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POSTER

Membrane type 1 matrix metalloproteinase (MT1-MMP) immunoexpression in squamous cell carcinoma of the larynx – correlation with morphological tumor features

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Background: Matrix metalloproteinases (MMPs) are capable of degrading components of the extracellular matrix. MMPs have been implicated as playing an important role in cancer invasion and metastases. MMPs have been identified in a various malignancies including head and neck squamous cell carcinomas. The aim of this study was to investigate MT1-MMP expression in squamous cell carcinoma of the larynx to relate expression to morphological features of the tumor and lymph nodes and 3- and 5-year survival.

Material and Methods: We investigated immunoexpression of MT1-MMP in 22 patients with laryngeal cancer surgical treated in ENT Department Medical University of Łódź between 1998 and 1999. The expression was evaluated immunohistochemically using monoclonal antibodies anti-MT1-MMP.

Results: Positive MT1-MMP expression in 68.2% cases was observed. Immunoexpression of MT1-MMP in advanced laryngeal carcinoma as indicator for 3-year survival was noted. In addition, levels of staining correlated with number of mitoses in tumor front and plasmocytolymphatic infiltration in its environment.

Conclusion: The expression of MT1-MMP in tumor front appears to play an important role in determining prognosis in patients with carcinoma of the larynx.

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POSTER

Neoadjuvant chemotherapy and radiotherapy compared with radiotherapy alone in early stage nasopharyngeal carcinoma

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Background: To analyze the impact of neoadjuvant chemotherapy on the treatment of early-stage nasopharyngeal carcinoma (NPC) as compared to radiotherapy alone.

Materials and Methods: We analyzed retrospectively the outcome of 58 previously untreated and histologically confirmed early-stage NPC patients treated with either radiotherapy (RT) alone or with neoadjuvant chemotherapy followed by radiotherapy (CT/RT) at the Seoul National University Hospital between 1986 and 2003. Neoadjuvant chemotherapy consisted of two to three cycles with 5-fluorouracil and cisplatin. RT was given to the nasopharynx and neck nodes. The median dose to the primary site, involved nodes, and elective nodes was 70.2 Gy, 63 Gy, and 45 Gy, respectively. According to the 1997 AJCC staging system, 6 patients had stage I disease and 24 patients had stage II disease in the RT group. For the CT/RT group, 6 patients had stage I disease and 22 patients had stage II disease. The median follow-up duration for all patients was 103.5 months.

Results: The 5-year overall survival rate (OS), disease-free survival rate (DFS), and distant metastasis free survival rate (DMFS) was 86%, 80%, and 93% for the RT group and 82%, 69%, and 85% for the CT/RT group, respectively. There was no statistically significant difference in OS ($p = 0.514$), DFS ($p = 0.553$), and (DMFS) ($p = 0.463$). N stage was the only significant prognostic factor for the disease free survival rates ($p = 0.033$).

Conclusions: In our retrospective analysis, the use of neoadjuvant chemotherapy showed no additional benefit to treatment with radiotherapy alone. Treatment options should be examined in a large controlled randomized study.

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POSTER

Parathyroid carcinoma managed successfully with minimally invasive surgery

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Cancer of the parathyroid glands is thought to be rare, accounting for <1% of cases of primary hyperparathyroidism. It is anecdotally stated an endocrine surgeon should encounter one throughout his/her working career. Our unit however has successfully treated three cases in the past few years.

Each patient underwent preoperative localization of the gland using ultrasound or radioisotope scanning. A 5 cm collar incision was made across the midline, and focused unilateral dissection carried out. En bloc resection of the parathyroid as well as the ipsilateral thyroid lobe and lymphadenectomy was performed. The decision to perform en bloc resection was based on atypical intra-operative features such as the size, vascularity, and fixity of the gland. Pre- and post-operative serum calcium (Ca^{++} , in mmol/l), and parathyroid hormone (PTH, in pmol/l), was measured in all patients.

All patients made an uneventful recovery and were discharged within 48 hours. The three cases are summarized in the table below. Complete oncological clearance was confirmed histologically in all three patients. All patients are recurrence-free to date.

Case	Patient	Symptoms	Pre-op Ca^{++} (PTH)	Localisation	Gland	Post-op Ca^{++} (PTH)
1	51 yr, female	Malaise, renal colic	3.47 (80)	Sestamibi	Right inferior	2.39 (18)
2	55 yr, female	Vomiting, thirst, lethargy, constipation	3.94 (57.4)	Palpable, Ultrasound	Left inferior	2.34 (8)
3	31 yr, female	Renal colic	3.7 (116.6)	Ultrasound, Sestamibi	Left inferior	2.55 (7.2)

Sixty patients have undergone minimally-invasive parathyroidectomy for hyperparathyroidism under our care over the past four years. Three patients (5%) had malignant primary hyperparathyroidism. These three had en bloc resection which is generally accepted as giving the best curative chance. We suggest that surgeons performing parathyroidectomy need to have a high index of suspicion of malignancy where the gland has an unusual appearance, and be willing to revert to en bloc resection.

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POSTER

Adjuvant concurrent chemoradiation after laser surgery for locally advanced head and neck cancer

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Background: Postoperative chemoradiation (CRT) has become the standard treatment for locally advanced squamous cell head and neck cancer. The aim of this study was to evaluate the efficacy and toxicity of adjuvant CRT administered with curative intent and functional organ preservation, after laser surgery.

Patients and Methods: Between October 2000 to January 2004, 66 eligible patients (pts) with locally advanced head and neck squamous cell cancer (SCCHN) were entered in this study and were treated with concurrent cis platinum CRT after laser surgical resection of the primary tumor and selective neck dissection. There were 64 men and 2 women with a median age of 63 years (range 46–80). Primary sites included were, larynx 40, oropharynx 22 and hypopharynx 4 pts. Disease stages were: Stage III 36 pts and Stage IV 30 pts. All patients received 30 mg/m² cisplatin weekly concurrently with external beam 3D conformal radiation treatment, with multileaf linear accelerator. The total radiation dose ranged between 60–66 Gy (2 Gy daily, 5 days/week) depending upon the site, the extent of the disease, the surgical excision and the pathology report. The primary tumor site and the neck lymph nodes were delineated according to the preoperative radiological evaluation. The treatment fields encompassed all structures at risk. The primary endpoint of the study was locoregional control and the secondary endpoints were toxicity assessment, disease free survival and overall survival.

Results: The median follow up of the pts was 18 months (range 2–60 months). Pts had a 2 year locoregional control rate of 78% and disease free survival rate of 63%. Functional larynx preservation was possible in 36 pts (90%). All patients were monitored during CRT and toxicities were graded according to RTOG radiation scoring criteria. Grade 2 and 3 acute mucositis was present in 45 pts (68%) and 12 pts (18%) respectively. None of the patients discontinued treatment. Grade 2 xerostomia was present in 38 pts (57%) 2 months after the end of CRT.

Conclusion: Adjuvant concurrent chemoradiation after laser surgery for locally advanced SCHNC with weekly schedule of single agent cisplatin is feasible, well tolerated, remains an effective treatment and resulted in

locoregional control similar to those reported for radical surgery followed by radiotherapy, offering to the vast majority of the patients functional organ preservation.

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POSTER

Intensity modulated radiotherapy for oropharyngeal and hypopharyngeal cancers: a short-term result

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Background: To assess a short-term treatment result and toxicities of intensity modulated radiotherapy (IMRT) for oropharyngeal and hypopharyngeal cancers.

Materials and Methods: Between 2002 and 2006, we treated a total of 44 patients with squamous cell carcinomas of the oropharynx (19) and the hypopharynx (25) by IMRT. *Patient characteristics:* Gender: M/F = 40/4. Median age: 64 years (34–81), Performance status: 0/1/2 = 31/13/0. For oropharyngeal cancer (OPC), T1/2/3/4 = 5/9/3/2, N0/1/2a/2b/2c = 7/2/1/8/1, and clinical stage (UICC 2002) I/II/III/IVa/IVb = 1/5/3/9/1. For hypopharyngeal cancer (HPC), T1/2/3/4 = 10/11/3/1, N0/1/2a/2b/2c = 9/3/1/8/4, and I/II/III/IVa/IVc = 5/3/3/13/1. In totals, 24 of 44 patients (54%) had stage IV diseases. A planned neck dissection was also done in 64%. IMRT was performed with 4–6 MV X rays of 7 coplanar beam arrangements using a dynamic MLC technique. All patients were initially treated with a whole-neck IMRT of 44–54 Gy/22–27 fractions. At 40 Gy, CT scans were obtained again to make a boost IMRT plan targeting to the primary lesions and high-risk nodal regions to the total dose of 66–70 Gy/33–35 fractions. Twenty-eight patients (63%) received concurrent chemotherapy, such as weekly infusions of docetaxel (15 mg/m²) or 2–3 courses of cisplatin (80 mg/m²). Local tumor responses were assessed by fiberoptic and radiological examinations. Survival results were analyzed by the Kaplan-Meier method. Treatment-related toxicities were evaluated according to the Common Toxicity Criteria, version 3.0.

Results: Complete responses were achieved in 40 of 44 patients (91%). The 2-year local relapse-free survival rates were 89% and 46% for OPC and HPC, respectively. Salvage surgery was required in 4 cases of local recurrence and a neck dissection was done in a case of nodal recurrence. The corresponding 2-year overall survival rates were 83% for stage I-III and 90% for stage IV of OPC, and 85% for stage I-III and 27% for IV of HPC. The maximum acute dermatitis was G3: 6 cases (14%), Acute mucositis was G3: 22 (50%) and G4: 1 (2%). Higher mucosal reactions were observed with docetaxel significantly than with cisplatin. Xerostomia was observed G2: 14 (33%) at 3 months and 7 (21%) at >12 months after the initiation of IMRT.

Conclusions: The IMRT with concurrent chemotherapy produces promising local control and survival results for OPC and HPC with acceptable toxicities. Parotid gland sparing is also achievable with IMRT.

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POSTER

The potential for sparing the parotid glands with helical radiotherapy

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Purpose: Radiotherapy for head and neck cancer patients causes distressing complications of which xerostomia – due to irradiation of the salivary glands – has the highest adverse effect on the quality of life. The aim of the current study is to investigate the potential of helical tomotherapy to preserve the parotid glands function.

Methods and Materials: The study includes patients with a head and neck cancer treated with helical tomotherapy (Hi-art Tomotherapy®) at the UZ Brussel. During planning, the highest priority is given to a satisfying PTV coverage: at least 95% of the prescribed dose must be delivered to at least 95% of the target. A dose of 70.5 Gy (2.35 Gy/fraction) is prescribed to the primary tumor and the pathological lymph nodes. The elective node regions receive 54 Gy (1.8 Gy/fraction): a simultaneous integrated boost scheme is used. If possible the mean dose to the parotid gland is kept below 26 Gy. Seven patients with a follow up of 12 months are evaluated. To assess the function of both parotids a salivary gland scintigraphy was performed before (baseline) and every 4 months after radiotherapy.

Results: There was a significant dose-response relationship between the mean dose (Gy) given to the parotid gland and the functional recuperation. If the mean dose is kept below 33 Gy a recuperation at least 12 months of 80% can be expected (p = 0.0001).

There is also a significant correlation between the salivary excretion (SE) and the percentage of parotid gland that received a dose <26 Gy (V26%).

To have a SE of 80%, 49% of the parotid volume should receive a dose less than 26 Gy (p = 0.002).

Conclusion: Not only the delivered mean dose but also the volume percentage that receives a dose <26 Gy is important. By using helical tomotherapy the parotid gland function can be preserved in many cases.

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POSTER

Stage III-IV sinonasal and nasal cavity carcinoma treated with 3D-conformal radiotherapy

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Purpose: To report the dosimetric data and clinical outcomes of patients with advanced neoplasm of the paranasal sinuses and nasal cavity, treated by three-dimensional conformal radiotherapy (3D-CRT).

Methods and Materials: Between 2000 and 2005, 31 consecutive patients were treated for locally advanced tumors of paranasal sinuses and nasal cavity. All patients underwent conformal radiotherapy, with or without surgery and chemotherapy.

Results: The median follow-up was 42 months. 5-year local tumor control, disease-free survival, overall survival and disease-specific survival actuarial rates were 60%, 48%, 56% and 70% respectively. 5-years local control and overall survival rates for patients treated with RT +/- CT were 30% and 25%. Local recurrence was the most common site of failure. Dosimetric data are reported.

Conclusion: The local control rate for these tumors remains low. The prognosis depends on localization, tumor stage and treatment modality. 3D-CRT reduces the risk on optical pathways but doesn't modify outcomes.

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POSTER

Video-assisted thyroidectomy with sentinel lymph node biopsy

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Introduction: The study was aimed to assess the feasibility of minimally invasive surgery for thyroid tumours.

Materials and Methods: In our centre 129 patients with benign and malignant thyroid tumours underwent video-assisted surgery. There were 111 women and 18 men (median age 41 years). Preoperative pathological findings: papillary/follicular adenoma – 75, high-grade differentiated early (T1–T3N0M0) – 34. The extent of surgical procedure was hemithyroidectomy + isthmusectomy in 116 patients, thyroidectomy with sentinel lymph node biopsy after preliminary lymphography in 13 patients. Micrometastases of papillary thyroid cancer in sentinel nodes were found in 7 cases. In all cases thyroidectomy was done extracapsularly. Surgical incision (length 2–2.5 cm) was made ipsilaterally and parallel to the posterior of sternocleidomastoid muscle in the medium third of the neck.

Results: The incision described above ensured sufficient operation space, making it possible to perform either type of surgery. We observed no intraoperative complications. Immediate complications included mild hoarseness of the voice in 3 (3.87%) patients and hematoma in 1 (1.29%) patient. Hoarseness disappeared within 7 days after surgery, hematoma was handled conservatively. In all cases surgical margins were negative on pathological examination. The median operation time was 45–60 minutes, median hospital stay was 3 days.

Conclusions: Minimally invasive surgery with sentinel lymph node biopsy used for treatment of thyroid cancer does not compromise oncological radicality and ensures good cosmetic outcome.

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POSTER

Follicular carcinoma thyroid with bone metastasis – a dismal look but a call towards more drug research

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Background: In carcinoma thyroid with bone metastasis, follicular carcinoma thyroid is the commonest and females are most commonly affected.

Aim: To review bone metastasis among follicular carcinoma thyroid patients and the role of Iodine 131 ablation.

Patients and Methods: We have gone through the inpatient and outpatient records of patients who have bone metastases among follicular carcinoma thyroid for the past 15 years. The diagnosis was made either by I-131 scans or x-rays. All of them had total thyroidectomy except one. There were 684