

FOREWORD

Atlas of Nasal Cytology for the Differential Diagnosis of Nasal Diseases is a landmark work by the world's foremost expert on nasal cytology, Matteo Gelardi.

Unlike the lungs and ears, the nose is a part of the respiratory tract from which it is possible to readily obtain a sample of the cells that represent the current status of the health or disease of the tissue and mucous. Because of the dedicated work of Matteo Gelardi over the past 20 years, a growing number of physicians now take advantage of the unique and valuable information that is available for the diagnosis of nasal conditions by studying samples of the cells from the nose. This second edition is particularly valuable as an update for them, as well as for

any physician who cares for patients with nasal disorders.

The second edition adds outstanding illustrations and additional areas of coverage to the already invaluable first edition. The coverage of additional subject matter enhances an already valuable book in augmenting the practitioner's ability to diagnose and optimally treat conditions of the nose.

The reader will find that a new world is opened to them as they study this text. Rhinologic diagnosis will ultimately be universally refined by these techniques. Those who wish to be on the cutting edges of diagnosis and optimal treatment in Rhinology will find this book to be a critical tool in their armamentarium.

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PREFACE TO THE SECOND EDITION

Over the past 20 years, advances in technology and scientific research have radically changed the clinical approach to diagnosis and treatment. In rhinology, for example, besides history taking, numerous diagnostic procedures (rhinomanometry, acoustic rhinometry, endoscopy, immunohistochemistry, immunologic tests) facilitate diagnosis and treatment planning.

Nasal cytology is an additional diagnostic method. Yet despite its simplicity and proven utility in giving direction to the diagnostic study of many nasal diseases such as allergic rhinitis, NARES (non allergic rhinitis with eosinophilia syndrome), NARNE (non allergic rhinitis with neutrophils), NARMA (non allergic rhinitis with mast cells) and, among the most recent discoveries, the new nosological entity called NARESMA (non allergic rhinitis with eosinophils and mast cells), nasal cytology paradoxically remains underused. Perhaps this is because nasal cytology is thought to be an unattractive modality by multinational companies that prefer to promote high-tech instruments instead. In fact, the only apparatus required for nasal cytology is a standard light microscope, which costs far less than the instruments required for conducting the more sophisticated studies mentioned above.

But lack of sponsorship is not the only obstacle to a wider use of nasal cytology. A major difficulty anyone wishing to use this method will have noticed is the lack of textbooks and atlases about this discipline, a subject that is not even on the medical school curriculum. Nasal cytology merits greater attention, given that its origins date back to 1889, when Gollash studied the nasal secretions of an asthmatic patient and found numerous eosinophils, leading to the recognition of their role in the pathogenesis of this disorder. Over the years, other researchers reported the importance of nasal cytology (Eyrmann, 1927; Johnson and Goldstein, 1932), but it was not until 1950 with the work of Bryans that nasal cytology started to become better known.

The importance of nasal cytology is based on a fundamental concept. The rhinocytogram of a healthy individual is composed of cells that normally make up the ciliated pseudostratified epithelium: ciliated and non ciliated columnar cells, mucous cells and

basal cells. Occasionally neutrophils, and rarely bacteria, can be found. The presence of other cell types such as mast cells, eosinophils, spores or numerous bacteria prompts suspicion of a specific nasal disease.

Nasal cytology can aid in distinguishing inflammatory rhinopathies from infectious nasal diseases, allergic rhinitis from non allergic conditions, and bacterial from viral causes. Moreover, the methodology can also identify mycotic infections, which have come under scrutiny for their possible correlation with the pathogenesis of nasal polyposis. It also makes it possible to diagnose, in a single patient, the simultaneous occurrence of more than one rhinopathy (e.g. allergic rhinitis associated with NARES).

Two advantages that make nasal cytology a practical tool affordable to most rhinology-allergy services for clinical diagnosis are:

- its simplicity of use;
- its minimal invasiveness. The procedure does not require anesthesia, thus permitting repeated control examinations as needed.

Equally important is the role nasal cytology plays in scientific research. It allows the evaluation of cell behavior under various conditions. The nasal mucosa is exposed to contact with the external environment, and thus is open to attack from physical, chemical, bacterial and viral agents and other pathogens. Using nasal cytology, the course of a disease can be followed and the response to treatment monitored and evaluated.

This atlas provides the theoretical content and a selection of images from the cytological picture library discussed in the practical sessions of my Masters course in nasal cytology which I have run since 2003. Its 42 sessions have been attended by over 900 specialists from various branches of medicine (otolaryngologists, allergists, pediatricians, pulmonologists and biologists), some of whom have very enthusiastically embraced this fascinating and useful diagnostic approach. This experience resulted in the training of nasal cytology specialists and led to the formation, nationally level, of a special study group. This, in turn, led to the creation of the Italian Academy of Nasal Cytology (Accademia Italiana di Citologia Nasale, AICNA).

Starting in 2011, in the wake of my exciting experience in Italy, I have organized Masters courses in nasal cytology at the international level, accredited by the European Union of Medical Specialists (Union Européenne des Médecins Spécialistes, UEMS), where I encountered, among the participants, great interest in diagnostic nasal cytology.

It is important to recall some of the many scientific contributions made by diagnostic nasal cytology over the past decade. They include not only cytomorphologic insights but, particularly, clinical-diagnostic and therapeutic elements.

In particular, it is worth remembering, in addition to the previously mentioned “NARESMA” and the concept of “overlapping” of more than one rhinopathology (e.g. allergic rhinitis associated with NARES), the identification of “infectious spots” which are morphologic-chromatic expressions of biofilm, clinical-cytological grading and the prognostic index of relapse in nasal polyposis. These

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achievements give us an incentive to continue our research, with great enthusiasm, and to look for more and more alliances in the scientific field.

The atlas is directed toward respiratory disease specialists working in ORL, allergy, pulmonology and pediatrics who wish to learn the theoretical basis of and correct methodology for modern cytology, as well as the ability to recognize and interpret cellular variations that occur during the course of nasal diseases.

These prerequisite skills represent the essential components of a diagnostic strategy, which, now more than ever, is directed at a more rational, efficacious, and less costly diagnostic-therapeutic program.

To conclude, I wish to express my gratitude to my dear friend John Pallanch, MD, rhinologist, Mayo College of Medicine, Rochester, Minnesota, USA, who kindly accepted the task of editing the English edition of this atlas.

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SHORT BIOGRAPHY



Matteo Gelardi is a specialist in otorhinolaryngology, with specific expertise in clinical allergy and immunology, as well as in morphometric and immunohistochemical techniques applied to clinical oncology.

Within rhinology, Dr Gelardi specializes in nasal cytology. His studies focus on defense mechanisms and cytologic alterations that occur during upper airway infection. This work has earned him wide recognition in Italy and abroad.

Formerly adjunct professor at the Schools of Specialization in Otorhinolaryngology of the Universities of Padua and Ferrara, lecturing in rhinologic symptomatology and nasal cytology, Matteo Gelardi is currently “Head of the Rhinology Unit” at the Clinic of Otorhinolaryngology, “Policlinico di Bari” University Hospital, University of Bari.

His academic duties include his role as invited professor of rhinologic symptomatology and nasal cytology in the postgraduate program for specialization in otorhinolaryngology at the University of Padua and Ferrara.

He was coordinator and instructor in the postgraduate program for specialization in otorhinolaryngology at the University of Bari.

He has published in leading scientific journals (e.g. *Lancet*, *American Journal of Rhinology*, *Journal of Allergy and Clinical Immunology*, *Allergy*, *British Journal of Sports Medicine*) and has been a speaker at numerous national and international conferences.

He is author of the first “Atlas of Nasal Cytology” (Centro Scientifico Editore, 2004) which was translated into English in 2007.

Particularly active in continuing education in nasal cytology, Dr Gelardi regularly organizes Masters courses accredited by the Ministry of Health for specialists in upper airway infections (otorhinolaryngologists, pediatricians, allergists, pulmonologists, etc.). Since 2011 he has organized, internationally, Masters courses in nasal cytology, accredited by the European Union of Medical Specialists (UEMS).

Since 2008, he has been a member of the Italian Guidelines Commission for the global ARIA (Allergic Rhinitis and its Impact on Asthma) project.

He is a member of the Italian Society of Otorhinolaryngology (SIO) and the Italian Society of Cytology (SICI).

In 2009 he founded, together with his students, the Italian Academy of Nasal Cytology (AICNA), of which he is currently president.

He has also created a website (www.citologianasale.it), containing information about diagnostic cytology.

FIRST MASTER IN NASAL CYTOLOGY COURSE

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