

Abstract Selection

Positron emission tomography scan to determine the need for neck dissection after chemoradiation for head and neck cancer: timing is everything

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We present a case of a negative positron emission tomography (PET) scan in a patient with pathologic viable cancer at neck dissection.

Study design Case Report.

Methods A 69-year-old man presented with clinical stage T2N2c squamous cell cancer of the left tonsil and was treated with definitive chemoradiation. Left-sided adenopathy decreased but remained palpable after therapy.

Results PET scan performed 23 days after completion of treatment showed no suspicious uptake in the left neck. Neck dissection performed at 2 months post-therapy revealed viable tumor in left cervical nodes.

Conclusions Persistent adenopathy after chemoradiation for head and neck cancer remains a clinical dilemma. A negative PET scan is accurate but only if the scan is performed 3 to 4 months after therapy.

Prevalence of laryngeal irritation signs associated with reflux in asymptomatic volunteers impact of endoscope technique (rigid vs. flexible laryngoscope)

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Objectives The objectives of this study were to 1) determine the prevalence of ENT findings in the normal asymptomatic population and 2) to compare findings between flexible and rigid laryngoscopes in an attempt to increase specificity of diagnosis of reflux in endoscopic laryngeal examinations.

Study design Prospective study.

Methods Fifty-two nonsmoker volunteers (24 male, 28 female), mean age of 42.7 years, with no history of ENT abnormalities or gastroesophageal reflux disease, underwent both rigid and flexible videolaryngologic examinations with a digital endoscopic unit. A group of three expert judges reviewed the oral and transnasal examinations blindly and independently for physical signs of irritation/inflammation commonly associated with reflux.

Results At least one sign of tissue irritation was detected in 93% and 83% of the population when using a flexible and a rigid laryngoscope, respectively. Results showed a high incidence of posterior commissure bar (53.2% and 51.9%), arytenoid complex edema/erythema (76.3% and 53.2%), and pseudosulcus (37.2% and 7.7%). Most signs were more frequently detected on flexible transnasal examinations than with rigid transoral examinations: posterior pharyngeal wall (<0.01), interarytenoid irritation (<0.01), arytenoids complex irritation (<0.01), ventricular obliteration (<0.01), and pseudosulcus (<0.01).

Conclusions Several signs of posterior laryngeal irritation (e.g., interarytenoid bar, erythema of the medial wall of the arytenoids), which are generally considered to be signs of laryngopharyngeal

reflux, are present in a high percentage of nonsymptomatic individuals, raising question about their diagnostic specificity. In addition, these signs were more often detected with flexible than with rigid laryngoscopes, suggesting that flexible laryngoscopy is more sensitive but less specific in identifying laryngeal tissue irritation.

Transnasal, endoscopic vocal fold augmentation

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The practice of injection laryngoplasty under local anesthesia has become more common as both the indications for the procedure and the number of injectable substances increased. Modifications to the injection techniques used for vocal fold augmentation have been described over the last decade that reflect changes in the established percutaneous and transoral approaches. These percutaneous and transoral injection techniques for the treatment of dysphonia secondary to glottic incompetence are well described and provide an adequate approach for most cases. However, these traditional methods may be difficult to master, require great patient tolerance, and may be impossible to perform when anatomic or physiologic barriers exist. We describe a new application of the fiberoptic transnasal endoscope to perform laryngeal injection using a flexible needle through a port in the endoscope. This technique is easily mastered and readily tolerated by patients who would not be candidates for the other injection techniques under local anesthesia. We present our favorable experience with this technique and identify its shortcomings coupled with recommendations to address future technical modifications.

Clinical manifestations of superior semicircular canal dehiscence

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Objectives/Hypotheses To determine the symptoms, signs, and findings on diagnostic tests in patients with clinical manifestations of superior canal dehiscence. To investigate hypotheses about the effects of superior canal dehiscence. To analyze the outcomes in patients who underwent surgical repair of the dehiscence.

Study design Review and analysis of clinical data obtained as a part of the diagnosis and treatment of patients with superior canal dehiscence at a tertiary care referral center.

Methods Clinical manifestations of superior semicircular canal dehiscence were studied in patients identified with this abnormality over the time period of May 1995 to July 2004. Criteria for inclusion in this series were identification of the dehiscence of bone overlying the superior canal confirmed with a high-resolution temporal bone computed tomography and the presence of at least one sign on physiologic testing indicative of superior canal dehiscence. There were 65 patients who qualified for inclusion in this study on the basis of these criteria. Vestibular manifestations were present in 60 and exclusively auditory manifestations without vestibular symptoms or signs were noted in 5 patients.

Results For the 60 patients with vestibular manifestations, symptoms induced by loud sounds were noted in 54 patients and pressure-induced symptoms (coughing, sneezing, straining) were

present in 44. An air-bone on audiometry in these patients with vestibular manifestations measured (mean \pm SD) 19 \pm 14 dB at 250 Hz, 15 \pm 11 dB at 500 Hz; 11 \pm 9 dB at 1,000 Hz; and 4 \pm 6 dB at 2,000 Hz. An air-bone gap 10 dB or greater was present in 70% of ears with superior canal dehiscence tested at 250 Hz, 68% at 500 Hz, 64% at 1,000 Hz, and 21% at 2,000 Hz. Similar audiometric findings were noted in the five patients with exclusively auditory manifestations of dehiscence. The threshold for eliciting vestibular-evoked myogenic potentials from affected ears was (mean \pm SD) 81 \pm 9 dB normal hearing level. The threshold for unaffected ears was 99 \pm 7 dB, and the threshold for control ears was 98 \pm 4 dB. The thresholds in the affected ear were significantly different from both the unaffected ear and normal control thresholds ($P < 0.001$ for both comparisons). There was no difference between thresholds in the unaffected ear and normal control ($P = 0.2$). There were 20 patients who were debilitated by their symptoms and underwent surgical repair of superior canal dehiscence through a middle cranial fossa approach. Canal plugging was performed in 9 and resurfacing of the canal without plugging of the lumen in 11 patients. Complete resolution of vestibular symptoms and signs was achieved in 8 of the 9 patients after canal plugging and in 7 of the 11 patients after resurfacing.

Conclusions Superior canal dehiscence causes vestibular and auditory symptoms and signs as a consequence of the third mobile window in the inner ear created by the dehiscence. Surgical repair of the dehiscence can achieve control of the symptoms and signs. Canal plugging achieves long-term control more often than does resurfacing.

Canal wall reconstruction tympanomastoidectomy with mastoid obliteration

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Objectives This study was designed to evaluate the authors' experience with canal wall reconstruction (CWR) tympanomastoidectomy with mastoid obliteration in the treatment of chronic otitis media with cholesteatoma.

Study design Institutional review board approved retrospective case review.

Methods Retrospective review was performed of all patients undergoing CWR tympanomastoidectomy with mastoid obliteration from 1997 to 2004. Data included pre- and postoperative audiometry, findings at second look surgery with ossiculoplasty, and postoperative complications including wound infection and canal wall displacement.

Results One hundred thirty ears in 127 adults and children underwent the procedure. Mean time postoperative was 48 (range 2–94) months. A second look ossiculoplasty was performed in 102 (78%). Percentage of ears that remain safe without evidence of recurrence was 98.5. The postoperative infection rate decreased from an initial rate of 14.3% to 4.5% for the last 88 ears after protocol modification. Recurrence occurred in two (1.5%) patients, requiring conversion to a canal wall down mastoidectomy.

Conclusions A CWR technique can provide improved intraoperative exposure of the middle ear and mastoid without creating a mastoid bowl and reduces the incidence of recurrent disease. A single procedure is used for all patients with acquired cholesteatoma, including children.

Novel method for recording vestibular evoked myogenic potential: minimally invasive recording on neck extensor muscles

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Objectives Vestibular evoked myogenic potential (VEMP) has been used to test vestibulocollic reflex. However, VEMP is not

stable on elderly patients because of their weak muscular strength. In this study, we tried to record VEMP on median neck extensor muscles with weak muscular contraction.

Study design We recorded VEMP from normal subjects and patients by novel and conventional methods.

Method Thirty-one normal subjects and 56 patients with vertigo or hearing loss were tested in a seated or prone position without muscular tension. The different electrodes were placed on the median surface at the palpable bottom of the occipital bone.

Results Our response showed a clear negative peak at 13 ms on normal subjects, with reversed polarity compared with VEMP on the sternocleidomastoid muscle. This potential is defined as VEMP caused by the proper latencies, dependency of the strength on sound stimulation, and independence of hearing ability. In the cases of acoustic neurinoma, onset latencies were prolonged or nonexistent. The responses on neck extensor muscles could not be recorded on some elderly patients.

Conclusion This new method of recording VEMP is less invasive and suitable for elderly patients.

Screening for distant metastases in patients with head and neck cancer: is chest computed tomography sufficient?

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Objectives/Hypothesis The detection of distant metastases during screening influences the choice of treatment in patients with head and neck squamous cell carcinoma. A previous study in the authors' institution showed that chest computed tomography (CT) scan was the most important screening technique. Different clinical risk factors in patients with head and neck squamous cell carcinoma for the development of distant metastases were identified.

Study design Retrospective cohort study.

Methods To evaluate the authors' diagnostic strategy, the accuracy of screening for distant metastases with chest CT in 109 consecutive patients with head and neck squamous cell carcinoma with risk factors between 1997 and 2000 was retrospectively analyzed.

Results Preoperative screening with CT revealed 20 patients (18%) with lung metastases and 1 liver metastasis. Despite negative screening with chest CT, 9 (11%) patients developed distant metastases within 12 months during follow-up. Sensitivity of the chest CT was 73%; the specificity was 80%.

Conclusion Although chest CT frequently detects distant metastases, there seems to be a need for a more sensitive and whole-body screening technique.

Endoscopic management of benign tumors extending into the infratemporal fossa: a two-surgeon transnasal approach

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Objectives/Hypothesis Preliminary results of the endoscopic two-surgeon technique for the management of benign infratemporal fossa tumors are presented.

Methods Four patients with juvenile nasopharyngeal angiofibroma, a patient with an inverting papilloma, and a patient with a maxillary nerve schwannoma were reviewed. The average age was 22.7 years; the male-to-female ratio was 5:1. The endoscopic anatomy and surgical technique are presented.

Results The two-surgeon technique allowed complete resection of all six tumors extending into the infratemporal fossa. There has been no recurrence of tumor within the infratemporal fossa, after a mean follow-up of 31.3 months (SD = 11.2 mo).

Conclusion The two-surgeon transnasal technique allows benign infratemporal fossa tumors to be resected endoscopically.

Surgical salvage after failed irradiation for vestibular schwannoma
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0023-852X.

Objectives/Hypothesis Compare vestibular schwannoma (VS) surgical outcome between patients with prior irradiation and those not previously treated.

Study design Retrospective review with matched control group.

Methods Review of tumor adherence to the facial nerve, facial nerve grade, and complications in 38 patients with radiotherapy as a primary procedure before VS surgical removal and a matched random sample of 38 patients with primary surgery. The majority of the irradiated group had gamma knife radiation therapy. Mean time from irradiation to surgical salvage was 3.3 years (SD = 3.2), with a minimum of 5.2 months and a maximum of 15.8 years. Most (89.5%) patients in each group underwent a translabyrinthine approach. Mean tumor size at surgery was 2.6 cm in each group.

Results The irradiated group had more moderate to severe adherence of tumor than the controls (89% vs. 63%, $P < \text{or} = 0.01$). They also had a lower rate of good facial function (House-Brackmann grade I/II) (37% vs. 70%) and a higher rate of poor function (grades V or VI) (50% vs. 18%) at follow-up ($P < \text{or} = 0.019$). Results were similar when including only those with good preoperative function (50% vs. 72% and 32% vs. 15%) but did not achieve statistical significance. Surgical time and complications did not differ.

Conclusion Patients who have undergone irradiation for VS and require surgical salvage may have a more difficult surgery and poorer outcomes than those not previously irradiated. When making their initial choice of treatment, patients should be counseled that surgery might be more difficult after failed stereotactic irradiation.

Does pregnancy affect otosclerosis?

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Objective To evaluate the effect of pregnancy on the hearing of women with otosclerosis.

Study design A retrospective study of women who had undergone stapedectomy. The women were equally divided into two groups: one group with children and a control group without children. Air and bone conduction, as well as discrimination, were measured before and after stapedectomy in both groups.

Patients Ninety-four women (47 with children and 47 without) were evaluated. Because many of the women had bilateral otosclerosis, the total number of ears studied was 128.

Results Mean pure tone air and bone conduction thresholds were not worse in women with children versus those women without children. In fact, mean pre- and postoperative pure tone air and bone conduction thresholds from 500 Hz through 4,000 Hz in

women with children were slightly but significantly better than women without children. There was no difference in discrimination scores between groups. Within the group with children, no significant correlation was found between number of children and hearing loss. Also, no correlation was found between breastfeeding and the amount of hearing loss.

Conclusion We found no adverse effect on hearing in otosclerotic women who had children compared with women without children. Even with increasing numbers of pregnancies, no deleterious impact was noted. Air conduction, bone conduction, and discrimination were not worse in women with children versus childless women. No significant correlation was found between the number of children and hearing loss, and neither did breastfeeding affect the amount of hearing loss.

Implantation of esterified hyaluronic acid in microdissected Reinke's space after vocal fold microsurgery: first clinical experiences

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Objective In this pilot study are presented the first clinical experiences of the use of a resorbable bioimplant made of esterified hyaluronic acid inserted in the microdissected superficial layer of the lamina propria (SLLP), also called Reinke's space, after a flap excision procedure for a benign vocal fold lesion. Laryngeal and vocal evolution of implanted patients are depicted and discussed.

Study design Eleven bio-implants have been inserted in microdissected SLLP of 11 cases presenting with benign vocal fold lesions. The surgical procedure consisted of the excision of primary lesion by a microflap technique immediately followed by implantation of esterified hyaluronic acid in Reinke's space.

Methods All patients underwent rigid laryngoscopy and a microsurgical procedure under general anesthesia. The cordal lesion was treated with cold instrumentation of Bouchayer (7 cases) or with a mixed technique using CO₂ laser (4 cases). After the classical freeing-up of Reinke's space and the creation of a mucosal flap, a few fibers of esterified hyaluronic bioimplant are gently arranged in Reinke's space before redraping the ligament and closing the cordal incision with a few drops of fibrin glue. Laryngeal and vocal assessments were performed pre- and postoperatively in all patients using videostroboscopy as well as perceptual and objective voice evaluation. All patients were followed in a longitudinal manner: between two and five postoperative evaluations were performed. The longest follow-up was 19 months and the shortest 2 months.

Results All cases exhibited postsurgical improvement of the pliability of the SLLP. None of them developed an adverse scarring process. Improvement of SLLP's pliability was maintained in time in all cases. Vocal improvement was observed in all. Temporary inflammation was noted in one case. There were no serious adverse effects apparent during the follow-up period.

Conclusion Bio-implantation of esterified hyaluronic acid in Reinke's space is technically easy and well tolerated. All treated cases exhibited postoperative good pliability of the SLLP compared with their preoperative evaluation.