 24 months after treatment. All patients were evaluated for the development of hypo(para)thyroidism, and the presence of autoantibodies. The association of hypothyroidism was analyzed against several patient parameters including tumor and treatment characteristics.

RESULTS: The incidence of hypothyroidism following treatment of laryngeal and hypopharyngeal carcinoma was 47.4%: 27.7% subclinical hypothyroidism and 19.7% clinical hypothyroidism. The median time to develop hypothyroidism was 10 months. The incidence of hypoparathyroidism was 7.3%. Univariate analysis showed that patients with laryngectomy, hemithyroidectomy, neck dissection, paratracheal lymph node dissection and radiotherapy had a higher risk of developing hypothyroidism. Multivariate analysis showed laryngectomy, hemithyroidectomy, neck dissection and age to be predictive factors for the development of hypothyroidism. The combination of surgery and radiotherapy increased this risk. Hemithyroidectomy was the most important risk factor.

CONCLUSION: The incidence rate of hypothyroidism after treatment for laryngeal or hypopharyngeal cancer in this largest prospective study is high (47.4%), especially after combination treatment. Based on the intervals between treatment and the development of hypothyroidism, thyroid testing before treatment, every 3 months during the first year, every 6 months the second year and annually thereafter is recommended as screening procedure. Copyright 2013 Elsevier Ltd. All rights reserved.

**Source:** Medline

Radiotherapy with fraction size of 2.25 Gy in T1-2 laryngeal and hypopharyngeal cancer.


**Citation:** Journal of Radiation Research, July 2013, vol./is. 54/4(684-9), 0449-3060;1349-9157 (2013 Jul 1)

**Publication Date:** July 2013

**Abstract:** This study was carried out to evaluate the influence of fraction size 2.25 Gy on local control of T1 and T2 laryngeal and hypopharyngeal cancers. Between August 2002 and December 2010, 80 patients with T1 and T2 laryngeal or hypopharyngeal cancers were treated with definitive radiotherapy with a fraction size of 2.25 Gy. Primary sites were the larynx in 69 and the hypopharynx in 11. Fifty-three patients were T1 and 27 were T2. All patients’ pathology was squamous cell carcinoma except one carcinosarcoma. Radiotherapy was delivered 5 days/week with a 4-MV photon beam up to a total dose of 63.0 Gy. Median treatment time was 41 days. Statistical analysis of survival was calculated using the Kaplan-Meier method. No acute toxicity greater than grade 2 (CTCAE ver. 3.0) including mucositis and dermatitis was observed. All but one patient had a complete response. The partial response patient received salvage surgery. The median follow-up period was 47 months (ranging from 4 to 108 months). No late toxicity greater than 1 was observed. Nine patients developed recurrence, seven local and two neck lymph nodes. Three patients died, one from laryngeal cancer and two from intercurrent diseases. The 5-year local control rates (LCRs) in the entire group, larynx T1, larynx T2 and hypopharynx T1 were 85.8%, 97.6%, 70.1% and 85.7%, respectively. The LCRs of T1 improved compared with our historical
Radiotherapy with fraction size of 2.25 Gy in T1-2 laryngeal and hypopharyngeal cancer.


**Citation**: Journal of Radiation Research, July 2013, vol./is. 54/4(684-9), 0449-3060;1349-9157 (2013 Jul 1)

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**Source**: Medline

Definitive radiotherapy for T2 glottic carcinoma: Experience in our institution

**Author(s)**: Toledo Serrano M., Roman Jobacho A., Zapata I., Gomez-Millan J., Medina Carmona J.

**Citation**: Reports of Practical Oncology and Radiotherapy, June 2013, vol./is. 18/(S243), 1507-1367 (June 2013)

**Publication Date**: June 2013

**Abstract**: Introduction. There is a wide range of locoregional control described in the literature regarding T2 glottic carcinoma treated with definitive radiotherapy. Identification of prognostic factors is needed to increase the therapeutic index of these tumours. Purpose. To report our experience of definitive radiotherapy for T2 glottic carcinoma referred to our center between March 2005 and December 2012. Prognostic factors for locoregional recurrence are analyzed. Method. We retrospectively reviewed the medical records of 37 consecutive patients with T2 glottic carcinoma treated with Radiotherapy in our Department. Clinical outcome in terms of locoregional control (LRC), disease free survival (DFS) and site of relapse were evaluated. The prognostic significance of different clinical characteristics was
analyzed. Results. 20 patients presented a T2a and 17 a T2b stage. 25 patients were treated with 70 Gy/2 Gy, 12 patients were treated with 65.25 Gy/2.25 Gy. Treatment volume included cervical nodes (II-IV) in 7 patients. After a median follow up period of 76 months, the 5-year DFS was 76.4%. 30% of patients presented a locoregional recurrence (6 local and 1 regional). There was no significant difference in relapse between T2a and T2b. A non significant increase in survival was observed in treatment with fractions >2 Gy. In 67.6% of cases the voice quality improved or remained the same after treatment. Acute or chronic toxicity was none or mild in all cases (only 1 patient had chronic laryngeal edema). Conclusion. Our results are consistent with the literature. Only 1 regional recurrence was observed. Acute side effects were tolerable and only 1 patient present chronic laryngeal edema. More patients need to be included to identify significant prognostic factors.

Source: EMBASE
Available in fulltext from Reports of Practical Oncology and Radiotherapy at National Library of Medicine

Elective lymph node irradiation with intensity-modulated radiotherapy: Is conventional dose fractionation necessary?

Author(s) Bedi M., Firat S., Semenenko V.A., Schultz C., Tripp P., Byhardt R., Wang D.

Citation: International Journal of Radiation Oncology Biology Physics, May 2012, vol./is. 83/1(e87-e92), 0360-3301X (01 May 2012)

Publication Date: May 2012

Abstract: Purpose: Intensity-modulated radiation therapy (IMRT) is the standard of care for head-and-neck cancer (HNC). We treated patients with HNC by delivering either a moderate hypofractionation (MHF) schedule (66 Gy at 2.2 Gy per fraction to the gross tumor [primary and nodal]) with standard dose fractionation (54-60 Gy at 1.8-2.0 Gy per fraction) to the elective neck lymphatics or a conventional dose and fractionation (CDF) schedule (70 Gy at 2.0 Gy per fraction) to the gross tumor (primary and nodal) with reduced dose to the elective neck lymphatics. We analyzed these two cohorts for treatment outcomes. Methods and Materials: Between November 2001 and February 2009, 89 patients with primary carcinomas of the oral cavity, larynx, oropharynx, hypopharynx, and nasopharynx received definitive IMRT with or without concurrent chemotherapy. Twenty patients were treated using the MHF schedule, while 69 patients were treated with the CDF schedule. Patient characteristics and dosimetry plans were reviewed. Patterns of failure including local recurrence (LR), regional recurrence (RR), distant metastasis (DM), disease-free survival (DFS), overall survival (OS), and toxicities, including rate of feeding tube placement and percentage of weight loss, were reviewed and analyzed. Results: Median follow-up was 31.2 months. Thirty-five percent of patients in the MHF cohort and 77% of patients in the CDF cohort received chemotherapy. No RR was observed in either cohort. OS, DFS, LR, and DM rates for the entire group at 2 years were 89.3%, 81.4%, 7.1%, and 9.4%, respectively. Subgroup analysis showed no significant differences in OS (p = 0.595), DFS (p = 0.863), LR (p = 0.833), or DM (p = 0.917) between these two cohorts. Similarly, no significant differences were observed in rates of feeding tube placement and percentages of weight loss. Conclusions: Similar treatment outcomes were observed for MHF and CDF cohorts. A dose of 50 Gy at 1.43 Gy per fraction may be sufficient to electively treat low-risk neck lymphatics. 2012 Elsevier Inc. All rights reserved.

Source: EMBASE

Evaluation of the treatment results of laryngeal carcinoma: Our experience over 10 years

Author(s) Karatas E., Baysal E., Durucu C., Baglam T., Bayazit Y.A., Kanlikama M.
Abstract: Aim: To retrospectively analyze the treatment results for laryngeal carcinoma and to find the impact of the clinical parameters on the survival of the patients. Materials and methods: The medical records of 150 consecutive patients, operated on for laryngeal squamous cell carcinoma between 1991 and 2009, were reviewed. Tumor localization, TNM stages, treatment modalities, radiotherapy, second primary tumors, and tumor recurrence were recorded, and the survival data were obtained. Results: Neck metastasis was rare (3.6%) in T1 and T2 glottic tumors, while there was a significant increase in the rate of N+ neck (35%) in T3 and T4 glottic tumors (P < 0.05). N+ neck was encountered in 28% of the early and 33% of the late-stage supraglottic cancers (P > 0.05). There was a significant relation between survival and tumor recurrence (P < 0.05), whereas the other clinical parameters were not associated with survival (P > 0.05). The risk for death of the disease increased by 63.3% when tumor recurrence occurred (odds ratio = 6.3573). Conclusion: Aggressive treatment of the primary tumor and neck may eliminate the impact of advanced tumor stage on survival. Local and regional recurrence and second primary diagnosis are the most important factors involved in survival in laryngeal carcinoma. TUBITAK.

Source: EMBASE
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Radiotherapy on the neck nodes predicts severe weight loss in patients with early stage laryngeal cancer


Abstract: Background and purpose: Although patients with early stage (T1/T2) laryngeal cancer (LC) are thought to have a low incidence of malnutrition, severe weight loss is observed in a subgroup of these patients during radiotherapy (RT). The objective of this study was to evaluate weight loss and nutrition-related symptoms in patients with T1/T2 LC during RT and to select predictive factors for early identification of malnourished patients. Methods: Of all patients with T1/T2 LC, who received primary RT between 1999 and 2007, the following characteristics were recorded: sex, age, TNM classification, tumour location, radiation schedule, performance status, quality of life, weight loss, and nutrition-related symptoms. The association between baseline characteristics and malnutrition (>5% weight loss during RT) was investigated by Cox regression analysis. Results: The study population consisted of 238 patients. During RT, 44% of patients developed malnutrition. Tumour location, TNM classification, RT on the neck nodes, RT dose, nausea/vomiting, pain, swallowing, senses problems, trouble with social eating, dry mouth and the use of painkillers were all significantly associated with malnutrition. In the multivariate analysis, RTs on both the neck nodes (HR 4.16, 95% CI 2.62-6.60) and dry mouth (HR 1.72, 95% CI 1.14-2.60) remained predictive. Nevertheless, RT on the neck nodes alone resulted in the best predictive model for malnutrition scores. Conclusions: Patients with early stage laryngeal cancer are at risk of malnutrition during radiotherapy. Radiotherapy on the neck nodes is the best predictor of malnutrition during radiotherapy. Therefore, we suggest to offer nutritional counselling to all the patients who receive nodal irradiation. 2010 Elsevier Ireland Ltd. All rights reserved.

Source: EMBASE
Radiotherapy with or without chemotherapy for patients with T1-T2 glottic carcinoma: Retrospective analysis

Author(s) Hirasawa N., Itoh Y., Ishihara S., Kubota S., Itoh J., Fujimoto Y., Nakashima T., Naganawa S.

Citation: Head and Neck Oncology, 2010, vol./is. 2/1, 1758-3284 (2010)

Publication Date: 2010

Abstract: Background. To assess the results for local control (LC) and survival in patients with early-stage glottic cancer (GC) who were treated by radiotherapy (RT) with or without chemotherapy. Methods. Fifty-eight patients with T1-T2 squamous cell carcinoma of the glottis who were treated between 2001 and 2006 were analyzed retrospectively. Potential prognostic factors for LC were evaluated by univariate analysis. Results. The 5-year LC rate in all patients was 84.3%. The overall 5-year LC rates for patients with T1a, Tb, and T2 GC were 85.9%, 83%, and 85%, respectively. Of the 58 patients, eight developed recurrent disease at the primary site, and one had lymph node recurrences on the neck. In the final analysis, the total laryngectomy-free survival rate was 93% at five years, and the ultimate LC rates for T1a, Tb, and T2 were 100%, 90.9%, and 95.2%, respectively. In a univariate analysis of 55 patients, there was no statistical significance between the LC rate for RT alone and that for chemoradiation. Only two patients died of laryngeal carcinoma, and one died of intercurrent disease. Fifty-five patients were living disease-free at the end of the study period. The 5-year overall survival (OS) rate for all patients was 88.1%, and the 5-year OS rates for T1a, Tb, and T2 were 91.6%, 77.8%, and 89.9%, respectively. Conclusions. The retrospective analysis showed a high rate of LC and larynx preservation in patients with T1-T2 GC by means of RT with or without chemotherapy. There was, however, no statistical difference in LC rates for the two types of therapy. 2010 Hirasawa et al; licensee BioMed Central Ltd.

Source: EMBASE
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Contemporary management of head and neck cancers.

Author(s) Gil Z, Fliss DM

Citation: Israel Medical Association Journal: Imaj, May 2009, vol./is. 11/5(296-300), 1565-1088 (2009 May)

Publication Date: May 2009

Abstract: Head and neck cancer is the sixth most common cancer worldwide. HNCs can originate in the skin or soft tissue, in the upper aerodigestive tracts (oral cavity, oropharynx, hypopharynx, larynx, nasopharynx, paranasal sinuses, salivary glands), or in the thyroid. In each of these sites, tumors vary not only by the primary site but also by pathophysiology, biological behavior, and sensitivity to radiotherapy or chemotherapy. Management should be planned according to the tumor's characteristics, patient factors and expertise of the medical team. The main goals of therapy are ablation of the cancer while minimizing morbidity and preserving function and cosmesis. A multidisciplinary team is needed to achieve these goals. Early-stage HNC (stage I and II) should be managed with a single modality, and advanced tumors (stage III and IV) with multimodality therapy. Treatment should be directed to the primary tumor and the area of its lymphatic drainage--the neck lymph nodes. Evidence of metastases in the neck necessitates comprehensive clearance of regional lymphatic basins. However, even if there is no evidence of lymph nodes metastases, when the risk for positive neck lymph nodes exceeds 15-20% elective neck dissection is indicated. Advances in minimally invasive techniques now enable reliable microscopic and endoscopic...
procedures that mimic the open approaches. Development of contemporary surgical techniques and reconstructive means will help improve the quality of life of patients and prolong survival.

Source: Medline

Current opinion in diagnosis and treatment of laryngeal carcinoma
Author(s) Marioni G., Marchese-Ragona R., Cartei G., Marchese F., Staffieri A.
Citation: Cancer Treatment Reviews, November 2006, vol./is. 32/7(504-515), 0305-7372 (November 2006)
Publication Date: November 2006
Abstract: Laryngeal carcinoma is the 11th commonest form of cancer in men world-wide, with 121,000 new cases in 1985. More than 95% of all laryngeal malignancies are squamous cell carcinomas. Treatment indications in cancer of the larynx are often controversial, since there are few comparative studies of different available therapeutic approaches. Surgery and radiotherapy are both widely used, and the choice between these two procedures is the most common therapeutic decision which has to be taken. Laryngeal function preservation has gained more and more weight in the last decades and chemotherapy is also a significant component of several curative approaches. In the last decades, several organ-preserving surgical techniques have become available and consequently total laryngectomy results less applied. Regardless of the treatment modality, Tis, T1, T2 laryngeal carcinomas have an 80-90% probability of cure, whereas for more advanced tumours this is approximately 60%. The most effective approach to laryngeal cancer remains prevention and early diagnosis when this cancer is curable with function preserving treatments. 2006 Elsevier Ltd. All rights reserved.

Source: EMBASE

An assessment of risk factors for the development of a second primary malignancy in the head and neck
Author(s) Bhattacharyya N.
Citation: Ear, Nose and Throat Journal, 2006, vol./is. 85/2(121-125), 0145-5613 (2006)
Publication Date: 2006
Abstract: This retrospective database study of 44,862 patients who had a history of a primary head and neck malignancy was conducted to identify any clinical variables that may predict the occurrence of a second primary head and neck malignancy. During a mean follow-up of 42.2 months, a second head and neck primary developed in 941 of these patients (2.1%). Statistical analyses revealed that a higher incidence of a second primary was associated with increased age and a location of the first primary in the larynx/hypopharynx, the oropharynx, a major salivary gland, or the nasopharynx. A lower incidence was associated with the presence of cervical nodal disease or treatment of the first primary with radiation therapy. Factors that had no effect on the risk of a second primary included sex, the size of the first primary tumor, a first-primary site in the oral cavity, and treatment of the first primary with cancer-directed surgery. The risk of a second primary head and neck cancer remained constant for at least 10 years.

Source: EMBASE

Available in fulltext at Ear, Nose and Throat Journal; Collection notes: On first login to a ProQuest journal you will need to select 'Athens (OpenAthens Federation)' from Select Region, and then 'NHS England' from Choose your Library.

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The influence of lymph node metastasis in the treatment of squamous cell carcinoma of the oral cavity, oropharynx, larynx, and hypopharynx: N0 versus N+
Author(s) Layland M.K., Sessions D.G., Lenox J.
Citation: Laryngoscope, April 2005, vol./is. 115/4(629-639), 0023-852X (April 2005)
Publication Date: April 2005

Abstract: Objectives/Hypothesis: Management of the N0 neck is a continuing controversy. The study compares the influence of N0 and N+ disease on the results of treating squamous cell carcinoma (SCCA) of the oral cavity (OC), oropharynx (OP), larynx (LX), and hypopharynx (HP) with five different treatment modalities. The study also compares the results of four different approaches to the treatment of the N0 neck. Study Design: A retrospective study of 3887 patients.

Methods: Patients in the Tumor Research Project of the Department of Otolaryngology - Head and Neck Surgery of the Washington University School of Medicine (St. Louis, MO) with biopsy-proven previously untreated SCCA of one of the four above-mentioned regions who were treated with curative intent by one of five modalities and who were eligible for 5-year follow-up were included in the study. The treatment modalities included local resection of primary alone (LR), composite resection (primary with neck dissection) (CR), radiation therapy alone (RT), local resection with radiation therapy (LR/RT), and composite resection with radiation therapy (CR/RT). The N0 neck was treated with one of four approaches: observation with close follow-up reserving treatment only for subsequent neck disease, neck dissection, RT to the neck region, and a combination of neck dissection with RT. Multiple diagnostic, treatment, and follow-up parameters were studied using standard statistical analyses to determine statistical significance.

Results: The 5-year disease-specific survival (DSS) for the all-sites group (ASG) was 59%. The DSS for the subsites included the following: OC, 53%; OP, 47%; LX, 70%; and HP, 42%. Patients with N0 disease had significantly better DSS than patients with N+ disease at all sites. Occult neck disease in N0 patients was low with 4% pN1 for ASG, OC, and LX and with 11% pN1 for OP and HP. There was 3% pN2 for LX, 4% pN2 for ASG and OC, and 6% pN2 for OP and HP. The DSS for patients with occult neck disease was statistically similar to that of N+ patients. Prognostic survival indicators included age, decade of treatment, T stage, N stage, TN stage, treatment modality, and recurrence. Patients over 65 years of age had poorer DSS than younger patients. Staging T, N, and TN affected survival at all sites. Local resection produced better DSS for ASG, OC, LX, and HP patients. Local resection with radiation therapy produced increased DSS for ASG and OC patients. There was no survival advantage for HP patients related to treatment modality. Treatment of the N0 neck with observation and later treatment for subsequent neck disease produced a survival advantage for patients in the ASG. This advantage was specific for ASG and LX patients staged T1N0. For patients staged T2N0, T3N0, and T4N0 at all four subsites there was no survival advantage for any of the four neck approaches. Conclusion: Lymph node metastasis significantly and negatively affects DSS in patients with SCCA of the OC, OP, LX and HP. The rate of occult neck disease (pN+) in N0 patients receiving meticulous workup is low. When present, it produces DSS rates similar to those found in N+ patients. In the study series, there was decreased survival in patients older than 65 years of age, in patients with advanced tumor (T, N, TN), and in patients with recurrent disease. None of the four current approaches to treatment of the N0 neck produces a significant survival advantage. Close observation with later treatment reserved for subsequent neck disease produces statistically similar survival (DSS) to the three elective (prophylactic) treatments and is a valid form of treatment. It may preclude unnecessary treatment of the neck with its attendant risks and complications. Key Words: Lymph node metastasis, squamous cell carcinoma, oral cavity, oropharynx, larynx, hypopharynx, surgery, radiation therapy, survival outcome. 2005 The American Laryngological, Rhinological and Otological Society, Inc.

Source: EMBASE
Available in fulltext from Laryngoscope at Ovid

Radiotherapy for the clinically negative neck in supraglottic laryngeal cancer.

Author(s) Alpert TE, Morbidini-Gaffney S, Chung CT, Bogart JA, Hahn SS, Hsu J,
Abstract: Purpose The supraglottic larynx has rich lymphatic drainage, resulting in a high incidence of occult cervical metastases, and the optimal treatment of the clinically uninvolved neck in supraglottic laryngeal cancer remains controversial. Selected retrospective series report a greater than 20% regional failure after treatment by radiotherapy alone, and some investigators recommend routine prophylactic neck dissection. We report on our series of patients who received radiotherapy as sole treatment to the clinically negative neck, either to the bilateral neck for NO disease or to the contralateral neck for ipsilateral lymphatic involvement. Patients and methods Between 1971 and 1998, 150 patients with supraglottic laryngeal cancer received radiotherapy alone to the clinically negative neck. Fifty-two patients had ipsilateral lymph node metastases (N1 = 16, N2a = 12, N2b = 20, N3 = 4), and 98 patients had no clinical nodal involvement. The primary site (T1/T2 = 74, T3/T4 = 76) was treated with radiotherapy (N = 91) or laryngectomy plus radiotherapy (W = 59). Neck dissection was performed on the involved neck in 36/52 node-positive patients for either multiple involved nodes (N = 20) or size > 3 cm (N = 16). Radiotherapy was delivered in standard fractionation and field arrangement. The median dose to the clinically negative neck was 5000 cGy (range: 4860-6000 cGy). Results With a median follow-up of 48 months, the clinically negative neck was the first site of failure in 3.3% of patients. The contralateral neck remained disease free in all patients. Five failures occurred in the NO neck, and the median time to recurrence was 12 months (range: 5-30 months). Salvage therapy was neck dissection for the NO neck failures. The 5-year locoregional control, disease-specific survival, and overall survival were 69%, 74%, and 61%, respectively. Discussion Our data support the use of radiotherapy as a prophylactic treatment for the clinically negative neck. Tumor control in the clinically uninvolved cervical lymphatics is comparable to that in surgical series, suggesting that routine neck dissection may not be necessary. Prospective trials are necessary to further define the role of radiotherapy in this patient population.

Source: CINAH
Available in fulltext at Cancer Journal, The; Collection notes: On first login to a ProQuest journal you will need to select 'Athens (OpenAthens Federation)' from Select Region, and then 'NHS England' from Choose your Library.
Available in fulltext from Cancer Journal at EBSCOhost

Intensity-modulated radiotherapy improves target coverage, spinal cord sparing and allows dose escalation in patients with locally advanced cancer of the larynx

Author(s) Clark C.H., Bidmead A.M., Mubata C.D., Harrington K.J., Nutting C.M.
Citation: Radiotherapy and Oncology, February 2004, vol./is. 70/2(189-198), 0167-8140 (February 2004)
Publication Date: February 2004
Abstract: Background and purpose An investigation has been carried out into the potential of intensity-modulated radiotherapy (IMRT) to improve the coverage of the targets and the sparing of the spinal cord (SC) in radiotherapy treatment of the larynx and bilateral cervical lymph nodes, in patients with advanced larynx cancer. Patients and methods Conventional radiotherapy (CRT) and IMRT plans were produced for six patients to treat the larynx (PTV1) and lymph nodes (PTV2) to 50Gy (phase 1). A second plan was created to treat the PTV1 to 65Gy and PTV2 to 50Gy (phases 1 and 2). The potential to escalate the dose to both the larynx (to 67Gy) and the nodes (to 56Gy) was investigated for the IMRT plans. Results The phase 1 treatment gave average minimum doses (dose received by 99% volume) of 38.1 (+8.2) and 48.5 (+0.2)Gy for PTV1, treated by CRT and IMRT, respectively, and 35.9 (+2.9) and 46.2 (+1.8)Gy for PTV2. For the two phase treatment the average minimum doses to PTV1 were 51.6 (+8.2) (CRT) and 62.1 (+0.7)Gy (IMRT) (P=0.028) and for PTV2 were 36.2 (+2.9) (CRT) and 46.8 (+0.5)Gy (IMRT)
The average maximum doses (dose received by 1% volume) to the SC were 42.5 (+1.9) (CRT) and 37.9 (+1.4) Gy (IMRT) (P=0.01). For the dose escalated IMRT plans the minimum dose to PTV1 was 64.6 (+0.5) and 50.8 (+1.8) Gy to PTV2. The average SC maximum was 41.5 (+1.6) Gy. Conclusions IMRT offers improved target homogeneity and reduces irradiation of the SC. This sparing of normal tissue structures is sufficient that significant dose escalation of both the larynx and lymph nodes may be possible.

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Analysis of prognostic factors for T1N0M0 glottic cancer treated with definitive radiotherapy alone: Experience of the cancer hospital of Peking Union Medical College and the Chinese Academy of Medical Sciences

**Author(s)** Jin J., Liao Z., Gao L., Huang X., Xu G.
**Citation:** International Journal of Radiation Oncology Biology Physics, October 2002, vol./is. 54/2(471-478), 0360-3016 (01 Oct 2002)
**Publication Date:** October 2002
**Abstract:** Purpose: To analyze the prognostic factors for early-stage glottic cancer (T<sub>1</sub>N<sub>0</sub>M<sub>0</sub>) treated with radiotherapy alone. Methods and Materials: Between 1958 and 1994, 238 patients (220 male) with T<sub>1</sub>N<sub>0</sub>M<sub>0</sub> (UICC 1997) squamous cell carcinoma of the glottis were treated with 6- or 8 MV X-ray or <sup>60</sup>Co radiation in parallel-opposed fields (median size: 22.5 cm<sup>2</sup>) over a median of 52 days to a median dose of 68 Gy. Locoregional control (LC) and overall survival (OS) were estimated by the Kaplan-Meier method. Log-rank and Cox regression analyses were used to identify prognostic factors. Results: The median follow-up time was 127 months (range: 4-410 months). Five- and 10-year OS rates were 84.0% and 74.9%. The 5-year LC rate was 82.2%. Forty-four patients had recurrent disease (41 locally, 2 in cervical lymph nodes, 1 lost to follow-up); 23 had second malignancies. On multivariate analysis, unfavorable prognostic factors for OS were age >65 years (p < 0.001) and second malignancy (p < 0.001). Unfavorable prognostic factors for LC were bulky tumor (p = 0.023), anterior commissure involvement (p = 0.024), and decrease in hemoglobin during treatment (p = 0.025). Conclusions: Radiotherapy alone provides good control of early-stage glottic cancer. Bulky tumor, anterior commissure involvement, and decreasing hemoglobin are negative prognostic factors for LC. 2002 Elsevier Science Inc.

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Considerations in the treatment of the node-negative (NO) neck in glottic carcinomas

**Author(s)** Elo J., Balatoni Z., Kotai Z., Bartfai R.
**Citation:** Pathology and Oncology Research, 2002, vol./is. 8/4(257-261), 1219-4956 (2002)
**Publication Date:** 2002
**Abstract:** Treatment of lymph node negative (NO) glottic carcinoma has raised numerous controversy for decades. Prevention is one of the oldest axioms in medicine. On the other hand, overtreatment can cause unnecessary harm to patients. This retrospective study was performed in 206 patients having glottic cancers with clinically node-negative (NO) necks. The aim of this assessment is to deal with the diagnosis, predictive factors and surgical therapy of occult metastases of squamous cell cancers originating from the glottic region. The examinations were performed in three phases. Preoperative clinical, histological - and in selective cases - imaging were carried out to separate high-risk patients. Intraoperative cases of open surgery after U-shaped skin preparation up to the hyoid bone with direct inspection of jugular lymph node chain (JLNCh) where the
neck was staged. The enlarged suspicious nodes were submitted for immediate frozen section. The types of neck dissection were based on the size, shape, number and histological diagnosis of regional nodes. The postoperative additional management was decided according to the results of definitive pathological findings from serial sections of the dissected specimen. Endolaryngeal LASER surgery was carried out in 87 patients based on clinical, histological and imaging criteria. In the course of two years follow-up 2 occult metastases became clinically apparent. At 119 cases open surgery were performed. In 51 patients we could not see enlarged lymph nodes (N < 2 mm) with direct examination, and thus the JLNCh remained intact. In 68 patients elective neck dissections (END) were carried out. In cases of extracapsular spread (ECS) and/or multiple nodal involvements additional radiotherapy was given.

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Primary carcinoma of the subglottic larynx
Author(s) Santoro R., Turelli M., Polli G.
Citation: European Archives of Oto-Rhino-Laryngology, 2000, vol./is. 257/10(548-551), 0937-4477 (2000)
Publication Date: 2000
Abstract: Primary cancer of the subglottic region is very rare and delay in diagnosis often leads to a poor prognosis. We retrospectively reviewed 49 patients with primary cancer of the subglottic larynx observed from 1969 to 1993 in the ORL Clinic of the University of Florence. This number constitutes 1.6% of all laryngeal cancers observed during this period. Four (8.2%) patients were stage T1, 13 (26.5%) T2, 27 (55.1%) T3, and 5 (10.2%) T4. Forty-one patients were eligible for assessing the disease-free five-year survival rate, 17 of whom were treated with surgery alone, 6 with radiotherapy alone and 18 with combination therapy (surgery for the primary tumor and post-operative radiotherapy for cervical nodes). The five-year survival rate for the three treatment types was 47%, 0% and 83.3%, respectively. The overall survival rate was 56.1%. Combination therapy produced a significantly higher (P = 0.001) disease-free survival than surgery alone or radiotherapy alone.

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From the 1st fifty results:
T1-T2N0 squamous cell carcinoma of the glottic larynx treated with radiation therapy. Journal of Clinical Oncology, 2001
PURPOSE: The end results after radiation therapy for T1-T2N0 glottic carcinoma vary considerably. We analyze patient-related and treatment-related parameters that may influence the likelihood of cure.
PATIENTS AND METHODS: Five hundred nineteen patients were treated with radiation therapy and had follow-up for ≥ 2 years. Three patients who were disease-free were lost to follow-up at 7 months, 21 months, and 10.5 years. No other patients were lost to follow-up.
RESULTS: Local control rates at 5 years after radiation therapy were as follows: T1A, 94%; T1B, 93%; T2A, 80%; and T2B, 72%. Multivariate analysis of local control revealed that the following parameters significantly influenced this end
point: overall treatment time (P < .0001), T stage (P = .0003), and histologic differentiation (P = .013). Patients with poorly differentiated cancers fared less well than those with better differentiated lesions. Rates of local control with laryngeal preservation at 5 years were as follows: T1A and T1B, 95%; T2A, 82%; and T2B, 76%. Cause-specific survival rates at 5 years were as follows: T1A and T1B, 98%; T2A, 95%; and T2B, 90%. One patient with a T1N0 cancer and three patients with T2N0 lesions experienced severe late radiation complications.

CONCLUSION: Radiation therapy cures a high percentage of patients with T1-T2N0 glottic carcinomas and has a low rate of severe complications. The major treatment-related parameter that influences the likelihood of cure is overall treatment time.