1039 RADIOTHERAPY LATE EFFECTS ON NORMAL TISSUES AMONG PATIENTS TREATED FOR A LARYNGEAL CANCER : EVALUATION ACCORDING TO THE SUBJECTIVE, OBJECTIVE, MANAGEMENT AND ANALYTIC SCORING SYSTEM

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Purpose: An optimal therapeutic ratio requires the maximal tumour control compatible with the minimal late effects on normal tissues (LENT).We tested the scoring system proposed by the RTOG/EORTC in a retrospective way among patients previously irradiated for a larynx cancer and considered with non evolutive disease.

Materials and Methods: 177 patients were included with a sex ratio M/F of 4.5 and aged from 35 to 91 years (mean=63). Sites were 39% supraglottis, 60% glottis and 1% subglottis. Histologies consisted of epidermoid carcinomas in 92% (mainly well to moderately differenciated) and 8% in situ were present. A large majority of tumours were localized: T1=102, T2=38, T3=24, T4=14 and cervical nodes were rare: N0=87%, N1=3%, N2=9%, N3=1% (TNM classification 1987). All patients have been treated according to similar modalities by the same team: gamma rays of Cobalt, 2 lateral opposite and parallel portals, 4 Grays at each session to the Treated Volume (ICRU 50), 12 fractions over 4 weeks splitted by a 15 days rest at mid-treatment time, Biologically Effective Dose of 112 for long term tolerance (alpha/beta=3). Radiotherapy late effects on normal tissues have been quantified with the SOMA (Subjective, Objective, Management and Analytic) scale. Evaluation was performed by a multidisciplinary staff and routinely included clinical and fibroscopic examination with CT and MRI if needed. Prevalence of side-effects was assessed once only for each individual patient at first attendance for follow-up control during the study period. Scoring intervened at times from treatment extending from 6 months to 11 years (mean 52 months, median 38 months). Statistical interpretation of data was made with Statview 4.05 (Abacus Concepts Inc. USA) depending of analyzed populations and variables categories.

Results: Globally, 69% of patients present no late effects, 22% have minor sequela (grade 1), 7% moderate (grade 2), 1% serious (grade 3) and one patient over 177 suffers a grade 4 complication. Distribution of toxicity by patient shows 1 manifestation in 41 cases, 2 in 11 cases and 3 in 3 cases. Larynx (83%), skin and subcutaneous tissue (14%), muscle and soft tissue (3%) are the sites at risk for damage. The prevalence and degree of complications vary at random with time after radiotherapy (R square=0.015). Risk factors for late effects have been individualized: supraglottic site (59% absence of LENT) versus glottic site (76% absence of LENT) (p=0.02), T3-T4 primary tumour (LENT score 0.095) versus T1-T2 (LENT score 0.048) (p=0.2) and treatment field surface higher (LENT score 0.079) or lower (LENT score 0.037) (p=0.01) than the median value (44 cm square). Post-treatment persistant tobacco addiction exerts an adverse influence on long term tolerance (LENT score 0.084 versus 0.039) (p=0.02). Nimorazole (1.75 g/msq) given to 73 patients before each irradiation session did not sensitize normal tissues. Post-operative radiotherapy after incomplete surgery (laser: 17 cases, partial laryngectomy: 5 cases) has been as well tolerated as primary exclusive radiation treatments.

Conclusion: A retrospective evaluation among patients irradiated for a larynx cancer has shown the practicability and the suitability of the SOMA scale as well as its value as a quantification tool. Besides the known importance of the field size for LENT prevalence emerges the risk factor of persistant smoking addiction.

1040 TREATMENT RESULTS FOR PATIENTS TREATED WITH COBALT AND 6 MV IN HEAD AND NECK CANCERS

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Purpose: Since 1992, our head and neck patients are treated on 6 MV linear accelerator instead of being treated with cobalt. The aim of the study is to evaluate the impact of this on neck control, particularly on postoperative patient in which subcutaneous tissues are at risk.

Method : A retrospective study including all the 1560 consecutive patients treated between 1989 and 1997 at L'Hotel-Dieu de Québec. Patients receiving less than 50 Gy were excluded. 1451 patients were available for analysis.

Results: Radical radiotherapy: The 549 patients treated with 6 MV had a local control (LC) of 72% vs 62% for the 432 cobalt patients (p=0,02). Patients treated with 6MV had a better LC independently of other variables (p=0.03, COX model). The neck control was similar for cobalt and 6 MV when stratified for N-Stage. Post-operative: The LC was better for the 259 6-MV (87%) vs 80% for the 211 cobalt (p=0.02 and 0,05 in a COX model). For the neck control, the patients were divided into low and high risk. In the 288 low-risk patients, neck control was better for the 6 MV group (94% vs 87%, p=0.07, Wilcoxon). Among the 182 high risk patients (Extracapsular extension (EEC), 2 nodes and T4), 78 patients were treated with cobalt and 97 with 6 MV. The neck control was higher for the cobalt group (79%) vs 60% for the 6-MV group (p=0.09). In a Cox model including stage T and N, EEC, tumor size, node number and LC (as a time-dependant co-variate), Cobalt lead to a better neck control (p=0.03). In the group of patients with EEC, the neck control was 80% for cobalt vs 45% for 6 MV (p=0.05). In patients with 2 nodes, the neck control was 90% for cobalt vs 58% for 6 MV (p=0.02).

Conclusion: In high risk post-operative patients for neck relapse, 6 MV is inadequate to treat the neck. We recommend that a bolus should be added or a beam spoiler. We could not recommended to treat head and neck patients with cobalt since the local control appears to be better with 6 MV.

1041 CARCINOMA IN SITU OF THE GLOTTIC LARYNX- RESULTS OF TREATMENT WITH RADIATION THERAPY

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Purpose: Carcinoma-in-situ (CIS) of the glottis is a precancerous lesion of the vocal cords which frequently progress to invasive disease if untreated. Treatment approaches include vocal chord stripping, radiation therapy (RT) and laser excision. The purpose of the this analysis was to assess the efficacy and safety of a standard RT regimen in the treatment of this condition.