

# ARCHIVES

OF

## OTOLARYNGOLOGY- HEAD & NECK SURGERY

The ARCHIVES OF OTOLARYNGOLOGY-HEAD & NECK SURGERY is a member of the consortium of AMA journals listed below. The complete text of all AMA journals is available online from Dialog Information Services and Information Access Company.

**The Journal of the American Medical Association (JAMA)**

**Archives of Dermatology**

**Archives of Family Medicine**

**Archives of General Psychiatry**

**Archives of Internal Medicine**

**Archives of Neurology**

**Archives of Ophthalmology**

**Archives of Otolaryngology-Head & Neck Surgery**

**Archives of Pathology & Laboratory Medicine**

**Archives of Pediatrics & Adolescent Medicine**

**Archives of Surgery**

The ARCHIVES OF OTOLARYNGOLOGY-HEAD & NECK SURGERY (ISSN 0886-4470) is published monthly by the American Medical Association, 515 N State St, Chicago, IL 60610-0946, and is an official publication of the Association. The ARCHIVES OF OTOLARYNGOLOGY-HEAD & NECK SURGERY reaches more than 11 000 readers in over 80 countries each month. Periodicals postage rates paid at Chicago, IL and at additional mailing offices. GST registration number: 12622 5556 RT. Canada Post International Publications Mail (Canadian Distribution) Sales Agreement No. 319066.

Printed in the USA.

Official publication for American Academy of Facial Plastic and Reconstructive Surgery, Inc, American Society for Head and Neck Surgery, and American Society of Pediatric Otolaryngology.

**SUBSCRIPTION RATES**—The personal subscription rates for the ARCHIVES OF OTOLARYNGOLOGY-HEAD & NECK SURGERY are \$195 for 1 year (12 issues) in the United States and US possessions; \$245 in the Americas; £145 outside the Americas. The institution rates for 1 year are \$295 in the United States; \$395 in the Americas; £245 outside the Americas. Special rates for residents and medical students are available. Address all subscription communications to: Subscriber Services Center, American Medical Association, PO Box 10946, Chicago, IL 60610-0946. Phone: (800) 262-2350. Fax: (312) 464-5831. E-mail: ama-sub@ama-assn.org. For mailing addresses outside the United States and US possessions, see International Subscription Information.

**CHANGE OF ADDRESS**—POSTMASTER, send all address changes to ARCHIVES OF OTOLARYNGOLOGY, c/o Subscriber Services, American Medical Association,

515 N State St, Chicago, IL 60610. Please notify us of address change at least 6 weeks in advance to ensure uninterrupted service. Include both old and new addresses, a recent mailing label, and new ZIP code. For mailing addresses outside the United States and US possessions, see International Subscription Information.

**SUBSCRIBER SERVICES**—For information about subscribing to any of the AMA publications, change of address, missing issues, or purchasing back issues, please contact Subscriber Services Center, American Medical Association, PO Box 10946, Chicago, IL 60610-0946, or call (800) 262-2350 or (312) 670-SUBS (670-7827) between 8:30 AM and 4:30 PM CST. Fax: (312) 464-5831. E-mail: ama-sub@ama-assn.org. For mailing addresses outside the United States and US possessions, see International Subscription Information.

**INTERNATIONAL SUBSCRIPTION INFORMATION**—Subscriptions outside the United States and US possessions are served according to geographic region. Please address correspondence to the following 2 offices based on delivery address: (1) For delivery in North America, Central America, and South America, contact Subscriber Services, AMA, PO Box 10946, Chicago, IL 60610-0946. Phone: (312) 670-7827. Fax: (312) 464-5831. E-mail: ama-sub@ama-assn.org. (2) For delivery outside the Americas, contact JAMA & Archives Journals, Reader Services Centre, PO Box 299, London WC1H 9TD, England. Phone: +44 (0)171-383-6270. Fax: +44 (0)171-383-6402. E-mail: jama-archives@dial.pipex.com.

**REPRINTS**—Authors place their reprint order at the time the edited typescript is reviewed and should allow 4 to 6 weeks for delivery following publication. Requests for individual reprints should be sent directly to the author at the address shown in the article.

For bulk reprint orders for distribution by commercial organizations, please contact Wanda Bartolotta, 500 Fifth Ave, #2210, New York, NY 10110. Phone: (212) 354-0050. Fax: (212) 354-1169. E-mail: wanda\_bartolotta@ama-assn.org. For reprint orders in limited quantities for distribution by educational organizations and for author reprints, please contact Joseph R. Rekish, 515 N State St, Chicago, IL 60610. Phone: (312) 464-4594. Fax: (312) 464-4849.

**WORLD WIDE WEB ADDRESS**—<http://www.ama-assn.org>.

**OTOLARYNGOLOGY HOME PAGE**—<http://www.ama-assn.org/oto>.

**PERMISSIONS**—Contact Ada Jimenez-Walker, Permissions Assistant, 515 N State St, Chicago, IL 60610. Phone: (312) 464-2513.

**ADVERTISING PRINCIPLES**—Each advertisement in this issue has been reviewed and complies with the principles governing advertising in AMA scientific publications. A copy of these principles is available on request. The appearance of advertising in AMA publications is not an AMA guarantee or endorsement of the product or the claims made for the product by the manufacturer.

### Publication Staff

Offices: 515 N State St  
Chicago, IL 60610

Editorial Processing Department,  
Archives Journals

**Director:** Paula Glitman

**Manager:** Stacy Christiansen

**Freelance Manager:** Diane L. Cannon

**Freelance Coordinator:**

Connie Manno

**Electronic Editing Specialist:**

Paul Frank

**Assistant Electronic Editing Specialist:**

Monica Mungle

**Senior Copy Editor:** Dee E. Egger

**Copy Editors:**

Hemranee Bhoyroo

Barbara Owczarek

**Editorial Assistant:** Celina Canchola

Scientific Information and  
Multimedia Group

**Administrative Assistant:** Helga Fritz

New Media Editorial Office

**Editorial Director, New Media:**

William M. Silberg

**Associate Editor:** Marty Suter

**Assistant Editors:**

Deborah Flapan

Neil Shankman

**Staff Assistant:** Marla A. Hall



### Production & Distribution Division

**Manager, Budgets & Costs:**

Bonnie Van Clevon

**Publishing Manufacturing Analyst:**

Diane Darnell

**Office Manager:**

Karen Branham

**Senior Secretary:**

Shannon Epplert

Advertising & Production  
Department

**Director:** Karen Adams-Taylor

**Production Specialist:** Terri Hanley

**Manager, Advertising Services:**

Carole Piszker

**Manager, Production Services:**

Susan Price

**Production Associates:**

Debbie Camp

Betty Frigerio

Mari Guizzetti

Sarah Powell

Jo Anne Turner

Carmela Ware

**Production Assistant:** Bryan Irzyk

Distribution

**Distribution Manager:** Paul Gasielcki

**Senior Traffic Control Specialist:**

Michael McGraw

**Traffic Control Specialist:**

Victoria Buckner

Electronic Production Department

**Director:** Linda Knott

**Manager, Composition:** Phil Arko

**Electronic Production Operators:**

Brenda Chandler

Amy Evers

Mary Ann Kuranda

Sandra Lopez

**Manager, Graphics:** Charl Richey

**Graphics Operators:**

Joe Amft

JoAnne Weiskopf

Alicja Wojcik-Dunn

**Manager, Proofreading:**

Teresa H. Omiotek

**Proofreaders:**

David Antos

Daniel James

Mary Kay Tinerella

Barbara Wojtowicz

**Production Assistant:** Ruth Sprague

**Manager, Database & New Media:**

Mary Ellen Johnston

**Indexer:** Kathy Gaydar

**Database Assistants:**

Gail Barrett

La'son J. Diggs

Melanie Parenti

### Specialty Journal Division Office

**Assistant to the Publisher:**

Christine Hearne

Circulation & Content  
Marketing Division

**Administrative Assistant:**

Millette Jackson-Bates

Circulation Processing Department

**Director:** Beverly Martin

Circulation Development Department

**Director:** Bina Oza

Licensing & Permissions Department

**Director:** Norman Frankel

**Permissions:** Ada Jimenez-Walker

**International Coordinator:** Sharon Ali

Reprints

**Reprint Coordinator:** Joseph Rekish



# ARCHIVES

OF

## OTOLARYNGOLOGY- HEAD & NECK SURGERY

[www.ama-assn.org/oto](http://www.ama-assn.org/oto)

VOL 124 NO. 9, SEPTEMBER 1998

### ORIGINAL ARTICLES

**The National Cancer Data Base Report on Cancer of the Head and Neck** 951

Henry T. Hoffman, MD; Lucy Hynds Karnell, PhD; Gerry F. Funk, MD; Robert A. Robinson, MD; Herman R. Menck, MBA

**Long-term Quality of Life After Treatment of Laryngeal Cancer** 964

Jeffrey E. Terrell, MD; Susan G. Fisher, PhD; Gregory T. Wolf, MD; for the Veterans Affairs Laryngeal Cancer Study Group

**Prognostic Staging System for Recurrent, Persistent, and Second Primary Cancers of the Oral Cavity and Oropharynx** 975

Bevan Yueh, MD; Alvan R. Feinstein, MD, MS; Edward M. Weaver, MD; Clarence T. Sasaki, MD; John Concato, MD, MS, MPH

**Osteoinduction Using Bone Morphogenic Protein in Irradiated Tissue** 985

Brian K. Howard, MD; Karla R. Brown, MD; Joseph L. Leach, MD; Cheng-Hui Chang, PhD; David I. Rosenthal, MD

**How Accurate Is Parent Rating of Hearing for Children With Otitis Media?** 989

Richard M. Rosenfeld, MD, MPH; Ari J. Goldsmith, MD; Jane R. Madell, PhD

**Persistence of Group A  $\beta$ -Hemolytic Streptococci in Toothbrushes and Removable Orthodontic Appliances Following Treatment of Pharyngotonsillitis** 993

Itzhak Brook, MD, MSc; Alan E. Gober, MD

**Evaluation of Patients With Sleep Apnea After Tracheotomy** 996

Soo H. Kim, MD; David W. Eisele, MD; Philip L. Smith, MD; Hartmut Schneider, MD; Alan R. Schwartz, MD

**Efficacy of Fiberoptic Laryngoscopy in the Diagnosis of Inhalation Injuries** 1003

Thomas Muehlberger, MD; Dario Kunar, MD; Andrew Munster, MD; Marion Couch, MD, PhD

**Erythema After Cutaneous Laser Resurfacing Using a Porcine Model** 1008

Matthew T. Speyer, MD; Lou Reinisch, PhD; Karen A. Cooper, MD; W. Russell Ries, MD

### CLINICAL NOTES

**Report of the First Case of Invasive Fungal Sinusitis Caused by *Scopulariopsis acremonium*: Review of *Scopulariopsis* Infections** 1014

Matthew D. Ellison, MD; Richard T. Hung, MD; Kevin Harris, BS; Bruce H. Campbell, MD

**Self-inserted Sphenoid Sinus Foreign Bodies** 1018

Ramsey Alsarraf, MD, MPH; Jeffrey W. Bailet, MD, MSPH

**Endoscopic Cauterization for Treatment of Fourth Branchial Cleft Sinuses** 1021

Jennifer A. Jordan, MD; Joe E. Graves, MD; Scott C. Manning, MD; John E. McClay, MD; Michael J. Biavati, MD

## American Medical Association

Physicians dedicated to the health of America



Copyright 1998 by the American Medical Association. All rights reserved. Reproduction without permission is prohibited.

All articles published, including editorials, letters, and book reviews, represent the opinions of the authors and do not reflect the policy of the American Medical Association, the Editorial Board, or the institution with which the author is affiliated, unless this is clearly specified.

**E. Ratcliffe Anderson, Jr, MD**  
Executive Vice President,  
Chief Executive Officer

**Lynn Jensen, PhD**  
Chief Operating Officer

**George D. Lundberg, MD**  
Editor in Chief, Scientific  
Information and Multimedia

**Robert L. Kennett**  
Interim Senior Vice President,  
Publishing & Business Services

**Peter L. Payerli**  
Publisher

**Vanessa Hayden**  
Director, Production &  
Distribution Division

**Cheryl Iverson**  
Director, Editorial Processing  
Division

**James A. Skowrenski**  
Director, Circulation &  
Content Marketing Division

**Geoffrey A. Flick**  
Manager, Marketing Services

**Advertising Offices: East:** Peter G. Messina, 119 Cherry Hill Rd, 3rd Flr, Parsippany, NJ 07054 (973)263-9191. **Midwest/West:** J. P. Cahill & Associates, 341 S Waiola Ave, La Grange, IL 60525 (708) 352-0322. **AMA Classified Advertising Department:** Thalia Moss, 800-262-2260.

<b>Subclavian Pseudoaneurysm Mimicking Recurrent Head and Neck Cancer</b>	<b>1025</b>
<i>Stephen W. Bayles, MD; Owen S. Reichman, MD</i>	
<b>Laryngeal Glycogenic Acanthosis Presenting as Leukoplakia</b>	<b>1029</b>
<i>Billie S. Fyfe, MD; Fernando U. Garcia, MD</i>	
<b>Synchronous Glottic Granular Cell Tumor and Subglottic Spindle Cell Carcinoma</b>	<b>1031</b>
<i>Luis Lassaletta, MD; Soledad Alonso, MD; José Granell, MD; Claudio Ballestín, MD, PhD; Anastasio Serrano, MD; Juan José Álvarez-Vicent, MD, PhD</i>	
<b>Primary T-Cell Non-Hodgkin Lymphoma of the Larynx With Subsequent Cutaneous Involvement</b>	<b>1037</b>
<i>Rémi Marianowski, MD; Michel Wassef, MD; Laurent Amanou, MD; Philippe Herman, MD, PhD; Patrice Tran-Ba-Huy, MD</i>	

#### LETTERS TO THE EDITOR

<b>Harold Hopkins</b>	<b>1042</b>
<i>C. R. Jennings, FRCS</i>	
<b>Is Selective Neck Dissection Really as Efficacious as Modified Radical Neck Dissection for Elective Treatment of the Clinically Negative Neck in Patients With Squamous Cell Carcinoma of the Upper Respiratory and Digestive Tracts?</b>	<b>1042</b>
<i>Charles R. Leemans, MD; Gordon B. Snow, MD</i>	
<b>In Reply</b>	<b>1044</b>
<i>Gary L. Clayman, DDS, MD; Robert M. Byers, MD; Douglas Frank, MD</i>	
<b>Selective Neck Dissection</b>	<b>1044</b>
<i>Bhadrasain Vikram, MD</i>	
<b>In Reply</b>	<b>1044</b>
<i>Jonas T. Johnson, MD</i>	

#### RESIDENT'S PAGE: IMAGING

<b>Imaging Quiz Case 1</b>	<b>1046</b>
<i>William R. Spencer, MD; William R. Reisacher, MD; Matthew W. Shawl, MD; William T. Couldwell, MD, PhD; Augustine Moscatello, MD; Marie Bown-Wagner, MD</i>	

<b>Imaging Quiz Case 2</b>	<b>1047</b>
<i>Joseph Califano, MD; Nasir I. Bhatti, MD; John K. Niparko, MD</i>	

#### CLINICAL CHALLENGES IN OTOLARYNGOLOGY

<b>Unilateral Parathyroid Exploration</b>	<b>1052</b>
<i>Peter E. Andersen, MD; James I. Cohen, MD, PhD; Edwin C. Everts, MD</i>	

<b>Unilateral vs Bilateral Parathyroid Gland Exploration: A Continuing Controversy</b>	<b>1055</b>
<i>Anjum Khan, MD</i>	

<b>Surgical Management of Primary Hyperparathyroidism: Review of My Experience at the University of Vermont</b>	<b>1056</b>
<i>Robert A. Sofferman, MD</i>	

#### REGULAR DEPARTMENTS

<b>American Society for Head and Neck Surgery News</b>	<b>1041</b>
<b>ARCHIVES Web Forum</b>	<b>1056</b>
<b>Calendar</b>	<b>1057</b>
<b>Classified Advertising</b>	<b>1058</b>
<b>Index to Advertisers</b>	<b>1072</b>
<b>Instructions for Authors—</b>	
<b>See January 1998 issue, page 9, or visit the Web site at <a href="http://www.ama-assn.org/oto">www.ama-assn.org/oto</a>.</b>	

## ARCHIVES

OF

### OTOLARYNGOLOGY— HEAD & NECK SURGERY

*Editor:*  
**Michael E. Johns, MD**  
 Emory University  
 Woodruff Health Sciences  
 Administration Building  
 Suite 408  
 1440 Clifton Rd NE  
 Atlanta, GA 30322  
*Assistant Editors:*  
**John K. Niparko, MD**  
 Baltimore, Md  
**William J. Richtsmeier, MD, PhD**  
 Durham, NC  
*Editorial Assistant:*  
**Trina L. Johns**  
*Production Manager:*  
**Catherine A. Alden**  
 (404) 778-2322  
 (404) 778-3100 FAX  
 e-mail: [aohns@emory.edu](mailto:aohns@emory.edu)

*Editorial Board:*  
**Elliot Abemayor, MD, PhD**  
 Los Angeles, Calif  
**John G. Batsakis, MD**  
 Houston, Tex  
**Margaret S. Brandwein, MD**  
 New York, NY  
**Robin T. Cotton, MD**  
 Cincinnati, Ohio  
**Marvin P. Fried, MD**  
 Boston, Mass  
**Patrick J. Gullane, MD**  
 Toronto, Ontario  
**Lauren D. Holinger, MD**  
 Chicago, Ill  
**Paul R. Lambert, MD**  
 Charlottesville, Va  
**Wayne F. Larrabee, Jr, MD**  
 Seattle, Wash  
**Robert H. Miller, MD**  
 New Orleans, La

**H. Bryan Neel III, MD, PhD**  
 Rochester, Minn  
**Jay F. Piccirillo, MD**  
 St Louis, Mo  
**Clarence T. Sasaki, MD**  
 New Haven, Conn  
**Richard J. H. Smith, MD**  
 Iowa City, Iowa  
**Fred J. Stucker, MD**  
 Shreveport, La  
*Section Editors:*  
*Challenges in Clinical Otolaryngology*  
**Karen H. Calhoun, MD**  
 Galveston, Tex  
**Ronald B. Kupper-Smith, MD (Assistant)**  
 Houston, Tex  
*Online Editor*  
**Michael A. Rothschild, MD**  
 New York, NY

*Resident's Page—Imaging*  
**R. Nick Bryan, MD**  
**S. James Zinreich, MD**  
 Baltimore, Md  
*Resident's Page—Pathology*  
**Frederic B. Askin, MD**  
**William H. Westra, MD**  
 Baltimore, Md  
*American Academy of Facial Plastic and Reconstructive Surgery News*  
**Dale H. Rice, MD**  
**Maisie Shindo, MD**  
 Los Angeles, Calif  
*American Society for Head and Neck Surgery News*  
**David W. Eisele, MD**  
 Baltimore, Md  
*American Society of Pediatric Otolaryngology News*  
**Sally R. Shott, MD**  
 Cincinnati, Ohio