Results: Repeated surgery never achieved a definitive cure, and a temporary biochemical remission (5 months) occurred only in 1 case. Initial surgery significant reduced calcemia (36±5.9%) and PTH levels (79.7±13.5%, $p < 0.05$), although all patients persisted or recurred. In case of repeated surgery, the first and second reoperations significantly reduced serum calcium (22.4±6% and 13.7±3%, respectively) and PTH levels (80.5±6% and 69±7%, respectively; $p < 0.05$), but the reduction became not statistically significant (P = NS) after the second reoperation. The first reoperation was less effective in reducing the serum calcium levels than initial surgery ($p = 0.005$), while no differences were found for PTH levels ($p = 0.91$). The second reoperations were progressively less effective in reducing both calcemia and PTH levels ($p = 0.03$ and 0.04, respectively), while no difference were found between further operations.
Conclusions: Repeated surgery is effective to achieve significant biochemical palliation; although it is never followed by definitive cure. Initial surgery achieve the best results, because reoperations became progressively less effective. For these reasons, in case of recurrent PC, the use of other adjuvant treatment (calcimimetic agents) should be considered in addition to repeated surgery.

1036 POSTER

The treatment result of hypopharyngeal cancer

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Introduction: To evaluate the treatment result of hypohpyarngeal cancer and find the prognostic factors.
Material and Patients: There were 430 hypopharyngeal cancer received treatment in Chang Gung Memorial Hospital from January 1994 to May 2004. Four hundred and seventeen (96%) patients are male and the median age is 56 ranging from 15 to 87. The majority (88%) of patients had habits of smoking, 73% of patients alcohol drinking and 51% of patients had betal quid chewing. The stage distribution is stage I: 4(0.9%), stage II: 20(4.7%), stage III: 57(13.3%) and stage IV: 349(81.2%). Thirty five patients refused radical treatment so there were 395 patients entering analysis. Eight one (20.5%) patients received radical surgery and the others (79.5%) received organ preservation treatment.
In organ preservation patients, 46 patients received radiotherapy alone; 156 patients received chemotherapy then radiotherapy and 112 patients received concomitant chemoradiotherapy.
Result: The 5-year disease specific survival for stage I, II, III and IV were 67%, 74%, 44% and 20% respectively ($p = 0.000$). Patients received radical surgery first or organ preservation treatment did not have significant difference in disease specific survival. The 5-year survival for radical surgery and organ preservation are 31% and 34% respectively. Patients who received concomitant chemoradiotherapy had 61% of chance for organ preservation but only 52% for those patients who received induction chemotherapy.
Discussion: The majority of hypopharyngeal cancer is stage IV disease. There was no survival difference between organ preservation and radical surgery. It may hint that organ preservation may be considered for hypopharyngeal cancer patients.

1037 POSTER

Management of medullary thyroid carcinoma

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Aim: To establish the optimal treatment modality for Medullary thyroid carcinoma.
Material and Methods: 182 patients have been treated for Medullary Thyroid Carcinoma at the NNBRCRC. 142 out of them were followed-up for 5 years and more. As per the TNM the patients had the following stages of disease: $T_1N_0M_0 - 7$, $T_2N_0M_0 - 13$, $T_3N_0M_0 - 19$, $T_0N_1M_0 - 4$, $T_1N_1M_0 - 11$, $T_2N_{1b}M_0 - 13$, $T_2N_{1b}M_0 - 2$, $T_3N_{1a}M_0 - 47$, $T_3N_{1b} - 20$, $T_4N_{1a}M_0 - 9$, $T_4N_{1b}M_0 - 19$, $T_{3-4}N_1M_1 - 8$.
The results of treatment of patients with regional metastases were analyzed. 69 patients underwent surgical treatment. Combined treatment including surgery + pre- or post-operative radiotherapy of 40 to 70 Gy was administered to 65 patients. Palliative radiotherapy was administered in 36 patients having inoperable disease. Chemotherapy was administered in 18 patients. Chemotherapy included different combinations of adriblastin, bleomycin, cyclophosfamide and cisplatin. At least two cycles of treatment was given to each patient.
Results: In the group of patients who underwent surgery alone, 60.9% are alive for five or more years; combined treatment with preoperative radiotherapy – 61.5%; combined treatment with postoperative radiotherapy – 57.7%. The difference between these figures are statistically non-significant. In the group of patients who were border-line operable, this figure was 28.2%. Palliative effect was attained in 11% cases. Only one patient responded to chemotherapy.
Conclusions: Surgery is still the main modality of treatment of medullary thyroid cancer. Radiotherapy has restricted indications namely border-line operable cases – established microscopically or macroscopically or palliative and symptomatic treatment of inoperable forms of tumor spread like bone metastases. Chemotherapy is so far a tertiary option and new drugs and or/new combinations are needed to be tested.

1038 POSTER

Effect of zinc on improving mucositis and dermatitis caused by radiotherapy of head and neck cancer – results of randomized study

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Purpose: Zinc is known to be very important in the context of metabolic response to injury and wound healing. If zinc can improve the healing of mucositis and dermatitis, patients will be more willing to complete the treatment course, and hopefully, the survival rate will increase.
Materials and methods: Oral zinc adopted in this study was Pro-Z, extracted from bovine prostate, containing amino acid chelated zinc. A double-blind, randomized, placebo-controlled study processed from Jan. 2003 to Aug. 2004. Ninety-seven patients with head and neck cancers received radiotherapy and were enrolled in this study. Among them, 49 patients took 3 capsules of Pro-Z per day during the entire course of radiotherapy while the other 48 patients took 3 capsules of placebo per day.
Results: Patients of both groups are similar in gender, age, body weight, pre-treatment serum zinc, pre-treatment serum transferring. Tumor characteristics such as tumor type, pathology, recurrence and stage are comparable in both groups. About the treatment of both groups, the details are similar also. The patients of placebo arm suffered from grade 2 mucositis and grade 2 dermatitis earlier than those of Pro-Z arm ($p = 0.017$ and 0.014, respectively). Between patients of those 2 groups, there was also significant difference in the development of grade 3 mucositis ($p = 0.003$) and grade 3 dermatitis ($p = 0.0092$). The mucositis and dermatitis were milder on patients of Pro-Z arm (both $p = 0.003$). Though the milder mucositis and dermatitis, patients of Pro-Z arm were unable to receive more courses of weekly concurrent chemotherapy than those of placebo arm ($p = 0.46$). The weight loss among both groups was similar ($p = 0.44$). The common side effects of zinc, such as gastrointestinal discomfort, did not occur in all the patients.
Conclusion: During the period of radiotherapy, severe mucositis and dermatitis developed later and milder on patients with zinc supplement than on those without zinc. However, the weight loss and courses of weekly concurrent chemoradiotherapy were not different significantly between patients who took Pro-Z and those who didn't. In this randomized study, Pro-Z is promising in the improvement of radiation mucositis and dermatitis. But it's impact on treatment results such as local control and overall survival is under further investigated.

1039 POSTER

Submandibular gland sparing using intensity modulated radiotherapy (IMRT) for head and neck cancer: Effect on the basal saliva flow and clinical symptoms of xerostomia

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Background: We evaluated the effect of submandibular gland sparing achieved by intensity modulated radiotherapy (IMRT) on the basal salivary flow rate and the symptoms of xerostomia at 6 and 12 months following completion of radiation therapy for head and neck cancer.
Methods: 35 patients with head and neck cancer were treated with IMRT between July 2000 and April 2004. The mean age at study entry was 53 years (range, 29 to 78), and 17 were male. Patients were required to have normal salivary gland function at study entry. Eight patients had nasopharyngeal and 27 oropharyngeal cancer. Five patients had stage II, 5 stage III, 22 stage IVA, and 3 stage IVB tumor at presentation.
Nineteen patients received postoperative RT and 16 definitive chemo-RT with concurrent cisplatin, either 40 mg/m^2 once weekly ($n = 9$) or 100 mg/m^2 ($n = 7$) on days 1, 22 and 42 of the radiation course. All patients received a minimum total dose of 50 Gy with 2 Gy daily fractions to the primary tumor site and the locoregional lymph nodes (PTV1),