YEAR BOOK®

YEAR BOOK OF OTOLARYNGOLOGY–HEAD AND NECK SURGERY® 1990

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1990

The Year Book of OTOLARYNGOLOGY–HEAD AND NECK SURGERY®

Otology

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Journals Represented

Year Book Medical Publishers subscribes to and surveys nearly 850 U.S. and foreign medical and allied health journals. From these journals, the Editors select the articles to be abstracted. Journals represented in this YEAR BOOK are listed below.

Acta Oto-Laryngologica
Advances in Dental Research
Aesthetic Plastic Surgery
Allergy
American Family Physician
American Journal of Diseases of Children
American Journal of Medicine
American Journal of Otolaryngology
American Journal of Otology
American Surgeon
Anesthesiology
Annals of Emergency Medicine
Annals of Internal Medicine
Annals of Otology, Rhinology and Laryngology
Annals of Plastic Surgery
Annals of the Royal College of Surgeons of England
Archives of Dermatology
Archives of Emergency Medicine
Archives of Internal Medicine
Archives of Neurology
Archives of Otolaryngology–Head and Neck Surgery
Archives of Oto-Rhino-Laryngology
Archives of Pathology and Laboratory Medicine
Archives of Surgery
Brain—Journal of Neurology
British Dental Journal
British Journal of Audiology
British Journal of Plastic Surgery
Cancer
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Clinical Otolaryngology
Clinical Pediatrics
Contemporary Surgery
Dysphagia
Ear, Nose, and Throat Journal
European Journal of Plastic Surgery
General Dentistry
Head and Neck Surgery
International Journal of Oral and Maxillofacial Surgery
International Journal of Pediatric Otorhinolaryngology
International Journal of Radiation, Oncology, Biology, and Physics
Journal of Allergy and Clinical Immunology
Journal of Clinical Pathology
Journal of Computer Assisted Tomography
Journal of Cranio-Maxillo-Facial Surgery
Journal of Dermatologic Surgery and Oncology
Journal of Laryngology and Otology
Journal of Neurosurgery

Journal of Oral and Maxillofacial Surgery
Journal of Otolaryngology
Journal of Pediatrics
Journal of Reconstructive Microsurgery
Journal of Thoracic and Cardiovascular Surgery
Journal of Trauma
Journal of Voice
Journal of the American College of Dentists
Journal of the American Osteopathic Association
Laryngoscope
Neurology
Ophthalmic Plastic and Reconstructive Surgery
ORL Journal of Oto-Rhino-Laryngology and Its Related Specialties
Oral Surgery, Oral Medicine, Oral Pathology
Otolaryngology–Head and Neck Surgery
Pediatric Infectious Disease Journal
Pediatric Radiology
Plastic and Reconstructive Surgery
Postgraduate Medicine
Radiology
Respiratory Medicine
S.A.M.J./S.A.M.T.—South African Medical Journal
Scandinavian Audiology
Southern Medical Journal
Surgery
Surgery, Gynecology and Obstetrics
World Journal of Medicine

Standard Abbreviations

A large number of articles this year deal with acquired immunodeficiency syndrome, the central nervous system, cerebrospinal fluid, computed tomography, electrocardiography, and human immunodeficiency virus. We have chosen not to spell out these names in full each time the abbreviations appear in a new article. These are designated AIDS, CNS, CSF, CT, ECG, and HIV, respectively, throughout the book.

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The material in this volume represents literature through October 1989.

OTOLOGY

MICHAEL M. PAPARELLA, M.D.

Introduction

This year, 1990, marks the beginning of a new decade for all of us, personally and professionally, in the field of otology. It is interesting to speculate about what new developments will take place during this next decade as we look forward to the twenty-first century. During the past five decades the field of otology within the field of otolaryngology—head and neck surgery has grown and progressed as a result of certain landmark developments. Let me take a moment to reflect on some of these.

The fenestration operation, initially developed by Holmgren and Sourdille and later widely adopted and applied by Lempert, demonstrated that patients with otosclerosis can have an operation to cure or improve deafness. During a transitional period, the fenestration operation was replaced by the operation mobilizing the stapes that was pioneered by Sam Rosen of New York. Then in 1957 Shea rediscovered and repopularized stapedectomy for otosclerosis; this had first been used by Jack in Boston at the end of the last century. The early 1950s found Wullstein and Zöellner in Germany developing tympanoplasty and tympanomastoidectomy for chronic otitis media. This ushered in an important major technological development, the utilization of the operating microscope, now commonplace in the field of otology and subsequently in other fields of surgery as well. In the 1960s previously used procedures such as vestibular nerve section and surgery on the endolymphatic sac were once again applied for treatment of intractable Meniere's disease and vertigo. Of these innovative developments, stapedectomy surgery for otosclerosis is in a relative state of decline because of decreasing numbers of patients being treated nationwide by otologists, but tympanoplasty and tympanomastoid procedures for chronic otitis media and for other diseases, as well as the surgical treatment of vertigo and Meniere's disease, continue to develop as important components of practice in the field of otology.

During the past several decades the field of "neurotology" has evolved, developed by William House and expanded by others. Although the parameters of this field are difficult to define, it is nevertheless true that otologists, adept at using the operating microscope and working with or assisting the neurosurgeon, have greatly benefited patients with acoustic tumors by identifying them sooner and allowing earlier and safer removal of their tumors.

Another very important advancement in technology during the past few decades has been the development of hearing aids. When I was a resident, hearing aids worn on the body were still in use, and behind-the-ear hearing aids were used almost exclusively by Americans in need of aids. Now, in-the-ear, or in-the-canal hearing aids are common, and behind-the-ear and body hearing aids are less frequently used. Along with the development of miniaturization and internalization of hearing aids, cochlear implants have been developed, initially by William House and subsequently by many others, for postlingually deaf children. This development continues. A more recent innovation, and one that will most likely have major application in the field, is use of the implantable hearing aid, probably the electromagnetic device, as a few abstracts in this edition of the YEAR BOOK describe.

The field of otology has moved forward with the important development of research and education in the field. This has been particularly evident if one looks at the parallel and convergent development of the National Institutes of Health as it supports research and education in the field of hearing, balance, and related disorders. Years ago, communicative disorders and loss of hearing were not even mentioned in the National Institutes of Neurological Diseases and Blindness. In subsequent years the Institute became known as the National Institute of Neurological Diseases, Communicative Disorders, and Stroke. More recently, a major development has occurred against all odds, and finally we have an Institute dedicated to the diseases of the ear and related areas—the National Institute of Deafness and Other Communication Disorders.

The basic sciences, as well as the clinical and applied sciences, have grown significantly as the clinical field of otology has broadened and developed. We can look forward to the next decade for further refinements and developments in otology, diagnosis and medical management, and refined and developed technology and surgical management that will change dramatically the ways in which otologic disorders are diagnosed and treated in comparison with treatments in former years.

Michael M. Paparella, M.D.

1 Vestibular Function

Vestibular Atelectasis

Merchant SN, Schuknecht HF (Massachusetts Eye and Ear Infirmary, Boston; Harvard Med School)

Ann Otol Rhinol Laryngol 97:565–576, November–December 1988 1–1

Analysis of specimens of temporal bone from a patient with a history of vertigo revealed collapse of the ampullae and utricle as the only rea-

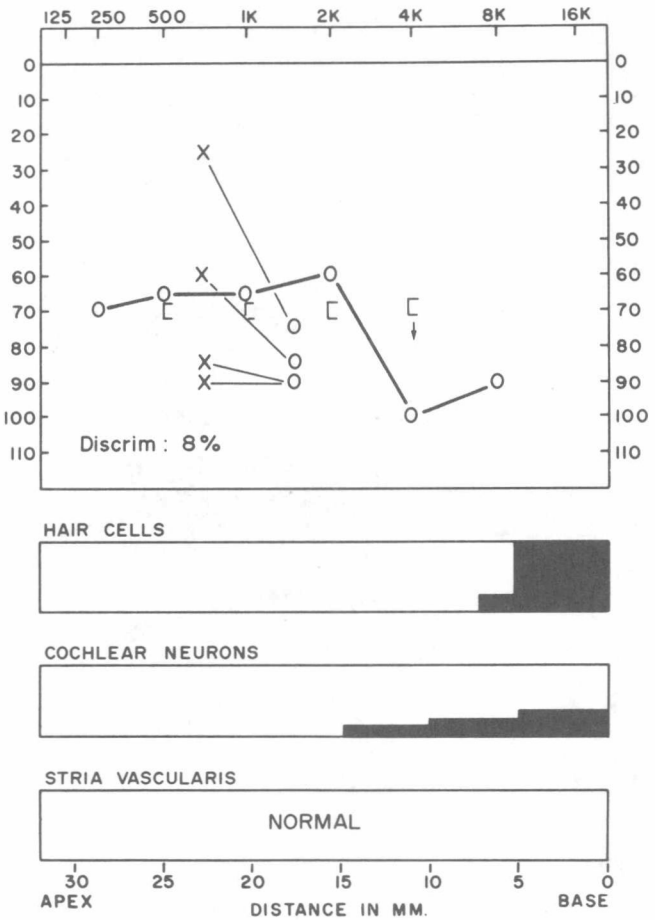

Fig 1–1.—Above, audiogram done when patient aged 51 was complaining of right-sided hearing loss and unsteadiness. *(Continued.)*

sonable explanation for this condition. To determine whether such collapsed walls are a symptomatic pathologic entity, 213 patients were examined.

Serial sections from 426 temporal bones thought to be possible examples of vestibular collapse were examined. A number of histologic features were considered to differentiate pathologic from artifactual collapse. The degree of collapse was classified as minimal, partial, near total, or total. Medical records of the 213 patients then were examined for positive histories of vertigo.

Of 8 patients judged to have pathologic collapse in 1 ear, 5 had a history of vertigo. Another was said to have Meniere's disease. The presence of vertigo could not be ruled out in the remaining 2 patients. In 82 patients with artifactually produced collapse, 9 had a history of vertigo.

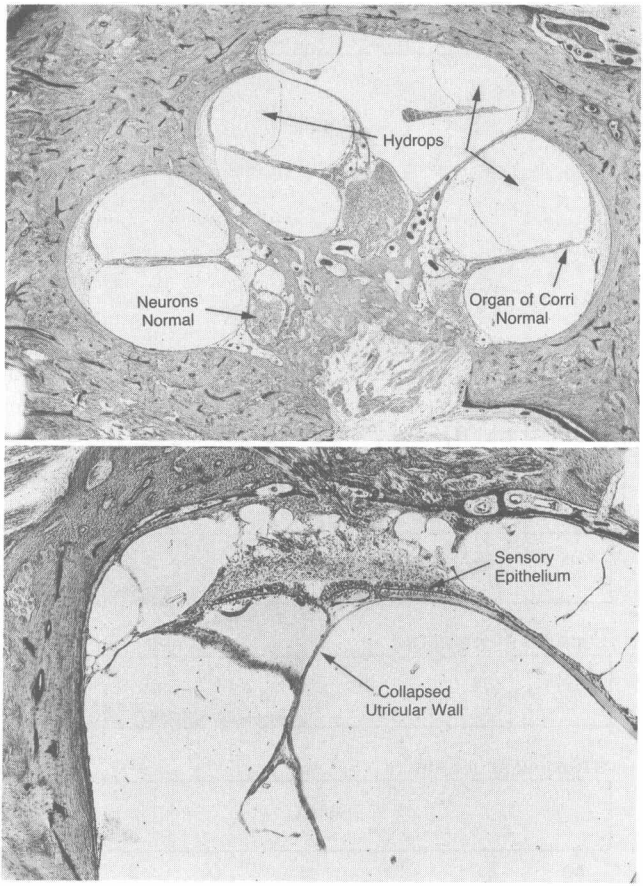

Fig 1–1 (cont.)—Top, severe hydrops of cochlear duct of right ear (original magnification ×24.3). Hair cell and neuronal populations are normal. **Bottom,** collapse of utricular wall of right ear onto its macula with disruption and distortion of sensory epithelium and focal areas of loss of supporting cells and hair cells (original magnification ×70). (Courtesy of Merchant SN, Schuknecht HF: *Ann Otol Rhinol Laryngol* 97:565–576, November–December 1988.)

Among the 123 patients with no collapse, only 15 had a history of vertigo. On the basis of this evidence a clinical entity termed primary vestibular atelectasis was formulated. In this condition collapse of part or all of the walls of the ampullae and utricle results in vertigo.

Primary vestibular atelectasis can have a sudden or insidious onset. In the former a severe vertiginous episode occurs without auditory symptoms or signs of CNS disease. In the latter, onset is subtle but the prolonged motion-related vertigo is similar. A number of patient histories detail clinical and histologic findings in both the sudden and insidious forms (Fig 1–1). Vertibular atelectasis also can occur secondary to other inner ear disorders. Causes of the primary type of collapse might include focal viral infection or the degenerative changes of aging.

▶ Vestibular atelectasis is a new observation and hypothesis that warrants further study and confirmation. The authors are careful to distinguish between artifactual change and actual collapse. We know, for example, that endolymphatic vestibular collapse can be a common artifactual change in the pars inferior. One wonders if collapse is a manifestation of previous hydrops. Clinical correlations are intimated, and perhaps this is 1 of the examples of what is seen in so-called vestibular Meniere's disease. It is well known that vestibular Meniere's disease can occur alone, in the absence of hearing loss that usually results in typical Meniere's in patients followed over time. Otopathologic studies such as this will help to provide insight into the diagnosis and management of vestibular problems in many patients.—M.M. Paparella, M.D.

Bilateral Vestibular Loss and Oscillopsia

McGath JH, Barber HO, Stoyanoff S (Sunnybrook Med Ctr, Toronto; Univ of Toronto)

J Otolaryngol 18:218–221, August 1989 1–2

Visual blurring that occurs when images of stationary objects are not stabilized on the retina is called oscillopsia. The vestibulo-ocular reflex (VOR) secures clear vision during head movement. If the VOR is sufficiently impaired, visual blurring with head movement can occur. The relationship between bilateral vestibular reduction and oscillopsia was examined in 5,499 patients undergoing vestibular function tests at a dizziness unit.

Of these patients, 92 (1.6%) had bilateral caloric reduction or loss. In most patients no diagnosis could be made with a high degree of confidence. However, bilateral Meniere's disease and the use of ototoxic drugs were identified most frequently. The degree of caloric reduction or loss was not correlated with the subjective symptom of oscillopsia, oscillopsia test results, or the results of low frequency harmonic sinusoidal rotation tests. No oscillopsia was noted in a few patients with bilateral caloric loss. Bilateral caloric reduction or loss was not a predictor of the presence or severity of oscillopsia.

▶ Bilateral Meniere's disease or ototoxicity, among other disorders, can result in bilateral vestibular caloric hypofunction. Such a problem is often manifested

by oscillopsia as described. Bilateral, symmetrical involvement of the peripheral vestibular system represents one of the more difficult diseases to diagnose, understand, and manage. Oscillopsia can result and should be asked about in the history-taking process.—M.M. Paparella, M.D.

Idiopathic Bilateral Vestibulopathy

Baloh RW, Jacobson K, Honrubia V (Univ of California, Los Angeles)

Neurology 39:272–275, February 1989 1–3

A slowly developing bilateral vestibulopathy can be relatively silent. Vertigo may be absent, and the loss of vestibulospinal and vestibulo-ocular reflex function can result in nonspecific complaints of imbalance and visual distortion. Without associated hearing loss, these symptoms may be attributed erroneously to abnormal visual or motor function, especially in elderly persons. The clinical features of 22 patients with acquired bilateral vestibular loss without associated hearing loss were examined.

All patients had either absent or markedly reduced responses to caloric and rotational testing. The patients typically had dysequilibrium and imbalance that was worse at night. Most reported oscillopsia, but none had hearing loss or other neurologic symptoms. Nine patients had previous prolonged episodes of vertigo consistent with the diagnosis of bilateral sequential vestibular neuritis. The remaining 13 patients had no exposure to known ototoxins and no positive family history.

Idiopathic bilateral vestibulopathy is an important cause of progressive imbalance in adults. It should be considered even when no associated hearing loss is noted.

▶ These patients, as in the previous report, also complained of oscillopsia, disequilibrium, and imbalance correlated with absent or markedly reduced caloric responses. Here again, the exact diagnosis eludes us. Such patients might have viral involvement of neurons; however, vestibular neuronitis is generally considered to occur in clusters and to subside over time. When patients have recurrent or repeated episodes of vertigo, bilateral Meniere's disease needs to be considered among other vestibular as well as central disorders.—M.M. Paparella, M.D.

Paroxysmal Positional Vertigo in the Elderly

Bloom J, Katsarkas A (McGill Univ)

J Otolaryngol 18:96–98, April 1989 1–4

Paroxysmal positional vertigo is reportedly more common in later life. Postural instability, falling, or dizziness in the elderly is usually attributed to vascular disease, but it was postulated that, in some instances, the patient may instead have paroxysmal positional vertigo.

In a 14-year period, 806 patients at least 70 years of age were referred after having experienced dizziness. All patients underwent a clinical