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Glucocorticoids improve dizziness symptoms following acute vestibular neuronitis

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Introduction

Vestibular neuronitis is characterised by acute vertigo, nausea and imbalance, and is a leading cause of acute vertigo in general practice and emergency departments. Surprisingly, there has not been an objective assessment of the effects of glucocorticoids on dizziness symptoms in vestibular neuronitis. The focus has instead been on canal paresis recovery, a surrogate marker of the vestibulo-ocular reflex. Despite asymmetrical vestibulo-ocular reflex time constants following an acute vestibulopathy, recent evidence has shown a dissociation between vestibulo-ocular reflex (i.e. vestibular function) and vestibulo-perceptual thresholds (i.e. symptoms).

This project investigated the acute effect of glucocorticoids on dizziness symptoms in patients with acute vestibular neuronitis.

Methods

We recruited consecutive patients who were retrospectively assigned to one of two groups according to whether they received glucocorticoid treatment ($n = 32$) or not ($n = 44$). All patients underwent pure tone audiometry, bithermal calorics testing and magnetic resonance brain imaging, and were asked to complete a Dizziness Handicap Inventory on admission to hospital and just prior to hospital discharge.

Results

In the treatment group, the canal paresis at discharge was significantly lower than in the control group (mean \pm standard deviation (SD) = 38.04 ± 21.57 per cent vs 82.79 ± 21.51 per cent, $p < 0.001$). Dizziness Handicap Inventory test scores were also significantly lower at discharge in the treatment group (mean \pm SD = 23.15 ± 12.40 per cent vs 64.07 ± 12.87 per cent, $p < 0.001$). In addition, we observed a significant reduction in the intensity of nystagmus in patients receiving glucocorticoid treatment compared to the non-treatment group ($p = 0.03$).

Discussion

We have made three observations of clinical relevance: (1) we confirm prior reports showing peripheral vestibular function improvement in patients with acute vestibular neuronitis receiving glucocorticoids on admission; (2) we have shown that the improvement in canal paresis with glucocorticoid treatment correlates with a reduction in the degree of

nystagmus; and (3) critically, we show here for the first time that acute glucocorticoid treatment reduces symptom load and hospitalisation duration in patients with vestibular neuronitis.

Our findings suggest that glucocorticoids may accelerate vestibular compensation via a restoration of peripheral vestibular function, and therefore have important clinical implications for the treatment of vestibular neuronitis.

Clinical implications for otology

Vestibular neuronitis is a leading cause of acute vertigo in general practice and emergency departments. Typically, symptoms last for a few days or weeks, but up to a half of patients continue to suffer from symptoms of dizziness, unsteadiness and spatial disorientation long after recovery from their acute illnesses is expected. Although these chronic symptoms are not life-threatening, they generate significant personal and social handicap in patients, leading to frequent consultations in general practice, ENT and neurology clinics.

Identifying effective symptomatic treatments, such as in this study, should be a clinical research priority for audio-vestibular medicine.

Preliminary outcomes of endoscopic middle-ear surgery: UK experience

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Introduction

Totally endoscopic ear surgery and endoscopic-assisted microsurgery are still new concepts, with relatively few centres in the UK performing them. Advantages include better visualisation of difficult-to-reach areas, such as the sinus tympani, and limited external incisions.

Here we report our short-term outcomes for endoscopic middle-ear surgery.

Methods

We performed a prospective review of the first 96 consecutive patients undergoing totally endoscopic ear surgery or endoscopic-assisted microsurgery in 1 centre performed by 1 operator. Outcomes assessed were: tympanic membrane healing, audiological data and complications.

Results

Twenty-two patients underwent endoscopic-assisted microsurgery, while 74 received totally endoscopic ear surgery. There were no reported cases of dead ear or permanent facial nerve palsy. The average air-bone gap following stapedectomy was 8.00 dB. The tympanic membrane healing rate was 88 per cent.

Discussion

Our results confirm that endoscopic middle-ear surgery is safe, and short-term outcomes are comparable with those of conventional surgery.

Stapes surgery in patients with a small air–bone gap

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Aim

To determine hearing outcomes in patients undergoing stapes surgery with an air–bone gap (ABG) of less than 21.25 dB.

Methods

Patients with an ABG of less than 21.25 dB undergoing primary stapes surgery were identified from all patients undergoing stapes surgery in a tertiary centre over 15 years. A total of 254 ears met the inclusion criteria. Ossicular reconstruction was achieved using a SMart[®] Nitinol fluoroplastic piston, and complete posterior crurotomy was performed using a potassium titanyl phosphate laser. Hearing was assessed with pure tone audiometry at six weeks. The primary outcome measure was the degree of pre-operative ABG closure.

Results

A total of 248 ears (97.6 per cent) demonstrated ABG closure to less than 10 dB.

Discussion

There is a slightly increased risk of stapes mobilisation in ears with a small ABG; however, this can be overcome by using a laser-assisted technique in combination with good surgical experience. The benefit in terms of hearing aid avoidance and the restoration of symmetrical hearing is both achievable and significant.

Outcomes of transmastoid surgery for superior semicircular canal dehiscence syndrome

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Objectives

To present the management strategy and outcomes for our series of superior semicircular canal dehiscence syndrome patients.

Methods

A retrospective cross-sectional study was conducted at a tertiary referral centre. Thirty-seven consecutive patients were referred from June 2011 to January 2015. Twenty surgical patients completed a nine-item questionnaire grading pre- and post-operative symptom severity, and participated in a short semi-structured telephone survey.

Results

There were 13 females and 7 males, with a mean age of 52 years and 6 months. Eighteen patients underwent transmastoid resurfacing and two underwent transmastoid plugging. Three of those who initially underwent resurfacing but had ongoing superior semicircular canal dehiscence symptoms subsequently underwent transmastoid plugging with complete resolution of third window symptoms. There was improvement in mean scores for eight of the nine superior semicircular canal dehiscence symptoms, with statistically significant improvements in six symptoms.

Conclusions

Superior semicircular canal dehiscence surgery was not curative for patients with multiple vestibular pathologies or atypical vestibular symptoms, although these patients did report improvement in their superior semicircular canal dehiscence symptoms. We advise caution when offering these patients surgical intervention.

The efficacy of pre-operative intratympanic gentamicin in alleviating post-operative vestibular symptoms following surgical removal of vestibular schwannomas

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Objective

To examine the effectiveness of pre-operative chemical labyrinthectomy mediated by intratympanic gentamicin in alleviating post-operative vestibular symptoms following the surgical removal of vestibular schwannomas.

Methods

All patients scheduled for translabyrinthine resection of a vestibular schwannoma were offered vestibular ablation by pre-operative intratympanic gentamicin. Calorics testing and electronystagmography (ENG) were used to measure pre-treatment vestibular function, and ice calorics testing was employed to confirm post-treatment ablation. Outcome measures were: post-operative European Evaluation of Vertigo scale scores, duration of hospital stay and time to full mobilisation.

Results

Ten of 15 patients demonstrated vestibular function on ENG, with an average canal paresis of 34 per cent. Two patients had minor complications associated with the injections (severe glossopharyngeal pain and myringitis). The median time until independent mobilisation was 2 days and the median duration of hospital stay was 4–5 days.

Discussion

Intratympanic gentamicin is well tolerated, and is associated with fewer post-operative vestibular symptoms, and earlier mobility and discharge from hospital. Recruitment is ongoing; updated results will be presented.