Endoscopic Color Atlas of Ear Diseases
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Endoscopic Color Atlas of Ear Diseases

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Dedicated to

My parents, Mr Muhamed S Khan and Mrs Khairunisa M Khan
My Wife Dr Shirin Khan
My Son, Master Asim Khan
— Mubarak Muhamed Khan

My parents, Mr Ramkrishna V Parab and Mrs Subhadra R Parab
— Sapna Ramkrishna Parab
Foreword

It is roughly estimated that 4% of our population is suffering from some kind of ear pathology out of which majority suffer from chronic middle ear infection.

In spite of significant development of training otologists, there is still a wide gap between requirement and availability of trained otologists. This perhaps is due to insufficient number of otology centers and inadequate instrumentation for diagnosing middle ear pathology.

Dr Mubarak Muhamed Khan and Dr Sapna Ramkrishna Parab have painstakingly collected a large number of cases and have photographed the pathological conditions of middle ear. This monogram will help budding otologists to learn from these photographs.

This atlas is a well-documented book which will help all the otologists. There are excellent illustrations of very rare conditions as well as common conditions.

This work will not only help students of otology to diagnose middle ear pathology but also help them in their practice to formulate therapy for patients.

This atlas should be like a Bible to all and should remain in possession of all young and old otolaryngologists during treating ear conditions.

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Foreword

It gives me immense pleasure to pen a Foreword for this book “Endoscopic Color Atlas of Ear Diseases.”

The book contains endoscopic photographs of all the diseases of external ear and middle ear.

It covers majority of the topics to give a wider dimension of the ear pathologies. The number of endoscopic color photographs—271 is quite a large.

The authors, Dr Mubarak Muhamed Khan and Dr Sapna Ramkrishna Parab have done a wonderful job. Both of them are on teaching faculties of MIMER Medical College, Talegaon-D, Pune and take keen interest in teaching methodology.

This book will be useful as a reference book for all the undergraduate and postgraduate medical students, consulting ENT surgeons and general practitioners.

With the aid of this book, even general practitioners and pediatricians will be able to diagnose ear diseases with the help of otoscope.

The authors deserve all the praise and congratulations for introducing this book in a novel method of teaching methodology.

I am sure everybody will appreciate this book and use it for practice.

Suresh Ghaisas
MS ENT, Bom, DORL
Medical Director
MIMER Medical College
Talegaon-D, Pune
Vice President,
MAEER's MIT group of Institutions,
Pune, Maharashtra, India
Dr Mubarak Muhamed Khan has been my close associate for the last ten years and it gives me great pleasure and satisfaction to write this Foreword.

He has dared to bring out the book Endoscopic Color Atlas of Ear Diseases. By pictorial depiction of various ear conditions, the basic conceptual knowledge gets further augmented and supplemented. This conceptualization acts as a diagnostic tool by infusing clarity of thought.

The color photographs are brilliant, realistic and self-explanatory. I should commend the technical and technological expertise of Dr Mubarak Muhamed Khan and Dr Sapna Ramkrishna Parab for this enterprise.

The ‘foot notes’ are crisp and thoughtfully written. Kudos to Dr Sapna Ramkrishna Parab, Assistant Professor in ENT for her stupendous effort.

I am sure this book would be of immense help to undergraduate and postgraduate students, general practitioners, teachers, residents and all fraternity members.

Brig GS Gopal MS DLO
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Ex Prof (ENT)
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Pune, Maharashtra, India
(Currently Emeritus Professor)
Preface

Middle ear anatomy is quite complex. Rendering a concrete picture of middle ear using only words had been always a challenging task. The extent of the imagination required by the students to understand this complex three-dimensional anatomy had always been very distressing to us as teachers. This led to our attempts to supplement our lectures with endoscopic ear images (of patients from our clinical practice) to enhance the knowledge of the students. This constant effort to solve the doubts of the students in the best possible way was the driving force behind this atlas.

The photographs in this atlas were obtained by using 4 mm zero degree sinuscope that can be easily passed beyond the isthmus of the external auditory canal so as to allow the visualization of the entire tympanic membrane. The clarity and the optics of the endoscope give greater information of the ear conditions. The zero degree sinuscope can be connected to a CCD camera and recording facility to capture images.

Before discussing the pathological conditions of the external and the middle ear, we have detailed the description of the normal tympanic membrane along with its variations. The appearance of the tympanic membrane is altered in various acute and chronic conditions affecting the middle ear. The alteration in its color, surface, intactness and position has been well illustrated in this atlas.

The photographs included in the atlas are of both the left and the right tympanic membranes that will enable the reader to have a better understanding of the normal anatomy. This will also reduce the confusion related to knowing the side of the affected tympanic membrane. Ear disorders are one of the most common diseases encountered in ear, nose and throat practice. The correct diagnosis of ear diseases requires a thorough knowledge of the normal anatomy and its alteration in pathological conditions.

This atlas gives a clear and lucid description of the various conditions represented in the photographs. We believe that this atlas will definitely be of immense help not only to the undergraduate and the postgraduate students, the ENT fraternity but also to general practitioners who also get a regular share of ENT patients.

This atlas will definitely supplement the standard ENT textbooks for a further in-depth pictorial depiction of the ear disorders and thus facilitate proper diagnosis for dispensing appropriate treatment for otological disorders.

It is quite possible that there could be errors of omission and commission in the atlas. We would be very grateful to the readers for their suggestions to improve the atlas.

The aim of this atlas is to attract and inspire the students for a deeper dive into the subject of ENT.

Mubarak Muhamed Khan
Sapna Ramkrishna Parab
We respectfully wish to thank Professor Dr Vishwanath D Karad (Executive President and Managing Trustee, MAEER’s MIT Group of Institutions, Pune, India) for giving us the opportunity to work in esteemed MIMER Medical College, Talegaon-D, Pune.

We extend our respect and gratitude towards Dr Suresh G Ghaisas (Medical Director, MIMER Medical College, and Vice President, MAEER’s MIT Group of Institutions, Pune, India and leading ENT practitioner in Pune) for his inspiration and encouragement in our research activities.

We would like to take this privilege to thank our great friend, Dr Virendra S Ghaisas (Executive Director and Associate Professor, ENT, MIMER Medical College), a leading Rhinoplasty Surgeon of Pune. His innovative ideas have been a continuous source of inspiration to us.

Our special thanks are to Dr Mrs Suchitra Nagare (Executive Director, MIMER Medical College, Pune, Maharashtra, India) for her valuable suggestions.

We are extremely thankful to Dr Robert Vincent, Causse Ear Clinique, France for allowing us to use his two photographs on congenital cholesteatoma and glomus tumor that helped to complete our atlas in all respects.

We wish to express our deep sense of gratitude to our respected Professor Emeritus, Dr Brig GS Gopal, for his caring and loving nature, fatherly guidance and help throughout and especially for this atlas. His sound advice, learned suggestions, valuable guidance and constant encouragement at every stage of this work was very rewarding, without which this work would not have been possible.

We are extremely grateful to all the faculty members of ENT Department MIMER Medical College—Dr Mrs GN Sial (Prof and Head), Dr Prakash Kulkarni, Dr Toral Mehta, Dr Ganesh Pentewar and Dr Mrs Gauri Mahajan.

It gives us great pleasure to acknowledge our deep sense of gratitude and indebtedness to our respected teachers, Dr Mrs Jaiswal (Prof and HOD, GMC, Solapur), Dr ABR Desai (Mumbai), Dr AG Pusalkar (Mumbai), Dr Jobhanputra (Centenary Hospital Kandevali), Dr CP Das (Prof and HOD, GMC, Goa), Dr Carnegie D’sa, Dr HC Goel, Dr Chodankar (GMC, Goa).

We would like to specially thank Dr Prashant S Tatiya, an established general practitioner. He expressed the need for ENT atlas, which would give a pictorial overview of ear diseases to general practitioners.

We need to thank our Parents for their constant support.

Our special thanks to Dr Mrs Shirin Mubarak Khan for her loving care and support since inception till completion of the atlas. We appreciate the patience shown by Master Asim Mubarak Khan during the process of creating this atlas.

We are grateful to Champa, Sandip, Sandhya, Sunil and Anushka Parab for their loving care and encouragement shown all these years.

We are very grateful to the authors of various publications, whose knowledge have been freely utilized in the preparation of this atlas.

We thank all our patients; without whom, this atlas would have not been possible.

Last but not least: we extend our deep sense of gratitude to our dear friend, Mr Nitin Patil, a multifaceted personality. We are thankful to him for his contribution in spite of his fulltime profession in IT industry. He has helped with the digital recording set up of endoscopic diagnostic and operative procedures. He has helped with the capture of still images from video stream and converting into printing format. He was instrumental in transcription and annotation of the description of the images.

Above all, we are thankful to the Almighty GOD.
## Contents

1. Normal Tympanic Membrane .................................................................1

2. External Auditory Canal ........................................................................7
   Wax ...............................................................................................................7
   Otitis Externa ...............................................................................................9
   Allergic otitis externa ...................................................................................9
   Fungal otitis externa/otomycosis .................................................................10
   Furuncle/localized otitis externa .................................................................13
   Herpes zoster oticus .....................................................................................13
   Malignant otitis externa with acute otitis media .......................................16
   Diffuse otitis externa with adhesive otitis media .......................................17
   Otitis externa with perforation ..................................................................17
   Otitis externa with stenosis .......................................................................18
   Foreign Bodies ...........................................................................................19
   Eardrop cap .................................................................................................19
   Pea-nut – before and after removal .............................................................20
   Live insect ....................................................................................................21
   Metallic foreign body ....................................................................................22
   Organic foreign body ...................................................................................23
   Perforation with sand particle ....................................................................24
   Plastic tube – before and after removal .......................................................25
   Pencil eraser .................................................................................................26
   Tobacco .........................................................................................................26
   Miscellaneous foreign bodies ......................................................................27
   External Auditory Canal Polyp ...................................................................33
   Keratosis Obturans .....................................................................................34
   External Auditory Canal after Keratosis Removal .....................................35

3. Acute Otitis Media ...................................................................................37
   Stage of congestion ......................................................................................37
   Stage of pre suppuration .............................................................................39
   Stage of perforation ....................................................................................40
   Stage of resolution .......................................................................................43
   Acute Otitis Media with Otitis Externa .......................................................44
   Acute Otitis Media Post Tympanoplasty ....................................................46

4. Safe Chronic Suppurative Otitis Media ..................................................48
   Chronic Suppurative Otitis Media-active ....................................................48
   Chronic Suppurative Otitis Media - Inactive ..............................................52
   Chronic Suppurative Otitis Media - Post Treatment .................................54
5. Perforations

Anteroinferior Perforation ................................................................. 56
Anterosuperior Perforation ............................................................... 57
Posteroinferior Perforation ............................................................... 58
Posterosuperior Perforation .............................................................. 60
Medium Perforation ........................................................................ 61
Large Central Perforation ................................................................. 62
Subtotal Perforation ........................................................................ 64
Marginal Perforation ........................................................................ 68
Total Perforation ............................................................................. 69
Multiple Perforation ......................................................................... 70
Central Perforation with Tympanosclerosis ....................................... 71
Central Perforation with Otitis Externa ............................................ 73
Perforation with Discharge ............................................................... 74
Pseudoperforation ........................................................................... 75

6. Traumatic Perforations .................................................................... 76

7. Tympanosclerosis

Tympanosclerosis ........................................................................... 84
Tympanoscleroris with Acute Otitis Media ........................................ 89

8. Unsafe Chronic Suppurative Otitis Media

Anterior Cholesteatoma ................................................................. 90
Attic Cholesteatoma ........................................................................ 91
Attic Polyp ...................................................................................... 93
Atticoantral Cholesteatoma ............................................................. 96
Cholesteatoma in Post Tympanoplasty .............................................. 99
Cholesteatoma with Polyp ............................................................... 100
Early Attic Retraction without Cholesteatoma ................................. 101
Masked Cholesteatoma with Mastoiditis ......................................... 102
Natural Modified Radical Mastoidectomy ......................................... 103
Posterosuperior Cholesteatoma ....................................................... 104
Posterosuperior with Attic Cholesteatoma ...................................... 107
Extensive Cholesteatoma ................................................................. 108
Safe Chronic Suppurative Otitis Media Turning Unsafe ................. 110
Scutum Erosion .............................................................................. 111
External Auditory Canal Cholesteatoma ......................................... 112
Congenital Cholesteatoma .............................................................. 114

9. Otitis Media with Effusion ............................................................... 115

10. Ventilation Tube (Grommet) ............................................................ 118

11. Granular Myringitis ..................................................................... 119

12. Hemotympanum .......................................................................... 120
## Contents

13. **Pre and Post Operative Cases** ....................................................................................................................122
   Recurrent and Residual Perforations.............................................................................................................138
   Postoperative Follow-up at 2 Years .............................................................................................................139

14. **Tuberculous Otitis Media** ........................................................................................................................143

15. **Tympanic Membrane in Allergic Rhinitis** ..................................................................................................145

16. **Adhesive Otitis Media** ...............................................................................................................................146
   Grade 1 ..........................................................................................................................................................146
   Grade 2 ..........................................................................................................................................................148
   Grade 3 ..........................................................................................................................................................150
   Grade 4 ..........................................................................................................................................................151

17. **Barotraumatic Otitis Media** ......................................................................................................................152

18. **Tumors** ......................................................................................................................................................153
   Hemangioma..................................................................................................................................................153
   External Auditory Canal Osteoma ..................................................................................................................155
   Papilloma.......................................................................................................................................................157
   Squamous Cell Carcinoma.............................................................................................................................158
   Glomus tumor ...............................................................................................................................................159

19. **Exploration of the Middle Ear** ..................................................................................................................160
   Bibliography ...............................................................................................................................................165
   Index ..............................................................................................................................................................167
Chapter 1

Normal Tympanic Membrane

The normal tympanic membrane is translucent and is pearly white in color. It forms the partition between the external auditory canal and the middle ear. It takes the pink color of the underlying middle ear mucosa. It is 9-10 mm tall, 8-9 mm wide and 0.1 mm thick. It is divided into pars tensa and pars flaccida.

Pars tensa forms most of the tympanic membrane. Its periphery is thickened to form a fibrocartilaginous ring called the annulus tympanicus, which fits in the tympanic sulcus. The central part of pars tensa is tented inwards at the level of the tip of malleus and is called the umbo.

Pars flaccida is situated above the lateral process of malleus between the notch of Rivinus and the anterior and posterior malleolar folds. It is not so taut and may appear slightly pinkish.

Here are the photographs that will enable the reader to have an idea of the broad spectrum of normal tympanic membrane and its variations.

Figure 1
This normal translucent left tympanic membrane allows visualization of underlying:
1. Handle of malleus
2. Lateral process of malleus
3. Long process of incus
4. Cone of light
The anterior part of the tympanic annulus is often hidden from view during otoscopy due to overhang (arrow)