YEAR BOOK®

YEAR BOOK OF
OTOLARYNGOLOGY–HEAD AND NECK SURGERY®
1991

PAPARELLA
BAILEY

1991

The Year Book of OTOLARYNGOLOGY–HEAD AND NECK SURGERY®

NOT FOR RESALE

Otology

Editor

Michael M. Paparella, M.D.

Clinical Professor and Chairman Emeritus, Department of Otolaryngology, University of Minnesota; President, Minnesota Ear, Head and Neck Clinic; Secretary, International Hearing Foundation

Head and Neck Surgery

Editor

Byron J. Bailey, M.D.

Weiss Professor and Chairman, Department of Otolaryngology, The University of Texas Medical Branch, Galveston

NOT FOR RESALE

Mosby Year Book

St. Louis Baltimore Boston Chicago London Philadelphia Sydney Toronto

Editor-in-Chief, Year Book Publishing: Nancy Gorham
Sponsoring Editor: Kristine Antens
Manager, Medical Information Services: Edith M. Podrazik
Senior Medical Information Specialist: Terri Strorigl
Senior Medical Writer: David A. Cramer, M.D.
Assistant Director, Manuscript Services: Frances M. Perveiler
Associate Managing Editor, Year Book Editing Services: Elizabeth Fitch
Production Coordinator: Max F. Perez
Proofroom Manager: Barbara M. Kelly

Copyright © July 1991 by Mosby–Year Book, Inc.
A Year Book Medical Publishers imprint of Mosby–Year Book, Inc.

Mosby–Year Book, Inc.
11830 Westline Industrial Drive
St. Louis, MO 63146

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the publisher.
Printed in the United States of America.

Permission to photocopy or reproduce solely for internal or personal use is permitted for libraries or other users registered with the Copyright Clearance Center, provided that the base fee of $4.00 per chapter plus $.10 per page is paid directly to the Copyright Clearance Center, 21 Congress Street, Salem, MA 01970. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collected works, or for resale.

Editorial Office:
Mosby–Year Book, Inc.
200 North LaSalle St.
Chicago, IL 60601

International Standard Serial Number: 1041-892X
International Standard Book Number: 0-8151-0535-5

1991
YEAR BOOK OF
OTOLARYNGOLOGY–HEAD AND NECK SURGERY®

0006 9014

The 1991 Year Book® Series

Year Book of Anesthesia®: Drs. Miller, Kirby, Ostheimer, Roizen, and Stoelting

Year Book of Cardiology®: Drs. Schlant, Collins, Engle, Frye, Kaplan, and O'Rourke

Year Book of Critical Care Medicine®: Drs. Rogers and Parrillo

Year Book of Dentistry®: Drs. Meskin, Currier, Kennedy, Leinfelder, Matukas, and Rovin

Year Book of Dermatology®: Drs. Sober and Fitzpatrick

Year Book of Diagnostic Radiology®: Drs. Hendee, Keats, Kirkpatrick, Miller, Osborn, Reed, and Thompson

Year Book of Digestive Diseases®: Drs. Greenberger and Moody

Year Book of Drug Therapy®: Drs. Lasagna and Weintraub

Year Book of Emergency Medicine®: Drs. Wagner, Burdick, Davidson, Roberts, and Spivey

Year Book of Endocrinology®: Drs. Bagdade, Braverman, Halter, Horton, Kannan, Molitch, Morley, Odell, Rogol, Ryan, and Sherwin

Year Book of Family Practice®: Drs. Berg, Bowman, Dietrich, Green, and Scherger

Year Book of Geriatrics and Gerontology®: Drs. Beck, Abrass, Burton, Cummings, Makinodan, and Small

Year Book of Hand Surgery®: Drs. Dobyns, Chase, and Amadio

Year Book of Health Care Management: Drs. Heyssel, King, and Steinberg, Ms. Avakian, and Messrs. Berman, Brock, Kues, and Rosenberg

Year Book of Hematology®: Drs. Spivak, Bell, Ness, Quesenberry, and Wiernik

Year Book of Infectious Diseases®: Drs. Wolff, Barza, Keusch, Klempner, and Snydman

Year Book of Infertility: Drs. Mishell, Paulsen, and Lobo

Year Book of Medicine®: Drs. Rogers, Des Prez, Cline, Braunwald, Greenberger, Utiger, Epstein, and Malawista

Year Book of Neonatal and Perinatal Medicine: Drs. Klaus and Fanaroff

Year Book of Neurology and Neurosurgery®: Drs. Currier and Crowell

Year Book of Nuclear Medicine®: Drs. Hoffer, Gore, Gottschalk, Sostman, Zaret, and Zubal

Year Book of Obstetrics and Gynecology®: Drs. Mishell, Kirschbaum, and Morrow

试读结束，需要全本PDF请购买 www.ertongbook.com

Year Book of Occupational and Environmental Medicine: Drs. Emmett, Brooks, Harris, and Schenker

Year Book of Oncology: Drs. Young, Longo, Ozols, Simone, Steele, and Weichselbaum

Year Book of Ophthalmology®: Drs. Laibson, Adams, Augsburger, Benson, Cohen, Eagle, Flanagan, Nelson, Reinecke, Sergott, and Wilson

Year Book of Orthopedics®: Drs. Sledge, Poss, Cofield, Frymoyer, Griffin, Hansen, Johnson, Springfield, and Weiland

Year Book of Otolaryngology–Head and Neck Surgery®: Drs. Bailey and Paparella

Year Book of Pathology and Clinical Pathology®: Drs. Brinkhous, Dalldorf, Langdell, and McLendon

Year Book of Pediatrics®: Drs. Oski and Stockman

Year Book of Plastic, Reconstructive, and Aesthetic Surgery: Drs. Miller, Cohen, McKinney, Robson, Ruberg, and Whitaker

Year Book of Podiatric Medicine and Surgery®: Dr. Kominsky

Year Book of Psychiatry and Applied Mental Health®: Drs. Talbott, Frances, Freedman, Meltzer, Perry, Schowalter, and Yudofsky

Year Book of Pulmonary Disease®: Drs. Green, Loughlin, Michael, Mulshine, Peters, Terry, Tockman, and Wise

Year Book of Speech, Language, and Hearing: Drs. Bernthal, Hall, and Tomblin

Year Book of Sports Medicine®: Drs. Shephard, Eichner, Sutton, and Torg, Col. Anderson, and Mr. George

Year Book of Surgery®: Drs. Schwartz, Jonasson, Robson, Shires, Spencer, and Thompson

Year Book of Ultrasound: Drs. Merritt, Mittelstaedt, Carroll, and Nyberg

Year Book of Urology®: Drs. Gillenwater and Howards

Year Book of Vascular Surgery®: Drs. Bergan and Yao

Roundsmanship '91–'92: A Year Book® Guide to Clinical Medicine: Drs. Dan, Feigin, Quilligan, Schrock, Stein, and Talbott

Journals Represented

Mosby–Year Book 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 Chirurgica Scandinavica
Acta Odontologica Scandinavica
Acta Oto-Laryngologica
American Journal of Neuroradiology
American Journal of Otolaryngology
American Journal of Otology
American Journal of Roentgenology
American Journal of Surgery
American Surgeon
Anesthesia and Analgesia
Annals of Allergy
Annals of Emergency Medicine
Annals of Internal Medicine
Annals of Neurology
Annals of Otology, Rhinology and Laryngology
Annals of Plastic Surgery
Annals of Rheumatic Diseases
Annals of Surgery
Annals of Thoracic Surgery
Annals of the Royal College of Surgeons of England
Archives of Disease in Childhood
Archives of Internal Medicine
Archives of Neurology
Archives of Oto-Rhino-Laryngology
Archives of Otolaryngology–Head and Neck Surgery
Archives of Pathology and Laboratory Medicine
Archives of Surgery
British Dental Journal
British Journal of Plastic Surgery
Canadian Family Physician
Canadian Journal of Surgery
Cancer
Chest
Clinical Otolaryngology
Clinical Radiology
Clinical and Experimental Allergy
Compendium of Continuing Education in Dentistry
Contemporary Surgery
Critical Care Medicine
Digestive Diseases and Sciences
Dysphagia
Ear, Nose, and Throat Journal
European Archives of Otorhinolaryngology
General Dentistry

Head and Neck
International Journal of Pediatric Otorhinolaryngology
International Journal of Radiation, Oncology, Biology, and Physics
Journal of Cranio-Maxillo-Facial Surgery
Journal of Craniofacial Surgery
Journal of Dermatologic Surgery and Oncology
Journal of Family Practice
Journal of Laryngology and Otology
Journal of Oral and Maxillofacial Surgery
Journal of Otolaryngology
Journal of Pediatric Surgery
Journal of Pediatrics
Journal of Vascular Surgery
Journal of the American Medical Association
Lancet
Laryngoscope
Mayo Clinic Proceedings
Microsurgery
ORL (Journal for Oto-Rhino-Laryngology)
Ophthalmology
Oral Surgery, Oral Medicine, Oral Pathology
Otolaryngology–Head and Neck Surgery
Pediatric Emergency Care
Pediatric Infectious Disease Journal
Pediatric Neurology
Pediatric Radiology
Physical Therapy
Plastic and Reconstructive Surgery
Radiology
Respiratory Medicine
Scandinavian Audiology
Southern Medical Journal
Surgery, Gynecology and Obstetrics
World Journal of Surgery

Standard Abbreviations

The following terms are abbreviated in this edition: acquired immunodeficiency syndrome (AIDS), the central nervous system (CNS), cerebrospinal fluid (CSF), computed tomography (CT), electrocardiography (ECG), and human immunodeficiency virus (HIV).

OTOLOGY

MICHAEL M. PAPARELLA, M.D.

Introduction

The Otolaryngologist and the Hearing Health Care "Team"

Hearing loss is a symptom or a finding, if documented audiologically, of some otologic disease. Hearing loss may manifest as conductive, mixed, or sensorineural. The primary symptoms of inner ear disease are hearing loss, tinnitus, and vertigo. Hearing loss and tinnitus arise from the front part of the inner ear (auditory labyrinth), which is related to hearing; vertigo arises from the posterior portion of the inner ear (vestibular labyrinth), which relates to maintenance of balance and equilibrium. The vestibular labyrinth (pars superior) develops embryologically and phylogenetically earlier than the auditory labyrinth (pars inferior). It is axiomatic that older structures and organs appear to be more resistant to disease, whether developmental or acquired, than newer ones. Perhaps this is why more diseases affect the auditory laybrinth, causing hearing loss and tinnitus, and fewer cause simply vertigo, affecting only the vestibular labyrinth. Naturally, many diseases cause both hearing loss and vertigo.

Hearing loss is a very important and common problem in the United States. Unfortunately, hard data as to incidence are not available. A study for such statistics is urgently needed. According to a study done by Schein and Delk in 1974, 13 to 14 million people in the United States have hearing loss sufficient to significantly affect their every-day functions. Although figures are not available, it is generally assumed that most of these individuals have a significant degree of sensorineural hearing loss. Reportedly, 30% of males and 26% of females aged 65–74 years of age have hearing sensitivity equal to or poorer than 26 dB HL (ANSI 1969). There are 203 deaf persons for every 100,000 people in the United States (1). It is also generally agreed that approximately 10% of the American population, i.e., 24 million individuals, have a significant hearing and/or speech problem. It is obvious that a health care problem of this magnitude has profound social and educational implications.

Every patient with a hearing loss requires first and foremost a medical diagnosis and, insofar as possible, medical management. The only trained professional capable of performing this function is the otolaryngologist. There is a need for the otolaryngologist to expand his or her knowledge of hearing to assume responsibility for the benefit of the patient. Other key professionals are the medical audiologist and/or hearing aid specialist. Hearing loss can be stable or dynamic over time, and every hearing loss requires the attention of both the otologist and, ideally, the audiologist. The respective roles of otology and audiology are well described in an earlier edition of *Hearing and Deafness* by Hallowell Davis, M.D., and S. Richard Silverman, M.D.:

"Otology is the medical and surgical specialty that deals with the organs of hearing and balance from the point of view of their diseases, as well as to safeguard the life of the patient. Otology is part of the field of Otorhinolaryngology, that medical specialty which deals with diseases of the ear and head and neck. Its point of view is primarily biological. Audiology is a specialty that is concerned with the function of hearing, with strong emphasis on its education and social aspects and of providing assistance, where appropriate, in the form of hearing aids.

"Nevertheless the two specialties interact strongly and provide much mutual support. The otologist can do much to relieve conductive hearing impairment due to abnormalities or pathology of the external or middle ear, and can give relief medically to some disorders of the middle and inner ear. Audiology in its turn can provide the otologist with very useful information from several audiological tests, particularly those which are designed to locate the anatomical site of a lesion. Sometimes a differential diagnosis, such as that between an auditory neurinoma and Meniere's syndrome, is vital and may be greatly assisted by tests performed by the medical audiologist.

"A final principle is that both fields share responsibility for the management of the individual patient, but decisions regarding otological management should always precede decisions on audiological management. Biological safety must be insured and function restored as fully as possible. On the other hand, surgical or medical intervention to improve or restore auditory function must be evaluated in terms of the auditory potentialities that remain as well as many local and general clinical considerations." (2)

There are many debates ongoing nationally as to political and economic aspects of a patient's hearing loss problem. We are interested only in what is best for the individual patient. Recognizing that every hearing loss stems from some disease, it is obvious that, first, the underlying problem, or disease, needs to be identified and treated medically or surgically, if possible. Afterward, the patient with a hearing loss must be studied periodically because of the dynamic nature of changes that might occur, and because of the possibility of additive causes over time. Treatment is not indicated for many millions of Americans with sensorineural hearing loss. These millions of Americans deserve help and become candidates for rehabilitation, which significantly includes the use of hearing aids. There are thousands of competent and caring hearing aid specialists in America. They play an important key role on the hearing health care "team."

Michael M. Paparella, M.D.

References

1. Schein JD, Delk MT: *National Census of the Deaf Population; Interview Responses*. Silver Springs, MD, The Deaf Population of the United States, National Association of the Deaf, 1974.
2. Paparella MM, Davis H: Medical and Surgical Treatment, in Davis H, Silverman SR (eds): *Hearing and Deafness,* ed 4. New York, Holt, Reinhart, and Winston, 1978, chapter 6.

试读结束，需要全本PDF请购买 www.ertongbook.com

Table of Contents

The material covered in this volume represents literature through October 1990.

1 Vestibular Function

Controversies on the Caloric Response: From Bárány's Theory to Studies in Microgravity
Stahle J (Uppsala Univ, Sweden)
Acta Otolaryngol (Stockh) 109:162–167, 1990 1–1

In 1914 Robert Bárány (Fig 1–1) was awarded the Nobel Prize for Physiology and Medicine for his initial discovery of the caloric response and his description of the physiologic mechanism underlying it. However, 2 aspects of his discovery have been controversial. The first item concerned the question as to who should be credited with the initial discovery and description of the caloric response. The Nobel Prize Committee resolved the controversy with the University of Vienna, which had questioned Bárány's contribution, and Bárány alone was ultimately credited with the caloric response theory.

Fig 1–1.—Robert Bárány (1876–1936) as a young physician. He received his education in Vienna under the supervision of Adam Politzer. He was awarded the Nobel Prize in medicine and physiology in 1914. Bárány was a prisoner of war in Russia in 1914–1915. He was head of the Department of Otolaryngology in Uppsala from 1917, and was full professor at Uppsala University from 1926. (Courtesy of Stahle J: *Acta Otolaryngol (Stockh)* 109:162–167, 1990.)

The second point of controversy concerned Bárány's explanation that caloric nystagmus is the result of endolymph movement caused by convection currents. In his original report, Bárány describes the relationship between nystagmus and the temperature of irrigation water, and states that the direction of caloric nystagmus is dependent on the position of the head. Over the years, 4 principal objections have been raised against his theory that caloric stimulation causes thermoconvective endolymph currents in the lateral semicircular canal. One objection involves the finding of microgravity studies that caloric nystagmus can also be evoked in a weightless environment. However, the findings of caloric testing in microgravity have also been criticized. Furthermore, there is now evidence of the simultaneous occurrence of a nonthermoconvective mechanism, which theoretically could answer for about one third of the total caloric response. The clinical importance of the caloric test in otolaryngology remains valid today.

▶ Stahle has had a unique opportunity to discuss the contribution of Bárány. After accomplishing his initial work at the University of Vienna, Bárány occupied the first Chair as a Professor of Otolaryngology at Uppsala University in Sweden, and only recently resigned as Professor and Chairman there. It is interesting to add this scientific historical perspective to our understanding of vestibular function.—M.M. Paparella, M.D.

Van Gogh Had Meniere's Disease and Not Epilepsy

Arenberg IK, Countryman LF, Bernstein LH, Shambaugh GE Jr (Colorado Neurologic Inst, Englewood; Swedish Med Ctr, Shambaugh Hearing & Allergy PC, Hinsdale, Ill)

JAMA 264:491–493, 1990 1–2

During his lifetime, Vincent Van Gogh was thought to have epilepsy and "madness," a diagnosis was not seriously questioned until recently. However, when investigators reviewed 796 personal letters Van Gogh wrote to family and friends between 1884 and 1890, the year he took his life, they found that the correspondence described symptoms typical of labyrinthine vertigo coupled with nausea, vomiting, and noise intolerance. These episodes were separated by symptom-free periods. Van Gogh also reported positional vertigo, fluctuating hearing loss, tinnitus, and hyperacusis.

Van Gogh himself thought he had hallucinations, but the nystagmus that accompanies an episode of Meniere's disease could easily have been mistaken for a visual hallucination. Similarly, the "noises" that Van Gogh heard were probably attributable to tinnitus. The word *tinnitus* was not in common use in the 19th century, and even Meniere referred to "noises in or of the ear" rather than tinnitus. It is likely that Van Gogh may have mutilated his ear in an effort to relieve the tinnitus.

Van Gogh's own statements describing his attacks are compelling evidence for a diagnosis of Meniere's disease and not epilepsy. Although he voluntarily admitted himself to an asylum for epileptics and lunatics, his behavior at the asylum was rational. This fact, coupled with the symptoms he described and the characteristic symptom-free episodes, suggest that Van Gogh was neither mad nor epileptic but, rather, that he was afflicted with Meniere's disease.

▶ It is sometimes difficult to diagnose Meniere's disease when the patient is sitting in the examining chair immediately in front of the specialist. It is more difficult to diagnose Meniere's disease retrospectively in an artist of great renown who lived many years earlier. Still, this assessment of Van Gogh's affliction seems reasonable. Although it cannot be proved, it helps explain not only his behavior but his ultimate contribution to society in his unique paintings.—M.M. Paparella, M.D.

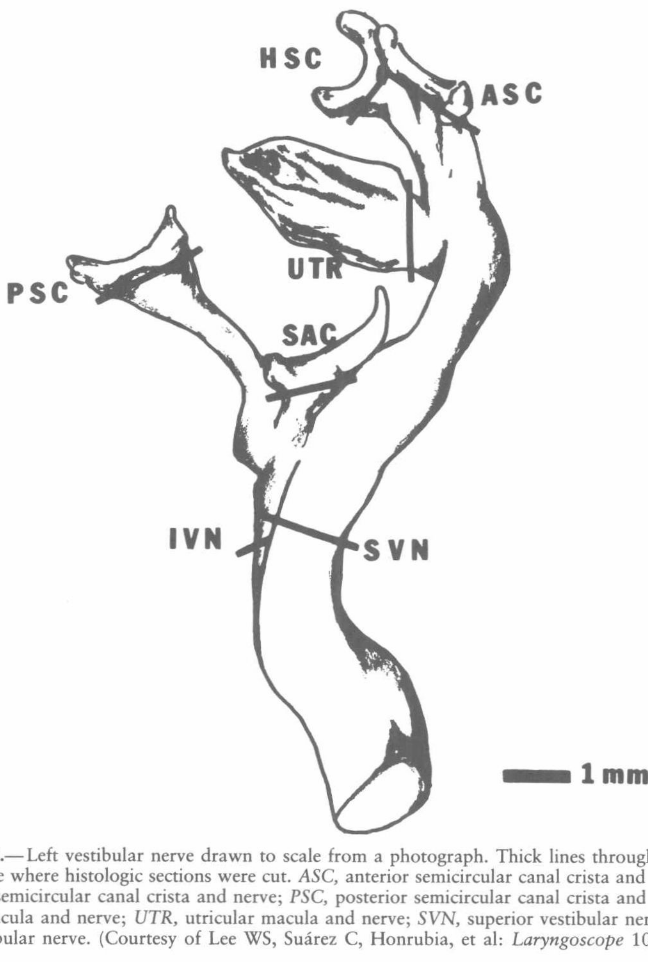

Fig 1–2.—Left vestibular nerve drawn to scale from a photograph. Thick lines through nerve bundles indicate where histologic sections were cut. *ASC,* anterior semicircular canal crista and nerve; *HSC,* horizontal semicircular canal crista and nerve; *PSC,* posterior semicircular canal crista and nerve; *SAC,* saccular macula and nerve; *UTR,* utricular macula and nerve; *SVN,* superior vestibular nerve; *IVN,* inferior vestibular nerve. (Courtesy of Lee WS, Suárez C, Honrubia, et al: *Laryngoscope* 100:756–764, 1990.)

Morphological Aspects of the Human Vestibular Nerve

Lee WS, Suárez C, Honrubia V, Gómez J (Univ of California, Los Angeles)

Laryngoscope 100:756–764, 1990 1–3

The vestibular nerve is morphologically similar in diverse species. Anatomicophysiologic studies in animals indicate that the morphological properties of vestibular neurons correlate with functional responses. The diameter and distribution of fibers in nerves innervating the vestibular receptor organs in 3 human temporal bones were quantified using computer methods (Figs 1–2, p 3; 1–3).

From 1,416 to 2,335 fibers were present in nerves to the individual cristae. Fibers 2.5 to 3 μm in diameter were most numerous. The number of fibers fell exponentially with increasing fiber size. Fibers were differently distributed in the central and intermediate areas of the crista than at the ends. Thin fibers tended to project to the ends of the receptor area, whereas thick fibers were distributed more uniformly, although they were nearly absent at the extreme ends of the crista. From 3,744 to 5,538 fibers were present in nerves to the maculae. Fibers 3–3.5 μm in size predominated. The similarity of labyrinth innervation in humans, squirrel monkeys, and bullfrogs suggests that humans and animals share similar functional properties.

▶ Morphological findings can be assumed to equate with physiologic findings but need not necessarily do so. It is interesting to see the similarity of labyrin-

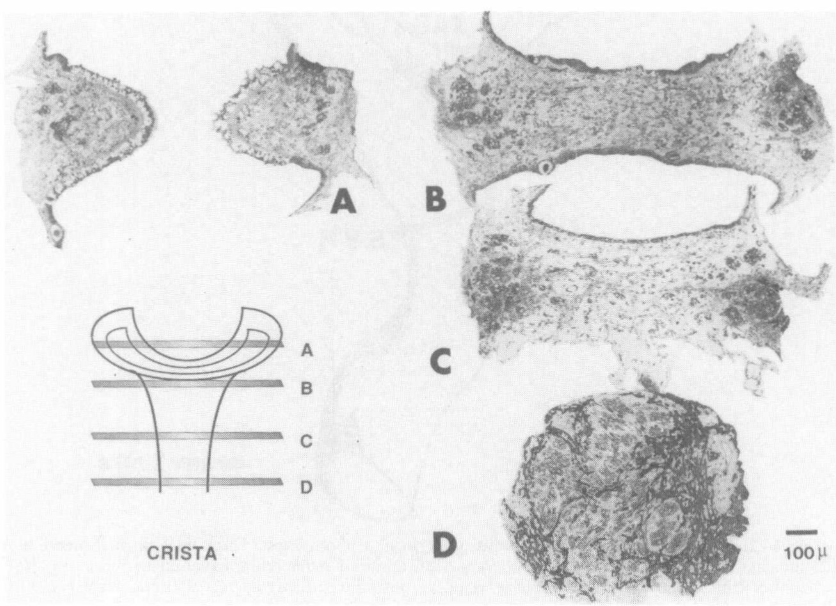

Fig 1–3.—Posterior crista and nerve. *Thick lines* through schematic drawing of the nerve indicate 4 levels at which computer reconstructions were made. (Courtesy of Lee WS, Suárez C, Honrubia V, et al: *Laryngoscope* 100:756–764, 1990.)

thine innervation between humans and various animal species.—M.M. Paparella, M.D.

Clinical Diagnosis of Anterior Inferior Cerebellar Artery Thrombosis: Autopsy and Temporal Bone Histopathologic Study

Hinojosa R, Kohut RI (Univ of Chicago; Bowman Gray School of Medicine, Winston-Salem, NC)

Ann Otol Rhinol Laryngol 99:261–272, 1990 1–4

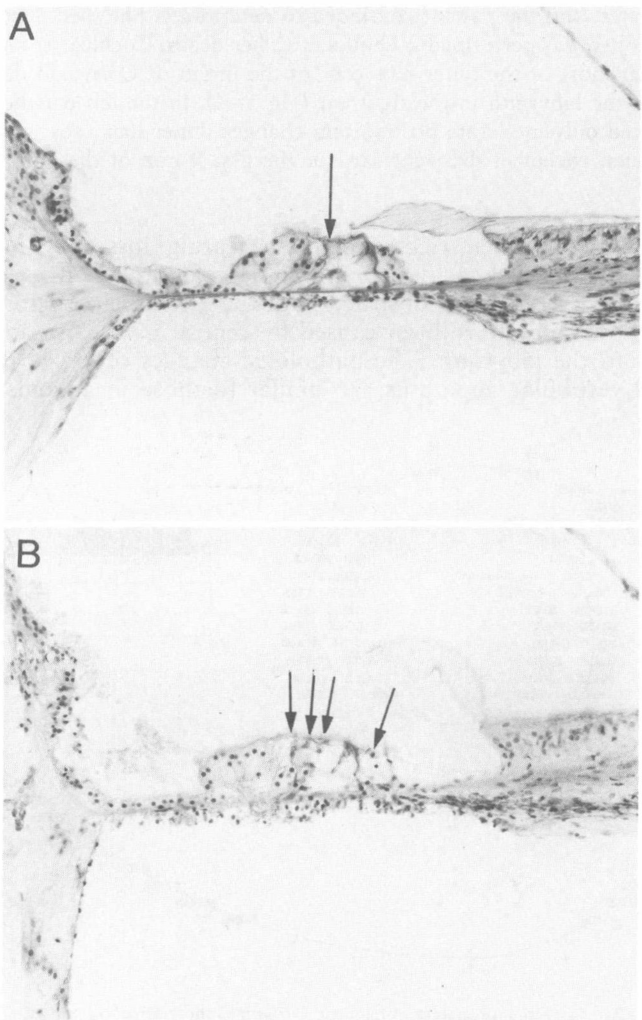

Fig 1–4.—Organ of Corti of basal turn (original magnification, ×195). **A,** right ear shows loss of outer hair cells *(arrow)*. **B,** left ear. Inner and outer hair cells can be recognized *(arrows)*. (Courtesy of Hinojosa R, Kohut RI: *Ann Otol Rhinol Laryngol* 99:261–272, 1990.)

试读结束，需要全本PDF请购买 www.ertongbook.com