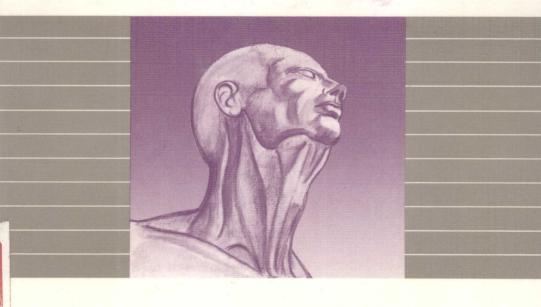
COMMON PROBLEMS IN PEDIATRIC OTOLARYNGOLOGY

Gerald B. Healy



COMMON PROBLEMS IN

PEDIATRIC OTOLARYNGOLOGY

NOT FOR RESALE

GERALD B. HEALY, M.D.

Professor of Otology and Laryngology Harvard Medical School Otolaryngologist-in-Chief The Children's Hospital Boston, Massachusetts





YEAR BOOK MEDICAL PUBLISHERS, INC. Chicago • London • Boca Raton • Littleton, Mass.

Copyright © 1990 by Year Book Medical Publishers, Inc. 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.

1 2 3 4 5 6 7 8 9 0 Y R 94 93 92 91 90

Library of Congress Cataloging-in-Publication Data

Common problems in pediatric otolaryngology / [edited by] Gerald B.

Healy.

p. cm.

Includes bibliographical references.

ISBN 0-8151-4375-3

1. Pediatric otolaryngology. I. Healy, Gerald B., 1942-

[DNLM: 1. Otorhinolaryngologic Diseases—in infancy & childhood.

WV 100 C7336]

RF47.C4C66 1990

618.92'09751—dc20

89-70654

DNLM/DLC

CIP

for Library of Congress

Sponsoring Editor: David K. Marshall

Assistant Director, Manuscript Services: Frances M. Perveiler

Production Project Coordinator: Karen Halm Proofroom Supervisor: Barbara M. Kelly

COMMON PROBLEMS IN OTOLARYNGOLOGY— HEAD AND NECK SURGERY

Series Editor:

Edward L. Applebaum, M.D. Professor of Otolaryngology Department of Otolaryngology University of Illinois College of Medicine Chicago, Illinois

Forthcoming titles: Britton/Common Problems in Otology



vii

CONTRIBUTORS

JAMES E. ARNOLD, M.D.

Assistant Professor Otolaryngology—Head and Neck Surgery and Pediatrics Case Western Reserve University School of Medicine Director, Pediatric Otolaryngology Rainbow Babies and Childrens Hospital Cleveland. Ohio

PATRICK D. BARNES, M.D.

Assistant Professor of Radiology Harvard Medical School Associate Neuroradiologist The Childrens Hospital Boston, Massachusetts

WALTER M. BELENKY, M.D.

Clinical Associate Professor Department of Otolaryngology Wayne State University Medical School Chief, Department of Pediatric Otolaryngology Childrens Hospital of Michigan Detroit, Michigan

BRUCE BENJAMIN, F.R.A.C.S., D.L.O., F.A.A.P.

Lecturer in Laryngology Sydney University Head, Department of Otolaryngology Royal Alexandra Hospital for Children Sydney, Australia

LESLIE BERNSTEIN, M.D., D.D.S.

Former Chairman Department of Otolaryngology University of California at Davis Sacramento, California

CHARLES D. BLUESTONE, M.D.

Professor of Otolaryngology University of Pittsburgh School of Medicine Director, Department of Pediatric Otolaryngology Children's Hospital of Pittsburgh Pittsburgh, Pennsylvania

DAVID R. BROADWAY, M.D.

Staff Physician Vail Medical Center Vail Colorado

LINDA BRODSKY, M.D.

Assistant Professor Otolaryngology and Pediatrics State University of New York at Buffalo Co-Director, Department of Pediatric Otolaryngology Children's Hospital of Buffalo Buffalo, New York

PATRICK E. BROOKHOUSER, M.D.

Father Flanagan Professor and Chairman Department of Otolaryngology and Human Communication Creighton University Director, Boys Town National Research Hospital Omaha, Nebraska

FRANCIS I. CATLIN, M.D., Sc.D.

Professor of Otorhinolaryngology and Communicative Sciences Baylor College of Medicine Chief of Otolaryngology Service Texas Children's Hospital Houston, Texas

PATRICIA M. CHUTE, M.A.

Director, Cochlear Implant Center Children's Hearing Institute Manhattan Eye, Ear and Throat Hospital New York. New York

ROBIN T. COTTON, M.D.

Professor, Otolaryngology and Maxillofacial Surgery University of Cincinnati College of Medicine Director, Otolaryngology and Maxillofacial Surgery Children's Hospital Medical Center Cincinnati, Ohio

DENNIS M. CROCKETT, M.D.

Assistant Professor Department of Otolaryngology-Head and Neck Surgery University of Southern California Children's Hospital of Los Angeles Los Angeles, California

WILLIAM S. CRYSDALE, M.D., F.R.C.S.(C)

Associate Professor University of Toronto Otolaryngologist in Chief Hospital for Sick Children Toronto, Canada

JOHN D. DONALDSON, M.D., F.R.C.S.C., F.A.A.P.

Head, Department of Otolaryngology IWK Children's Hospital Halifax, Nova Scotia

ROLAND D. EAVEY, M.D.

Assistant Professor of Otolaryngology Harvard Medical School Director, ENT Pediatric Services Massachusetts Eye and Ear Infirmary Boston, Massachusetts

DONALD R. ENDRES, M.D.

University of California at San Diego School of Medicine San Diego, California

ABRAHAM EVIATAR, M.D., F.A.C.S.

Professor of Otolaryngology Albert Einstein College of Medicine Chief of Otolaryngology Weiler Hospital of the Albert Einstein College of Medicine Bronx, New York

BENJAMIN K. FINKELHOR, M.D.

Assistant Professor Washington University Medical Center Assistant Pediatric Otolaryngologist St. Louis Children's Hospital St. Louis, Missouri

ELLEN M. FRIEDMAN, M.D.

Assistant Professor Harvard Medical School Associate Otolaryngologist Children's Hospital Boston, Massachusetts

GEORGE A. GATES, M.D.

Washington University School of Medicine Barnes Hospital St. Louis, Missouri

STEVEN D. HANDLER, M.D.

Associate Professor of Otolaryngology and Human Communication University of Pennsylvania School of Medicine Associate Director of Otolaryngology Children's Hospital of Philadelphia Philadelphia, Pennsylvania

JEFFREY P. HARRIS, M.D., Ph.D.

Professor of Surgery/Otolaryngology University of California at San Diego Professor and Chief Division of Otolaryngology University of California at San Diego Medical Center San Diego, California

DONALD B. HAWKINS, M.D., F.A.C.S., F.A.A.P.

Associate Professor of Otolaryngology-Head and Neck Surgery
Chief, Division of Pediatric Otolaryngology
University of Southern California School of Medicine
Director of Pediatric Otolaryngology
Los Angeles County and University of Southern California Medical Center
Los Angeles, California

GERALD B. HEALY, M.D.

Professor of Otology and Laryngology Harvard Medical School Otolaryngologist-in-Chief The Children's Hospital Boston, Massachusetts

SHARON A. HELLMAN, M.S.

Audiologist Children's Hearing Institute Manhattan Eye, Ear and Throat Hospital New York, New York

LAUREN D. HOLINGER, M.D.

Instructor, Northwestern University Medical School Attending Physician Children's Memorial Hospital Chicago, Illinois

CHARLES C. HUMPHREY, M.D.

Neurologist, Central Maine Medical Center Lewiston, Maine

LEONARD B. KABAN, D.M.D., M.D.

Professor and Chairman
Department of Oral and Maxillofacial Surgery
University of California at San Francisco
Chief, Oral and Maxillofacial Surgery
Moffitt/Long Hospital
San Francisco, California

MARGARET A. KENNA, M.D.

Associate Professor Surgery and Pediatrics Yale University School of Medicine Attending Physician Yale-New Haven Hospital New Haven, Connecticut

ALAN M. LEICHTNER, M.D.

Assistant Professor of Pediatrics Harvard Medical School Clinical Director of Gastroenterology The Children's Hospital Boston, Massachusetts

RODNEY P. LUSK, M.D.

Assistant Professor Washington University Medical Center Director, Pediatric Otolaryngology St. Louis Children's Hospital St. Louis, Missouri

TREVOR McGILL, M.D., M.C.H.

Associate Professor of Otolaryngology Harvard Medical School Associate Otolaryngologist-in-Chief Children's Hospital Boston, Massachusetts

JOHN J. McNAMARA, M.D.

Instructor in Pediatrics The Harvard Medical School Assistant in Medicine The Children's Hospital Boston, Massachusetts

GREGORY MILMOE, M.D.

Assistant Professor George Washington University Staff Otolaryngologist Children's National Medical Center Washington, D.C.

HARLAN R. MUNTZ, M.D.

Assistant Professor Washington University Medical Center Assistant Pediatric Otolaryngologist St. Louis Children's Hospital St. Louis, Missouri

JOSEPH B. NADOL, JR., M.D.

Walter Augustus Lecompte Professor of Otology and Laryngology Harvard Medical School Chief of Otolaryngology Massachusetts Eye and Ear Infirmary Boston, Massachusetts

TIMOTHY J. O'SULLIVAN, F.R.C.S.(C), D.A.B.(Otol.)

Lecturer in Otolaryngology University College Consultant Otolaryngologist South Infirmary/Victoria Hospital Cork, Ireland

SIMON C. PARISIER, M.D.

Clinical Professor Otolaryngology Cornell Medical Center Chairman, Department of Otolaryngology-Head and Neck Surgery Manhattan Eye, Ear and Throat Hospital New York, New York

WILLIAM D. POTSIC, M.D.

Associate Professor of Otolaryngology University of Pennsylvania Director of Otolaryngology Children's Hospital of Philadelphia Philadelphia, Pennsylvania

MARK A. RICHARDSON, M.D.

Associate Professor
University of Washington
Chief, Division of Otolaryngology
Associate Director
Department of Surgery
Children's Hospital and Medical Center
Seattle, Washington

GEORGE T. SIMPSON II, M.D., M.P.H.

Associate Professor of Otolaryngology Boston University School of Medicine Director of Otolaryngology Boston City Hospital Boston, Massachusetts

HOWARD G. SMITH, M.D.

General and Medical Director Boston Children's Deafness Network Associate in Otolaryngology Children's Hospital Boston, Massachusetts

SYLVAN E. STOOL, M.D.

Professor of Otolaryngology and Pediatrics University of Pittsburgh School of Medicine Director of Otolaryngology Education Children's Hospital of Pittsburgh Pittsburgh, Pennsylvania

ROY D. STRAND, M.D.

Associate Professor in Radiology Harvard Medical School Neuroradiologist, The Children's Hospital Boston, Massachusetts

M. EUGENE TARDY, JR., M.D., F.A.C.S.

Professor of Clinical Otolaryngology-Head and Neck Surgery University of Illinois Medical Center Chicago, Illinois

ROBERT F. WARD, M.D.

Assistant Professor of Otolaryngology Cornell University Medical College Attending Physician New York Hospital New York, New York

MARILYN P. WARREN, Ph.D

Instructor in Otolaryngology Harvard Medical School Coordinator of Audiology Services The Children's Hospital Boston, Massachusetts

RALPH F. WETMORE, M.D.

Assistant Professor University of Pennsylvania School of Medicine Associate Surgeon Children's Hospital of Philadelphia Philadelphia, Pennsylvania

PREFACE

Pediatric Otolaryngology has rapidly come of age in North America over the past 10 years. The emergence of the American Society of Pediatric Otolaryngology gives evidence that this important area of otolaryngology-head and neck surgery is alive, well, and growing.

The following pages contain the management philosophies of many of the men and women who form the backbone of this area of our specialty. It is hoped that the reader will gain an insight into the uniqueness of the pediatric population afflicted with disorders of the head and neck region.

I wish to express my deep gratitude to all the authors who took the time to share their ideas on these important topics with our readers. I also must acknowledge my administrative assistant, Linda Van Auker, whose dedication and commitment to the organization of this book was invaluable.

GERALD B. HEALY, M.D.

CONTENTS

Preface xvii

PART I: OTOLOGY 1

Charles D. Bluestone
2 / CONGENITAL CHOLESTEATOMA 13 James E. Arnold
3 / Vertigo in Children: Diagnosis and Management 19 Abraham Eviatar
4 / Sarah: A Case Study in the Diagnosis and Management of Sensorineural Hearing Loss in a Pre-school Child 29 Howard G. Smith
5 / SURGERY FOR CONGENITAL AURAL ATRESIA 39 Jeffrey P. Harris and Donald Endres
6 / COCHLEAR IMPLANTS IN CHILDREN 51 Simon C. Parisier, Patricia M. Chute, and Sharon A. Hellman
7 / Ossiculoplasty in Children 65 Joseph B. Nadol, Jr.
8 / FACIAL PARALYSIS 75 Roland D. Eavey
9 / Otorrhea: Common Causes and Management 81 Margaret A. Kenna
10 / PERILYMPHATIC FISTULA IN CHILDREN 89 Patrick E. Brookhouser
11 / CHRONIC OTITIS MEDIA WITH CHOLESTEATOMA 101 Ralph F. Wetmore
12 / AUDIOMETRIC EVALUATION IN CHILDREN 111 Marilyn P. Warren
13 / Imaging of Petrous Temporal Bone Abnormalities in Infancy and

Roy D. Strand, Charles C. Humphrey and Patrick D. Barnes

1 / Otitis Media: Management and Prevention 3

	0
XX	Contents

14 /	Otologic Trauma 131 John D. Donaldson	
15 /	THE ATELECTATIC EAR AND RETRACTION POCKETS 139 Mark A. Richardson	
16 /	HEARING AIDS IN CHILDREN 145 Francis I. Catlin	
PAF	RT II: NOSE AND SINUSES 155	
17 /	NASAL OBSTRUCTION IN CHILDHOOD 157 Linda Brodsky	
18 /	Management of the Deviated Septum in Children 165 Gerald B. Healy	
19 /	CHOANAL ATRESIA 171 Rodney P. Lusk	
20 /	CYSTIC FIBROSIS IN CHILDREN 179 John J. McNamara	
	SEPTORHINOPLASTY IN THE PREADOLESCENT M. Eugene Tardy, Jr. and David R. Broadway	
22 /	SINUSITIS: ACUTE, CHRONIC, AND COMPLICATIONS 209 Gregory J. Milmoe	
	IMAGING OF THE HEAD AND NECK IN CHILDHOOD 217 Charles C. Humphrey, Roy D. Strand, and Patrick D. Barnes	
24 /	FACIAL FRACTURES IN CHILDREN 237 Leonard B. Kaban	
25 /	CONGENITAL LESIONS OF THE NOSE AND PARANASAL SINUSES Benjamin K. Finkelhor	1
26 /	Angiofibroma of the Nasopharynx 257 Trevor McGill	
PAF	RT III: HEAD AND NECK 265	
27 /	EPISTAXIS IN CHILDREN 267 Timothy J. O'Sullivan	
	VELOPHARYNGEAL INCOMPETENCE 275 Dennis M. Crockett	
	SALIVARY GLAND DISEASE IN CHILDREN 289 George A. Gates	
	TONSILLECTOMY AND ADENOIDECTOMY: AN UPDATE PLUS SLEEP APNEA 297 William P. Potsic	

xxi

31 / DENTAL DEVELOPMENT AND ABNORMALITIES 303 Leslie Bernstein
32 / Drooling in Children 323 William S. Crysdale
33 / Evaluation of Neck Masses in Children: Benign, Malignant, and Congenital 329 Steven D. Handler
34 / Chronic Cough in Children 341 Lauren D. Holinger
35 / HEAD AND NECK TUMORS IN CHILDREN 349 Robert F. Ward
PART IV: LARYNGOBRONCHOESOPHAGOLOGY 357
36 / Evaluation of Stridor 359 Gerald B. Healy
37 / Inflammatory Disorders of the Airway 367 Ellen M. Friedman
38 / GASTROESOPHAGEAL REFLUX IN CHILDREN 375 Alan M. Leichtner
39 / Corrosive Injury of the Esophagus 383 Walter M. Belenky
40 / Hoarseness in Children 395 Harlan R. Muntz
41 / Foreign Bodies 401 Ellen M. Friedman
42 / RECURRENT RESPIRATORY PAPILLOMATOSIS 407 George T. Simpson II
43 / Laryngeal Stenosis: Current Management 415 Robin T. Cotton
44 / Tracheotomy and/or Intubation 423 Sylvan E. Stool
45 / Flexible Endoscopy of the Pediatric Airway 431 Donald B. Hawkins
46 / The Vocal Nodule: To Remove? 439 Bruce Benjamin
47 / CONGENITAL ANOMALIES OF THE LARYNX 447 Trevor McGill
Index 457

Otology