

Abstract Session I

Systematic Review and Meta-analysis of Survival Outcomes combining HPV and p16 status in Oropharyngeal cancers

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Evaluating the Role of 18FDG-PET/CT and Subsequent Panendoscopy in Head and Neck Squamous Cell Carcinoma of Unknown Primary

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Retrospective review of patients who underwent gastrostomies after radical radiotherapy in a tertiary referral unit.

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Day Case Open Minimally Invasive Parathyroidectomy (oMIP) for solitary adenoma: Outcomes of Surgery

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Systematic Review and Meta-analysis of Survival Outcomes combining HPV and p16 status in Oropharyngeal cancers

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Introduction

Incidence of oropharyngeal cancers (OPC) has more than doubled in England between 1990 and 2006. Evidence from various studies appears to show improved survival outcomes in HPV positive OPC. There is uncertainty regarding HPV testing, particularly the role of p16. While the majority of HPV cases correlate with p16 positivity, there remain two discordant groups (HPV+/p16- and HPV-/p16+). The prognostic significance of these subgroups is unclear.

Materials & Methods

Two independent reviewers performed a systematic search of various electronic databases including Medline, EMBASE and the Cochrane Library. Initial search terms included all head and neck studies related to HPV and/or p16 as prognostic markers, and identified 279 studies. All studies relating to OPC cases alone were then selected from this cohort, and 7 studies were included in this review.

Results

In total 1318 OPC cases were identified from the 7 studies. There was an average 57% prevalence of HPV. Pooling of all studies showed a strong correlation between HPV status and p16 positivity, as either HPV+/p16+ (46%) or HPV-/p16- (36%). The discordant groups were HPV+/p16- (15%) and HPV-/p16+ (5%). The 4 subgroups had pooled 5-year overall survival of 81%, 32%, 42% and 58% respectively.

Conclusion

This is the first systematic review analysing the combination of HPV and p16 status in relation to survival outcomes. Correlation between subgroups appears to show extreme survival outcomes, with HPV+/p16+ showing an excellent 5-year survival rate compared to HPV-/p16-. However, discordant groups appear to show survival outcomes between these two extremes, with HPV-/p16+ appearing more favourable.

Evaluating the Role of 18FDG-PET/CT and Subsequent Panendoscopy in Head and Neck Squamous Cell Carcinoma of Unknown Primary

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Introduction

Head and neck squamous cell carcinomas of unknown primary (HNSCCUP) accounts for up to 10% of presenting HNSCCs. Identification of the primary site allows for directed therapy. Where initial investigations have failed to locate the primary site, hybrid 18FDG-PET/CT has emerged as a useful tool with improved sensitivity over PET alone. Following PET/CT scan, the role of subsequent panendoscopy +/- biopsy is not as clearly defined. We aim to evaluate and quantify the role of PET/CT and subsequent panendoscopy in HNSCCUP.

Materials & Methods

A retrospective cohort study of patients with HNSCCUP presenting between January 2005 and December 2010 at a regional oncology referral centre was undertaken. All patients who presented with a metastatic neck node and unknown primary who had undergone PET/CT prior to panendoscopy were included. The accuracy of PET/CT was calculated and compared with panendoscopy and histopathological findings.

Results

52 patients were included. There were 27 PET/CT scans suggesting a primary site. Calculated diagnostic parameters were 83% sensitivity, 87% specificity PPV 89% and NPV 80%. Three false positive PET/CT scans were noted after panendoscopy and normal histology. Importantly, three confirmed tongue base tumours were found on panendoscopy, which were undetected on PET/CT.

Conclusion

PET/CT is a highly valuable resource for locating tumours in HNSCCUP. It helps direct biopsy and aids in the detection of local and distant metastases along with synchronous primary tumours. Importantly, due to both false positive and false negative PET/CT rates, panendoscopy and biopsy remains an essential adjunct investigation irrespective of PET/CT results.

Retrospective review of patients who underwent gastrostomies after radical radiotherapy in a tertiary referral unit.

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Introduction

Patients with advanced stage head and neck cancer experience nutritional depletion requiring enteral supplementation. This can be achieved by nasogastric tube or gastrostomy, the latter being more long-term. The aim of this project was to review patients who had gastrostomies following radical radiotherapy at differing levels comparing the length of time feeding was required.

Materials & Methods

Retrospective review of all patients who had gastrostomies after radical radiotherapy over 2 years. A comparison was made on the length of gastrostomy feeding based on the level at which radiotherapy was applied. Patients were followed up for 1 year.

Results

30 patients having radiotherapy at the level of the oropharynx underwent gastrostomy feeding, compared to 10 patients having radiotherapy at the level of the hypopharynx. Analysis revealed there no significant differences in length of gastrostomy feeding between the groups.

Conclusion

There is no significant difference in length of time a gastrostomy is required, based on the level at which radiotherapy is required. Despite claims that radiotherapy is a more anatomically preservative treatment option, the physiological disturbance from radiotherapy at any level results in equal nutrition supporting needs.

Day Case Open Minimally Invasive Parathyroidectomy (oMIP) for solitary adenoma: Outcomes of Surgery

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Introduction

Primary hyperparathyroidism is the commonest cause of hypercalcaemia in the out-patient setting. Eighty percent of which is caused by solitary parathyroid adenoma. Surgical approaches to parathyroidectomy include bilateral neck exploration (BNE), unilateral neck exploration (UNE) and minimally invasive parathyroidectomy (MIP). Of which, BNE is considered as the gold standard approach. However, with the advent of improved preoperative localisation imaging technique allowing better patient selection, MIP is establishing itself as the more acceptable, more economical and highly effective definitive treatment for solitary adenoma causing hyperparathyroidism.

Aim

We shall present our Trust's experience in performing oMIP and demonstrate its effectiveness and many advantages over the more traditional BNE. In particular, we will demonstrate the importance of high quality preoperative dual modality imaging (ultrasound scan and ^{99m}Tc sestamibi) in oMIP.

Method

A retrospective case note review was carried out for all oMIP performed from 2006 to 2014. All patients had preoperative localisation imaging using ultrasound scan and ^{99m}Tc sestamibi scan. Correlations of adenoma located preoperatively by USS and ^{99m}Tc sestamibi scan in comparison to intraoperative findings, as well as dual modality concordance, were evaluated. Successful surgical localisation and biochemical cure, complication rate and financial savings per case were investigated.

Results

One hundred and ninety patients were included with a mean age of 62. Pre-operative ultrasound scans and ^{99m}Tc sestamibi scans were concordant in 76% of cases. Successful surgical localisation and biochemical cure were achieved in 100% of cases in this concordant group of patients. Postoperative recovery was uneventful in 94% of patients who were discharged on the same day. oMIP resulted in savings of £1549.47 per case.

Conclusion

oMIP confers significant advantage over the gold standard BNE for solitary parathyroid adenoma and can be performed safely as a daycase. It leads to efficient use of hospital resources and is beneficial for patient experience. High quality preoperative imaging for accurate localisation is the key for successful oMIP.

Abstract Session II

Permeatal endoscopic removal of a petrous apex cholesteatoma.

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Face and Content Validation of an Ovine Model for Simulation of Laser Ear Surgery

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Bone anchored hearing aid surgery in England – variation in service provision for adults across Strategic Health Authority regions (for kind consideration as an oral presentation)

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Permeatal endoscopic removal of a petrous apex cholesteatoma.

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Introduction

Petrous bone cholesteatomas are slow growing epidermoid cysts arising from squamous cells in the petrous part of the temporal bone. Petrous bone cholesteatomas account for between 4% and 9% of all petrous bone lesions. They can be congenital or acquired. Petrous apex cholesteatomas (PACs) can present with hearing loss and a facial palsy with the geniculate ganglion being the most frequently affected part of the facial nerve. Other common presenting features include vertigo, tinnitus, otorrhoea, and otalgia.

Case Report

A 63 year old Caucasian male presented with a 10 year history of right-sided facial palsy and profound deafness. Clinically the patient had a House-Brackmann grade 6/6 palsy. There was extensive facial scarring from two unsuccessful rhytidectomies and a static procedure for cosmesis. Otoscopy demonstrated an attic cholesteatoma with an intact tympanic membrane. Computed tomography demonstrated a skull base lesion eroding the right petrous temporal bone. Magnetic resonance imaging showed a lesion that was isointense to brain making a previous diagnosis of a vestibular schwannoma unlikely. A cholesteatoma was suspected on clinical examination. The patient was successfully managed using a wholly endoscopic permeatal technique.

Conclusion

A wholly endoscopic permeatal approach to the petrous apex is rarely reported but can be used safely in the management of petrous apex cholesteatomas. In addition to offering excellent views and better access to the operative field, this minimally invasive technique causes less trauma to normal tissues and reduces post-operative morbidity.

Face and Content Validation of an Ovine Model for Simulation of Laser Ear Surgery

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Introduction

The use of lasers in middle ear surgery requires an understanding of anatomy, and practical experience of the laser being used. There is a need for a model to allow acquisition of this experience. Human cadaveric bones have been used, but are becoming less available. We conducted a study to compare both the face and content validity of ovine models for middle ear laser training and assessment, in particular myringotomy and stapedectomy.

Materials & Methods

11 trainees and 3 consultants attended a multidisciplinary laser course. This involved laser myringotomy and stapedectomy in an ovine model, on which canalplasty had been previously performed to facilitate access. Participants were surveyed to determine the face and content validity of the model for training in laser middle ear surgery. A Likert scale of 1-5 was used.

Results

We had 8 responses from surgeons who had previous middle ear laser experience. On average the performance of the laser in ovine models was comparable to the human ear – 4.38. Laser myringotomy and stapedectomy were also similar to human ears (4.5,4). Footplate stapedotomy was less similar, scoring 3.86. Responders felt that ovine models were appropriate for laser training (4.38).

Conclusion

This study demonstrates the face and content validity of an ovine model for laser ear surgery. Sheep have a relatively thicker stapes footplate, reducing the validity of this model in practicing stapedotomy. There is however a role for the use of this model in the acquisition of skills in laser middle ear surgery.

Bone anchored hearing aid surgery in England – variation in service provision for adults across Strategic Health Authority regions (for kind consideration as an oral presentation)

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Introduction

The bone-anchored hearing aid, or BAHA, was designed to overcome the disadvantages of the transcutaneous bone conduction hearing aid in patients where surgery to improve hearing or a conventional hearing aids are not suitable.

An informal discussion amongst senior UK otologists led to the hypothesis that some hospitals may be performing significantly more bone-anchored hearing aids (BAHAs) than others. With funding from ENT-UK, the authors set out to investigate whether evidence existed to support a regional variation in the provision of BAHAs.

Materials & Methods

The Hospital Episode Statistics (HES) database was interrogated using a bespoke service and data were obtained for years 2008 to 2010 for adult patients only. We used the 2009 geographical distribution of Strategic Health Authorities (SHAs) and standardised the number of procedures per 100,000 inhabitants.

Results

A large difference in the numbers of BAHAs implanted was identified, with some SHAs (n=28) implanting over 17 times as many BAHAs as others (Range 0.41 to 7.03 per 100,000 population. Mean 2.6586 SD 1.7761 95% CI 1.9699 to 3.3473).

Conclusion

A significant regional variation in the provision of BAHAs exists throughout England. The reason for is not immediately apparent, but is likely to be a combination of patient, surgeon and economic factors. The implementation of a national BAHA audit, or comprehensive national implant database would reveal more about current indications for BAHA implantation. Recent scandals involving medical implants strengthen the case for a national audit.

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Abstract Session III

Management and outcomes in children with sinogenic intracranial abscesses

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Body Dysmorphic Disorder in Septorhinoplasty Patients

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A novel finding of *Staphylococcus aureus* within mast cells in nasal polyps

Stephen M. Hayes, Robert Howlin, David A. Johnston, Jeremy S. Webb, Stuart C. Clarke, Paul Stoodley, Philip G. Harries, Susan J. Wilson, Sylvia L. F. Pender, Saul N. Faust, Luanne Hall-Stoodley, Rami J. Salib
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Management and outcomes in children with sinogenic intracranial abscesses

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Introduction

The intracranial complications of sinusitis are potentially life threatening and include venous sinus thrombosis, meningitis and intracranial abscesses. We report our experience of sinogenic intracranial abscesses in the paediatric population and to guide medical and surgical management.

Methods

All children with sinogenic intracranial abscesses presenting to a large university teaching hospital over a five-year period were included in the study. Data on clinical presentation, radiological findings, microbiology, medical and surgical management and follow-up were recorded and analysed.

Results

We identified 27 children aged 12.9 ± 3.4 years of which 56% were male. Fourteen (52%) children had extradural abscesses, nine (33%) subdural abscesses and four (15%) parenchymal abscesses. Early sinus drainage procedures were performed on 24 (89%) patients, and the same number required neurosurgical drainage. *Streptococcus milleri* was isolated in 18 (67%) cases. An initial conservative neurosurgical approach failed in 50% of cases where trialled, and was associated with longer length of stay ($p=0.025$). In comparison to extradural abscesses, subdural abscesses were more likely to present with neurological deficits ($p<0.001$) and reduced consciousness ($p=0.018$), and required multiple neurosurgical procedures ($p<0.001$), longer stays ($p=0.017$), and had greater morbidity at six months ($p=0.017$). A third of children had significant morbidity at six months, which included cognitive and behavioural problems (25%), residual hemiparesis (19%) and expressive dysphasia (7%). There were no mortalities.

Conclusion

Sinusitis complicated by intracranial abscess remains a contemporary problem. We demonstrate good outcomes with an early combined rhinological and neurosurgical approach. *Streptococcus milleri* is identified as the causative organism in the majority of cases, and empirical antimicrobial treatments should reflect this.

Body Dysmorphic Disorder in Septorhinoplasty Patients

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Introduction

Septorhinoplasty (SRP) is performed to optimise or restore adequate nasal function. It is important to identify those patients referred for whom cosmetic outcome may take precedence over function, and recognize a pre-existing psychiatric condition such as body dysmorphic disorder (BDD).

Materials & Methods

Retrospective review of patients seen in ENT outpatients in June 2014 for SRP. Clinic notes and letters reviewed to identify those with a diagnosis of BDD or referred for further psychological assessment.

2nd cycle performed in January 2015; patients referred for SRP in ENT outpatients were recruited into a prospective cohort. A validated screening tool, the Body Dysmorphic Disorder Questionnaire (BDDQ) administered in outpatients. Patients with a positive screen for BDD were referred for psychological assessment. Cohort followed to determine if SRP surgery was suitable.

Results

In 2014, 22% of SRP patients were referred for psychological assessment, 50% of those referred had surgery postponed due to BDD and suicidal ideation. In 2015, 30% of SRP patients were screened positive for BDD (67% male, 33% female). In the at-risk cohort, 33% of patients were offered SRP for their septal deviation; however 67% were found to be unsuitable for SRP and referred for psychological counselling.

Conclusion

A multi-disciplinary approach should be sought for patients who are at-risk of BDD. Early identification, meticulous surgical planning, post-operative follow-up and support is needed to ensure that patients have a good outcome

A novel finding of *Staphylococcus aureus* within mast cells in nasal polyps

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Introduction

Chronic rhinosinusitis (CRS) is a common condition with 20% of patients developing nasal polyps (NP). Bacterial biofilms have been implicated as mediators of the inflammatory reaction in CRS, however, little data pertains to bacterial profiles in NP. Therefore, we conducted a preliminary study characterising bacterial profiles in NP.

Materials & Methods

A prospective study was conducted in 9 patients with CRS with nasal polyps (CRSwNP) undergoing endoscopic sinus surgery, and 5 control patients undergoing trans-sphenoidal pituitary surgery. Non-polypoidal sinonasal mucosa and NPs were collected from each CRSwNP patient, and sinonasal mucosa from controls. The bacterial profiles were assessed using fluorescence *in situ* hybridisation, confocal laser scanning microscopy (CLSM) and immunohistochemistry.

Results

CLSM demonstrated bacterial biofilms on all samples of non-polypoidal sinonasal mucosa, but not on the epithelial surface of NP. However, sub-epithelial and intracellular bacteria were observed within host cells in all NP samples. No biofilms or intracellular bacteria were observed in control samples. Intracellular bacteria were identified as *S. aureus*. Immunohistochemical colocalisation identified mast cells (MC) as the *S. aureus*-harbouring host cells.

Conclusion

The observation of intracellular *S. aureus* is a novel finding and may have relevance to the pathogenesis of NP. Furthermore, *S. aureus* internalisation within MC potentially allows the establishment of a niche of viable intracellular bacterial reservoirs protected from extracellular antimicrobial compounds, and with the ability to constantly seed bacteria thus sustaining the inflammatory reaction and leading to chronicity.

Title to be confirmed

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