

Conclusions: RT and L have almost the same expected average cost for the treatment of T1N0 glottic SCC, whereas PL is twice as expensive. Cost-effectiveness analysis (with voice quality as effectiveness parameter) is in progress.

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ORAL

Larynx conservation in a randomized trial of hyperfractionated (HFRT) versus conventional once daily radiation (CRT): A subgroup analysis

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Purpose: To examine the ability of HFRT and CRT to conserve the larynx in patients with advanced laryngeal cancer.

Methods: Between 1988 and 1995, 336 patients with locally advanced cancers of the larynx, hypopharynx or oropharynx were randomized to receive radiation therapy (RT) with curative intent. A subset of 116 patients had category T3 or T4 (UICC-AJC 1987) primary larynx cancer. Treatment was either 51Gy TAD/20 fractions/4 wk (2.55 Gy 1x/d = CRT) or 58 Gy TAD/40 fractions/4 wk (1.45 Gy 2x/d, 6 hr interval, = HFRT). Surgical salvage was performed for residual cancer whenever possible.

Results: The primary cancer arose in the glottis in 30, and in the supraglottis in 86; 51 tumors were T3 and 65 were T4. The local recurrence free rates at 3 yr were 50% (CRT) and 54% (HFRT) (Log rank $p = 0.46$). Local control was achieved in 46% (24/52) of those who had tracheostomy prior to RT. The overall survival rates at 3 yr were 47% (CRT) and 69% (HFRT) ($p = 0.04$). No patient experienced toxicity which required laryngectomy.

Conclusion: In this subset analysis there is no significant advantage of HFRT over CRT at the doses given with respect to control of advanced laryngeal cancer. Both fractionation schemes proved capable of preserving the larynx in more than 50% of patients with either T3 or T4 cancer. Prior tracheostomy did not prevent larynx conservation by RT.

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ORAL

Organ preservation and survival with surgical treatment for larynx carcinoma

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Objective: This prospective study evaluates the potential role of organ sparing surgical procedures for larynx carcinoma in a large series of unselected patients from a single institution.

Patients and Methods: 504 consecutive patients with previously untreated carcinoma of the larynx were seen from 1986 to 1994. The treatment protocol included transoral laser surgery (TLS) of the primary for lesions classified T1/T2; conventional partial laryngectomies for these lesions if they were not accessible endoscopically; total laryngectomy for most lesions classified T3/T4; and radiotherapy for patients not suited for surgery.

Results: TLS was used in 290 patients (58%), total laryngectomy in 130 (26%), conventional partial laryngectomies in 31 (6%), radiotherapy in 34 (7%). Nineteen (4%) had no curative treatment. Five-year uncorrected actuarial survival was 67.7%, and cause specific survival was 86.9% for the 485 patients with curative treatment. 63.3% of them had their larynx preserved.

Conclusion: TLS was the most important single treatment modality in this series. Surgery as the main therapeutic approach (in combination with postoperative radiotherapy for advanced stages) leads to excellent survival rates and a high percentage of final organ preservation.

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ORAL

The role of postoperative radiotherapy in the treatment of salivary gland carcinoma's

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Purpose: In a Dutch multicentric retrospect. study prognostic factors for local control in salivary gland carcinoma's treated with surgery +/- radiotherapy were studied.

Methods and Materials: Out of 568 patients 501 were treated with surgery, in 389 combined with postoperative radiotherapy (50-70 Gy, mean

dose 62 Gy). In the surgery alone group oral cavity tumors and small, radically resected tumors prevailed. Patients were treated between 1985 and 1994. The parotid gland was involved in 59%, submandibular gland in 14%, oral cavity in 24% and 3% elsewhere. Tumorstage was 29% T₁, 47% T₂, 18% T₃ and 6% T₄; 87% N₀. Resection margins were radical in 37%, close in 20% and irradical in 40%, unknown in 3%.

Results: In a multivariate analysis, using Cox proportional hazard regression analysis, independent factors for local control were T-stage (T₁ = T₂ > T₃, > T₄; $p < 0.001$), anatomic site (oral cavity > parotid and submand. gland, > elsewhere; $p = 0.009$) and treatment modality. Actuarial local control after 8 yr was 80% for surgery alone and 92% for the combined modality (in which more advanced cases prevailed), $p < 0.001$. No dose response relation was shown. Bone invasion ($p < 0.001$) was an independent histologic factor; histologic type, resection resection margin, age and sex were not.

Conclusion: Postoperative radiotherapy improves local control, however small (<4 cm) tumors in the oral cavity, radically resected, may be treated with surgery alone (97% local control). A dose response relationship was not shown, however most patients were treated with ≥ 60 Gy. Local control was independent of histologic type.

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ORAL

Acoustic neuromas (AN) treated by fractionated stereotactic radiosurgery (FSR)

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Single fraction radiosurgery of AN is remarkable for high control but not infrequent incidence of facial and trigeminal neuropathy. Large tumors treated surgically often result in deafness, facial neuropathy. FSR was developed to maintain efficacy and minimize toxicity.

Described are 38 patients (pts) with 39 AN. Age range: 35 to 89 years (mean 60). 2000 Centigray (cGy) divided weekly dose 400 or 500 cGy was delivered. Volume ranged 0.1-32.0 cc (mean 6.9). 23 AN had diameters <3 cms (range 0.3-2.8, mean 1.6). 16 measured 3 cms or greater ranged 3.0-5.0 (mean 3.7).

All tumors were controlled. 14 smaller (61%) decreased in size. 9 showed cessation of growth. Radiographic follow up ranged 4-34 months (median 16.3). Clinical follow up was 5-37 months (median 27.1). 21 with pure tone audiometry, 2 improved, 18 remained stable and 1 worsened. One pt had transient facial weakness after treatment which resolved. 22 pts, 15 had improved balance, 7 were unchanged.

13 of 16 (81%) larger AN diminished in size. Remainder showed cessation of growth. Radiographic follow-up ranged 4-30 months (median 20.7). Clinical follow-up was 14-35 months (median 28.1). 11 pts with audiometry 2 improved, 8 were stable and 1 worsened. Of 15 symptomatic pts, 12 had improved balance, 2 were stable, 1 worsened. All were controlled. No pt developed 5th nerve symptoms after treatment, no pts required surgery for treatment failure. 1 pt had temporary 7th nerve palsy.

FSR offers a therapeutic approach producing high control rates while avoiding frequent morbidity.

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ORAL

Complications in the surgical treatment of carotid body paragangliomas

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Purpose: Carotid body paragangliomas are rare neoplasms and usually occur in the third to sixth decade of life. Complications of surgical resection are frequently related to encasement of neurovascular structures and require meticulous subadventitial dissection.

Method: Retrospectively we studied our results and complications.

Results: During the period 1971 to 1995, 34 paraganglioma carotidum tumors were treated in 20 female and 8 male patients. The mean age was 39 (range 11-68) years. Localisation and extension of the tumor was visualized with digital subtraction angiography (DSA) and since 1992 by CT angiography and MRI according to Shamblin. Resection could be performed in 27 patients. There was no perioperative mortality. The external carotid artery had to be sacrificed in 7 pts and the internal carotid artery had to be reconstructed in 3 pts. All these tumors were classified to Shamblin III. One pt had a transcist CVA. Cranial nerve injuries occurred in 7 pts, all with Shamblin II/III lesions. These were temporary and involved the facial (3),

cervical sympathetic (4), vagal (5) and hypoglossal nerve (4), all recovered within 5 months.

Conclusion: Subadventitial dissection is recommended. The postoperative morbidity is particularly low in the early cases (Shamblin type I/II).

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ORAL

Advanced primary and recurrent head and neck malignancies treated with interstitial thermoradiotherapy: 10-year results

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Purpose: "Internal" use of radiotherapy (RT) and hyperthermia (HT) offers high efficacy within a limited target volume and a reduced toxicity due to better sparing of surrounding normal structures. Herein our 10 year clinical experience is compiled.

Methods: Between 1986–1994, 87 patients (16 f., 71 m.; mean age: 56 yrs) with localized head and neck tumors received low dose rate Iridium-192 brachytherapy, external RT and interstitial 915 MHz microwave HT (with up to 16 independent antennae). Tumors were classified as advanced primary or persistent tumors (n = 37) and local recurrent or metastatic (50). Tumor sites included tongue (38), floor of mouth (25), oropharynx (8), tonsillar fossa (3), neck nodes (11) and other sites (2). Mean tumor volume was 68 cm³ (range: 8–288 cm³). Mean RT dose was 25 Gy (IRT) and 55 Gy (ERT) HT was aimed for intratumoral temperatures of 41–44°C over 1 hour. Invasive thermometry was assessed with multiple invasive probes.

Results: At last follow-up, 30 (35%) patients were alive. In uni/bivariate analysis several tumor and treatment variables were significantly correlated with each other: tumor class and volume; class and RT dose; volume and RT dose; volume and thermal parameters; also, all thermal parameters were highly correlated between each other (all $P \leq 0.002$). Logistic regression analysis revealed, that tumor response at 3 (CR) and 12 months (LC) depended on tumor class, volume, RT dose, and minimum thermal parameters. Multivariate analysis showed two independent prognostic factors: tumor volume and minimum thermal parameters.

Conclusion: IHT-IRT is a safe and effective treatment. The results provide important implications for (a) planning of randomized phase II/III studies, and (b) defining precise quality control criteria and thermal performance.

Melanoma

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ORAL

The early diagnosis of cutaneous malignant melanoma: The role of the epiluminescent microscopy

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Purpose: Epiluminescent microscopy (ELM) has been reported to be very useful in the differential diagnosis of cutaneous pigmentary lesions. Improvement in the differential diagnosis of cutaneous pigmentary lesions by using ELM was evaluated during a health campaign for early diagnosis of cutaneous melanoma.

Methods: During 1996, 3869 lesions in 2121 patients (1132 females and 789 males) were evaluated. The median age was 29 years (range 1–89 years). For ELM we used a new hand-held video microscope imaging system (Scopeman Moritex) which utilizes zoom lens allowing 25x and 50x magnifications. Pigmented lesions were evaluated and classified as: a) no melanocytic lesions; b) melanocytic lesions without pigment network; c) melanocytic lesions with pigment network. Melanocytic lesions with pigment network has been further classified as at low-, medium-, high- and very high risk according to the Kenet and Fitzpatrick criteria (1994). Advice for surgery was given in medium-, high- and very high risk lesions. In low risk lesions surgery was justified by cosmetic and/or functional reasons.

Results: In the sample examined we diagnosed 60 new cases of cutaneous melanoma: 32 (53.3%) stage IA (AJCC), 9 (15%) stage IB, 11 (18.3%) stage IIA, 6 (10%) stage IIB, 1 (1.7%) stage III and 1 (1.7%) stage IV.

Conclusions: ELM is a non invasive, easy to use, low cost, highly

sensitive method to improve clinical diagnosis in pigment lesions. ELM sensitivity is high (about 88%). ELM allows identification of cutaneous melanoma when thickness is low and permits, therefore, early treatment and better outcome.

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ORAL

Primary advanced, recurrent and metastatic malignant melanoma clinical update on 20-year results of external beam radiotherapy

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Purpose: Radiotherapy (RT) for malignant melanoma is regarded only as "last resort" in the treatment of malignant melanoma (MM). We have analyzed initial and long-term local control, survival and prognostic factors in locally advanced, recurrent and metastatic MM

Methods: Between 1977–1995, at our clinic a total of 121 out of 2917 (4%) consecutive patients (56 female, 65 male) with histologically proven malignant melanoma (MM) received RT due to advanced stage MM. The primary histology was NM in 51 (47%) pts., SSM in 35 (32%) pts., ALM in 8 (7%) pts. and LMM in 4 (5%) pts.. The indication for RT was primarily for palliative intention in the advanced UICC stages II to IV: (a) 11 (9%) pts with R1-resection of primary or recurrent MM (UICC II); (b) 57 (47%) pts with regional LN metastases (33) or in-transit metastases (24) (UICC III); (c) 53 (44%) pts with distant metastases (7 M1a; 46 M1b) (UICC IV). The mean interval between first diagnosis and actual RT was 19 mos. (range: 3–186 mos). Conventional or hypofractionated RT was applied with 2–6 Gy single dose to a median of 48 Gy (range: 20–60 Gy) total dose.

Results: Complete (CR) or overall response (CR + PR) at 3 mos FU with regard to UICC stage was achieved in 7 or 11 of 11 pts (UICC II); in 25 or 44 of 57 pts (UICC III); and in 9 or 26 of 53 pts (UICC IV). Tumor progression during RT occurred in 25 (21%) pts Median FU was 9 years (range: 0.3–15.5 yrs.). Patients with CR survived longer (median 40 mos) than with no CR (10 mos) ($p < 0.01$). At last FU 26 (21%) pts were still alive: 6 (55%) UICC II; 17 (30%) UICC III; 3 (6%) UICC IV ($p < 0.01$). Univariate analysis revealed the following prognostic parameters for CR: UICC stage ($p < 0.001$), primary location, single and total RT dose > 40 Gy (all $p < 0.05$), while sex, age and histology had no impact. In multivariate analysis the UICC stage was the single prognostic factor.

Conclusion: RT is an effective therapy for UICC stage II–IV malignant melanoma.

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ORAL

Role of lymph node dissection in malignant melanoma – New aspects

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The prognosis of established lymph node metastasis, elective lymph node dissection and its potential as a staging procedure, and the technique of sentinel node biopsy are the most important aspects of lymph node dissection in malignant melanoma.

Prospectively gathered data of 879 elective (ELND) and 265 regional lymph node dissections (RLND) during 1967 and 1994 were analysed.

With rising tumor thickness the incidence of lymph node metastases (l.n.m.) increased (ELND: 1.51–3 mm 11.1%, > 4 mm 22.1%; RLND: 1.51–3 mm 74%, > 4 mm 93%). Simultaneously, the interval until the development of l.n.m. decreased (< 3 mm: 47%, > 3 mm: 74% within 2 years). Micrometastases were significantly more frequent following ELND (44.9% vs. 3.5%), while the number of positive lymph nodes was higher following RLND (> 3 l.n.m. 18.3% vs. 46%). If lymph node metastasis had occurred, the prognosis of malignant melanoma deteriorated by 20% to 50%, depending on the extent of metastasis in the individual case. The prognosis following ELND in case of l.n.m. was significantly better than after RLND (pN+: 10-yr-survival 51% vs. 23%).

The subgroups who would actually benefit from ELND are yet to be identified. The technique of sentinel node biopsy may be a solution to the problem. Our own experience with this procedure confirmed the possible identification of the sentinel node in 80–90%. However, this method needs further evaluation. Recently, first studies have identified subgroups of nodal positive patients who would profit from adjuvant chemioimmunotherapy. Therefore, lymph node dissection as a staging procedure has to be discussed in the future.