THE PEDIATRIC AIRWAY

Cry, Stridor, and Cough

EDITED BY

Jenö Hirschberg • Tamás Szende
Peter J. Koltai • András Illényi

CO-EDITORS

István Lellei • Zsolt Garay

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CONTENTS

CONTRIBUTORS

Balázs Benyó, Ph.D., C.Sc. *(Chap. 5)*
Associate Professor
Electrical Engineer and Information Technology Specialist
Affiliation: Budapest University of Technology and Economics, Hungary
Department of Control Engineering and Information Technology

Zoltán Benyó, Ph.D., D.Sc. Dr. Habil (Techn. Sci.) *(Chap. 5)*
Professor
Electrical Engineer
Affiliation: Budapest University of Technology and Economics, Hungary
Department of Control Engineering and Information Technology

Zsolt Farkas, M.D., Ph.D. *(Chap. 4, 7)*
Chief
Otorhinolaryngologist, Audiologist, Phoniatrician
Affiliation: Heim Pál Hospital for Sick Children, Budapest, Hungary
Department of Pediatric Oto-rhino-laryngo-bronchology, Phoniatrics and Audiology & Cleft Palate Center

Zsolt Garay, M.D. *(Chap. 5, 7, DVD)*
Chief
Otorhinolaryngologist, Audiologist, Phoniatrician
Affiliation: Budai Children's Hospital, Budapest, Hungary
Department of Pediatric Oto-rhino-laryngo-bronchology, Phoniatrics and Audiology & Cleft Palate Center

JenőHirschberg, M.D., Ph.D., D.Sc., Chief Editor *(Chap. 1, 2, 3, 4, 5, 6, 7, 8, 9, DVD)*
Professor, Scientific Consultant
Otorhinolaryngologist, Phoniatrician, Audiologist, Cleft Palate Surgeon
Affiliation: Budai Children's Hospital, Budapest, Hungary
Department of Pediatric Oto-rhino-laryngo-bronchology, Phoniatrics and Audiology & Cleft Palate Center

Kristóf Hirschberg, M.D. *(Chap. 7, DVD)*
Ph.D. (doctorate) Student
Affiliation: Institute of Cardiovascular Surgery and
Hungarian National Ambulance and Emergency Service
Budapest, Hungary

András Illényi, M.Sc., Ph.D. *(Chap. 1, 5, 7, 9)*
Professor Em.
Master of Physics and Acoustics
Affiliation: Budapest University of Technology and Economics, Hungary
Department of Telecommunications and Media Informatics

Gábor Katona, M.D., Ph.D. *(Chap. 7)*
Chief and Head
Pediatrician, Otorhinolaryngologist, Audiologist
Affiliation: Heim Pál Hospital for Sick Children, Budapest, Hungary
Department of Pediatric Oto-rhino-laryngo-bronchology, Phoniatrics and Audiology & Cleft Palate Center

Peter J. Koltai, M.D., FACS, FAAP *(Chap. 1, 4, 5, 7, 9)*
Professor and Head
Otolaryngologist
Affiliation: Stanford University School of Medicine
Division of Pediatric Otolaryngology, Stanford, California

István Lellei, M.D. *(Chap. 5, 7, 8)*
Chief and Head
Otorhinolaryngologist
Affiliation: Budai Children's Hospital, Budapest, Hungary
Department of Pediatric Oto-rhino-laryngo-bronchology, Phoniatrics and Audiology & Cleft Palate Center

Tamás Szende, Ph.D., D.Sc. *(Chap. 1, 5, 7, 8, 9, DVD)*
Professor and Head
Linguist-Phonetician
Affiliation: Pázmány Péter Catholic University, Piliscsaba, Hungary
Department of General Linguistics and
Hungarian Academy of Sciences, Institute of Linguistics, Budapest, Hungary

Zsuzsa Trenovszki *(Chap. 5)*
Ph.D. (doctorate) Student
Speech Pathologist
Affiliation: Madarász Children's Hospital, Budapest, Hungary
Department of Otorhinolaryngology, Logopedics & Cleft Palate Center

György Várallyay Jr., M.Sc. *(Chap. 5, DVD)*
Ph.D. (doctorate) Student
Electrical and Biomedical Engineer
Affiliation: Budapest University of Technology and Economics, Hungary
Department of Control Engineering and Information Technology

PREFACE

THIS BOOK is based on a previous publication (cf. J. Hirschberg & T. Szende: *Pathological Cry, Stridor and Cough in Infants. A Clinical-Acoustic Study,* Akadémiai Kiadó, Budapest, 1982). Although the concepts presented in the original work remain valid, the technical advances of the last 25 years in the fields of imaging, endoscopic documentation, computer-aided acoustic measurements, and therapeutic management, have provided us the opportunity to update and expand on the insights detailed in the earlier text. For a measure of continuity, this work retains pertinent citations and data from the original text in order to highlight the evolutionary developments within the discipline. Furthermore, our previous clinical investigations have been continuously enlarged by acoustic evaluation of different respiratory sounds from diseases that were not discussed in the first edition. The present book represents the work of several Hungarian clinicians and scientists from various disciplines, such as pediatric otorhinolaryngology, bronchoesophagology, pediatrics, phoniatrics, audiology, cardiovascular surgery, linguistics, phonetics, acoustics, speech pathology, electrical and biomedical engineering, and information technology. In this edition we have included contributions from international colleagues in order to open a broader perspective of the field for the reader.

The main goal of our study is to understand the nature of pathologic sound originating in the respiratory tract. Such acoustic phenomenon can be the characteristic symptoms of different diseases, including airway obstruction, neurologic abnormalities, and chromosomal derangements. Unusual airway sounds from a child may furnish important diagnostic clues; therefore, careful analysis can be an important and sometimes vital aspect of the physical examination.

In the course of 45 years of practice in pediatric laryngobronchology, phoniatrics, and acoustics we observed and systematically described more than 40 different pathologic sounds, often occurring in different combination with each other, in as many pathologic conditions. Evaluation

of the origin of pathologic phonation and respiratory noises as well as cough sounds relies on the traditional diagnostic modalities of endoscopic visualization, radiologic imaging, and electrophysiologic monitoring, which today remain indispensable. On the other hand, we also emphasize and indeed focus on the value of the perceptive auditory evaluation and objective acoustic analysis of the sound phenomena in question. Our work has consistently demonstrated the value of acoustic measurement as a convenient diagnostic, documentative, and teaching tool.

We begin this book with a description of the acoustic characteristics of the physiologic normal infant cry and then follow with a characterization of pathologic sound phenomena occurring in a wide variety of respiratory and neurologic diseases. In the attached DVD the reader can hear the sounds described in the text, along with case histories, sonagrams, radiologic imaging, and appropriate endoscopic photographs. We also describe contemporary therapeutical management of the conditions presented. Consequently, the volume encompasses the salient aspects of medical acoustics and pediatric laryngology.

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Jenő Hirschberg
Tamás Szende
Peter J. Koltai
András Illényi
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