

## HEAD & NECK SURGERY

### HN01 LARGE PERI-AURICULAR CARCINOMA RESECTION WITH KEYSTONE DESIGN PERFORATOR ISLAND FLAP (KDPIF)

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Large peri-auricular carcinoma resection with Keystone Design Perforator Island Flap (KDPIF)

**Purpose** Due to the surrounding anatomy, peri-auricular tumours can be difficult surgical resections and reconstructions. Acceptable resection margins may be difficult to obtain while trying to retain vital structures. The aim of this study was to analyse extent of surgery, pathological findings and adjuvant therapy, and how they impact on outcome and survival.

**Methodology** Patients with squamous cell, basal cell, melanoma and other of the peri-auricular area were reviewed that underwent large surgical resection and reconstruction with KDPIF. Outcomes were defined as mortality, recurrence and flap failure. Patients were followed for a minimum of 2 years.

**Results** This series contained 100 patients, 69% were squamous cell carcinoma. Median age was 76 years. All underwent radical surgical resection involving either parotidectomy/other procedure with/without bone removal, and KDPIF reconstruction. 31% had positive margins, 26% had a neck dissection and 60% had post-op radiotherapy and/or chemotherapy. Mortality from disease at 2 years was 9%.

**Conclusion** Our results suggest that a positive pathological margin is not an independent predictor for poor disease control as suggested by O'Brien et al, and that despite advanced age and disease, this population achieved low recurrence and high survival rates.

O'Brien CJ et al. significance of clinical stage, extent of surgery, and pathological findings in metastatic cutaneous squamous carcinoma of the parotid Head Neck 2002; 24:417–422

### HN02 PATIENT RESPONSES TO THEIR MULTIDISCIPLINARY HEAD AND NECK CLINIC VISIT

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**Purpose** To prospectively assess the subjective experience of patients and the degree of benefit they felt they gained from attending the Multidisciplinary Head and Neck Clinic (MDHNC).

**Methodology** An internally validated questionnaire of patient responses to their experiences at the MDHNC was implemented prospectively. Data were gathered between May and September 2006. The questionnaire consisted of 36 questions, addressing 3 components of the clinic; before, during and after attendance. Twenty four of 48 questionnaires were completed.

**Results** Patients' experiences of the clinic were mainly positive. All patients reported feeling adequately informed about both illness and their treatment options. No patients left with unanswered questions. All, but one patient, tolerated the examination well, although 4 patients were unprepared for the number of people present at the clinic. Twenty two patients especially valued the post-clinic discussion with their specialist. Five patients felt that insufficient information about treatment choice was provided to their family. No discrepancy between internal validation questions was recorded.

**Conclusion** Patients expressed a high level of appreciation for the care provided in the multidisciplinary clinic. Contrary to our expectations, patients generally did not mind examination in the presence of a large number of clinicians. Most patients reported particularly valuing the discussion with the treating specialist after the clinic visit. Reducing waiting times, providing clearly written plans for treatment resulting from the clinic, and distributing more information to assist individuals accompanying patients, emerged as target areas for future improvement.

### HN03 METASTATIC PAROTID SQUAMOUS CELL CARCINOMA: A FACIAL NERVE PRESERVATIVE APPROACH

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**Purpose** Metastatic squamous cell carcinoma is the most common parotid malignancy in Australia. Excising the primary carcinoma with parotidectomy of involved lymph nodes is a potentially curative option.

**Methods** Retrospective audit of one surgeon's experience in a ten year period was carried out to validate the approach. Analysis of recurrence and survival was carried out.

**Results** We looked at 183 patients ages ranging from 43–98 (Av age 77.7, SD 11.1, Mean 80). 169 (92%) underwent primary resection, 15 (8%) had palliative radiotherapy. Of the surgical group, 53 were T1, 80 were T2, 14 were T3 and 20 were T4, with two patients staged as Tx. At surgery, 20 (12%) had facial nerve sacrifice. For patients 2 years post surgery, the disease free survival was 53%, with mean time to recurrence 386 days. Patients with facial nerve sacrifice recurred locally in 34% of cases with mean time to recurrence of 281 days, those with facial nerve preservation recurred in 23% with mean time to recurrence 416 days. We found patients with node negative necks had recurrence in 18% (31% node positive) and mortality of 15% (vs 28% node positive).

**Conclusion** In spite of elderly mean age and large number of patients with advanced disease we achieved very high local control and survival rates. Preserving the facial nerve except when passing through cancer resulted in no decrease in local control or survival. Nodal disease was a predictor of prognosis in contrast to previous studies.

### HN04 GENETICS OF HEAD AND NECK PARAGANGLIOMA

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Paragangliomas (PGL) of the head and neck are rare tumours derived from neural crest origin that occur in both sporadic and hereditary forms. Genetic predisposition to paraganglioma affects up to 50% of all patients with head and neck paraganglioma. Patients with familial paraganglioma tend to present at a younger age and with multiple tumours. In the past, familial cases were attributed phenotypically to particular groupings, such as PGL type 1. Recent advances have identified mutations in genes encoding the three SDH subunits (SDHB, SDHC, SDHD) as responsible for the majority of familial head and neck paraganglioma. Succinate dehydrogenase is a mitochondrial enzyme complex with an important role in both the Krebs' cycle and the mitochondrial electron transport chain. These mutations lead to the overexpression of several hypoxia-inducible genes resulting in cellular proliferation and the development of paragangliomas. Understanding the relationship between mutations of SDHB, SHDC and SDHD and clinical manifestations of familial paraganglioma is important in the management, genetic testing and appropriate genetic counselling of individuals.

### HN05 AN ANALYSIS OF COMPLICATIONS FOLLOWING SURGICAL TREATMENT OF BENIGN PAROTID DISEASE

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The purpose of this study was to review the incidence of and risk factors for, developing complications following parotidectomy for benign disease. In an 11 year period, 162 parotidectomies were performed for benign disease, the commonest being PSA (43%), Warthin's (30%) and sialadenitis (22%). There were 71 males/91 females, mean age was 58 years and 79% presented with a painless mass of 26 months. 134 patients underwent a superficial parotidectomy and the mean follow-up was 23 months. Post-operatively 40% developed a temporary facial palsy, 11% had Frey's syndrome and 10% developed a salivary fistula. Sialadenitis was a significant risk factor for the development of facial nerve palsy ( $p < 0.01$ ) and increased the risk of salivary fistulae.

Parotid duct ligation increased the risk of nerve palsy in the distribution of the zygomatic and buccal branches. Operations for Warthin's tumour were associated with an elevated risk of dysfunction of the cervical branch of the facial nerve. Half of the patients had intra-operative facial nerve stimulation and this uninfluenced the likelihood of facial paresis. The recovery of facial nerve function showed a biphasic distribution, with 90% of patients having normal function within 12 months, followed by a slower recovery rate for up to two years. In conclusion, the incidence of post-operative complications was influenced by the pathology, with inflammatory lesions significantly increasing the risk of facial nerve dysfunction and other complications, but also by variations in surgical practice, such as parotid duct ligation. Overall, the incidence of permanent facial palsy was under 2%, but a temporary nerve palsy was common at 40%, with most patients regaining normal function within one year of surgery.

#### HN06 THE ISOLATED PAROTID NODULE – A VALIDATED STUDY

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There is no universal consensus of opinion with regard to the sensitivity and specificity of utilisation of combined fine needle aspiration cytology and frozen section analysis in the management of isolated nodules of the parotid gland. To our knowledge no more than two studies, with a minimum of 100 patients included, have analysed this topic over the past forty years (1, 2).

A retrospective case note review was performed in a tertiary centre between the years 1975–2005 of 173 consecutive patients who underwent both a pre-operative fine needle aspiration and a per-operative frozen section analysis of isolated parotid gland nodules.

The aims of this study were three fold. Firstly, to examine the sensitivity/specificity of the above combined investigations with regard to the ability to correctly define a lesion as benign or malignant pre- and per-operatively. Secondly, to examine the sensitivity/specificity of the above combined investigations with regard to the ability to achieve a correct diagnosis within either the benign or the malignant group. Thirdly, to calculate the predictive values and diagnostic likelihood ratios in order to provide a practical management algorithm for these lesions.

#### References

1. Tew S., Poole A.G., Philips J. Fine-needle Aspiration Biopsy of Parotid Lesions: Comparison with Frozen Section; *Aust N Z J Surg.* 1997 Jul; 67(7): 438–441
2. Megerian C.A., Maniglia A.J. Parotidectomy: A Ten Year Experience with Fine Needle Aspiration and Frozen Section Biopsy Correlation; *Ear Nose Throat J.* 1994 Jun; 73(6): 377–380

#### HN07P CLINICAL EXAMINATION OF THE NECK IN FLOOR OF MOUTH CANCER

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**Purpose** To evaluate the sensitivity and specificity of clinical examination for cervical lymph node metastasis in patients with floor of mouth (FOM) squamous cell carcinoma (SCC). Comparison will be made to published data on other modalities used to investigate cervical metastasis.

**Methodology** A retrospective chart audit was conducted and 53 patients with FOM SCC were included in this cohort. Clinical examination was performed at the initial consultation and from this a TNM stage was established. This was compared to histology reports from operative specimens and the sensitivity and specificity for clinical examination calculated.

**Results** Clinical examination alone for FOM cancer has a sensitivity and specificity of 72% and 77% respectively. The incidence of clinically occult disease in this cohort was 22%.

**Conclusion** Failure to detect and treat occult cervical metastasis significantly affects recurrence and survival. Clinical examination alone failed to detect a significant percentage of cervical metastasis in this cohort. Radiological modalities may improve the detection of clinically occult disease. However, neck dissection and histological examination remains the 'gold standard' as a therapeutic and diagnostic tool.

#### HN08P AUDIT OF 115 CONSECUTIVE PARATHYROIDECTOMIES IN PATIENTS WITH RENAL HYPERPARATHYROIDISM

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**Objectives** To review the characteristics and outcomes of patients undergoing parathyroidectomy for renal (secondary and tertiary) hyperparathyroidism.

**Methods** Review of prospectively collected data from a dedicated head and neck database at RPAH between 1988 and 2004. A total of 115 patients underwent exploratory parathyroidectomy.

**Results** Common indications for parathyroidectomy included hypercalcaemia, renal osteodystrophy, calciphylaxis and calcinosis, bone or joint pain, and pruritus. Sixty-nine patients had subtotal parathyroidectomy (STP), 47 had total parathyroidectomy (TP) of which 4 had total parathyroidectomy with autotransplant (TPA). Ten patients required re-exploration for recurrent hyperparathyroidism at a median time to reoperation of 55 months. Of those, 8 had STP, 1 had TP, and 1 had TPA. Predictors of recurrent hyperparathyroidism included higher post operative PTH level (median of 22.5 pmol/L vs 3.4 pmol/L) and higher total parathyroid weight (median of 7.75 gm vs 2.9 gm). 97% of patients reported resolution of symptoms on follow-up. The average length of hospital admission was 4.4 days. Morbidity of this series included wound infection (0.8%), temporary vocal cord paralysis (0.8%), seizure due to severe hypocalcaemia (0.8%) and neck haematoma requiring evacuation (0.8%).

**Conclusions** Parathyroidectomy is effective in the management of renal hyperparathyroidism. Subtotal parathyroidectomy is associated with a higher re-exploration rate. Predictors for recurrent hyperparathyroidism include total parathyroid weight and post-operative PTH level.

#### HN09P ASSESSMENT OF FREE FIBULAR BONE IN THE RECONSTRUCTED MANDIBLE USING THREE-DIMENSIONAL COMPUTER GENERATED IMAGES

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We report the preliminary results of the Royal Adelaide Hospital experience with multidimensional simulated views of the fibula-flap reconstructed mandible. The free fibular flap is a well recognised option for mandibular reconstruction. What is not well understood however is how the fibula behaves in comparison to the dentate mandible. To date, skeletal remodelling and bone atrophy has only been assessed using standard orthopantomogram films. For many years three-dimensional (3D) computer generated models using data from CT scans have been utilised for craniofacial reconstruction. We proposed that these images will enable us to more accurately visualise the integration of the transplanted graft within the mandible. We recalled and CT scanned patients from 2004 to 2006 that underwent free fibular flaps for reconstruction of mandibular malignancy and performed 3D reconstruction of these images. This is the first reported series of multidimensional computer generated images to assess bone in the reconstructed mandible.

#### HN10P METASTATIC CUTANEOUS SQUAMOUS CELL CARCINOMA TO THE PAROTID GLAND

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**Purpose** With an incidence rate of 300 cases per 100000 population per year, Australia has the highest incidence of cutaneous squamous cell carcinoma (SCC) in the world. Metastatic cutaneous SCC in parotid lymph nodes are aggressive tumours with poor outcomes both in terms of local control and survival.

**Methodology** This study reports a prospective series of 41 consecutive patients with metastatic SCC to the parotid gland in a major teaching hospital in Western Australia over a six-year period from January 2000 to December 2005. Epidemiological, clinical, histopathological and treatment details along with patterns of failure were extracted from the database. The survival and

failure curves were calculated using the Kaplan-Meier method. Univariate and multivariate analysis were performed using Cox regression method.

**Results** The five-year absolute survival is 34.2% and the cancer specific survival 39.5%. Local failure was observed in 11 patients for an actuarial rate of local disease free survival of 65.8% at 6 years. Distant failure occurred in two patients for an actuarial distant disease free survival of 89.5% at 6 years. Both univariate and multivariate analysis failed to find any predictors of local or distant failure with statistical significance.

**Conclusions** Multimodality treatment will still fail to locally control or cure at least a third of patients. Previously identified risk factors were not substantiated in this study and may relate to patient numbers. Parotidectomy and post-operative radiotherapy remain the gold standard. Unlike their cutaneous counterpart metastatic SCC to the parotid gland remains an aggressive tumour with current treatment regimes.

#### **HN11P PRIMARY CHEMO-RADIOTHERAPY FOR NON-METASTATIC SQUAMOUS CELL CARCINOMA OF THE HEAD AND NECK**

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**Purpose** To review our experience of concomitant single agent chemoradiotherapy treatment of locally advanced squamous cell carcinoma of the head and neck (SCCHN).

**Methodology** A retrospective cohort study of 56 patients with advanced SCCHN. Patients were eligible for inclusion if they had been treated with primary concurrent chemoradiotherapy for squamous cell carcinoma of the oral cavity ( $p = 7\%$ ), oropharynx ( $p = 54\%$ ), larynx ( $p = 23\%$ ) or hypopharynx ( $p = 16\%$ ) at the Sydney Head and Neck Cancer Institute between 2000 and 2005. Patients treated previously for this disease, or with other agents (such as 5-FU) in combination with cisplatin/carboplatin, were excluded. Treatment was 80 or 100 mg/m<sup>2</sup> of cisplatin in weeks 1, 4 and 7 of radiotherapy. Percutaneous endoscopic gastrostomy (PEG) feeding tubes were placed in 86% of patients.

**Results** A 90% initial complete response rate was observed. The Kaplan-Meier 3 year projected overall survival rate was 72% and 3-year disease specific survival was 74%. Eleven percent of the patient cohort underwent salvage surgery while 14% required chemotherapy dose adjustments. Twenty percent of patients required unplanned hospital admission for the management of treatment related toxicity.

**Conclusion** Our study affirms that our overall survival rates and treatment related toxicities, using a concomitant chemoradiotherapy protocol are comparable with other institutions. Our initial clinical response rates may reflect our selection criteria and the low percentage of patients requiring dose adjustments. Our low rate of unplanned hospital admissions may be explained by the routine use of PEG tubes to reduce treatment related complications.