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# Innovations in Endoscopic Ear Surgery

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Editors

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 Springer

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## Foreword



*Innovations in Endoscopic Ear Surgery* provides an important look into the growing field of endoscopic ear surgery from the surgeons in Japan. We in Italy are very familiar with the activities of Japanese surgeons and have been fortunate to be able to work together with many of these surgeons. Prof. Seiji Kakehata has been a leader in the field of endoscopic ear surgery not only in Japan but also internationally. I am so pleased to see that more Japanese surgeons are also follow-

ing in his footsteps and working to advance the field in ways that are not only exciting but, more importantly, beneficial to patients.

This text comes at a critical time and should be read by anyone who is interested in endoscopic ear surgery. Specifically, endoscopic ear surgery is emerging from its position as a junior partner to microscopic ear surgery and is moving toward taking its place as the conventional ear surgical approach. We look forward to the day when the title of the follow-up text of *Innovations in Endoscopic Ear Surgery* will simply be *Innovations in Ear Surgery* because endoscopic ear surgery will be synonymous with ear surgery.

I look forward to learn about and adopt the new techniques introduced in *Innovations in Endoscopic Ear Surgery*, and I encourage all ear surgeons to join the growing community of endoscopic ear surgeons.

June, 2019

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## Preface



Getting a good picture of what the internal structures of the ear looked like had long been a challenge to otologists. It was possible to peer into the external auditory canal via the microscope, but the curving canal itself and the structures through which it travels and opens up onto have remained hidden to the microscope with its rigid, straight-line view. Conventional microscopic ear surgery has, as a result, had to remove anatomical structures to facilitate visualization. While other surgi-

cal fields incorporated the endoscope early on into the standard practice, the narrowness of the external auditory canal of the ear had long represented a barrier to the use of the endoscope in the field of otology. However, otologists started to work to get a better “picture” of what lies within the ear in the 1980s using the endoscopic and analog cameras, followed by actual endoscopic surgery in the late 1990s.

Endoscopic ear surgery came into its own at the end of the first decade of the twenty-first century with the introduction of high-definition digital images. Ear surgeons can now see the tiny micrometer-sized anatomical structures within the ear projected onto large monitors with no degradation of the image quality. Thus, a new world has been opened to ear surgeons with endoscopic ear surgery rapidly maturing as a field and entering into a stage where innovations are taking endoscopic ear surgery and particularly transcanal ear endoscopic surgery (TEES) into hitherto uncharted areas.

*Innovations in Endoscopic Ear Surgery* introduces the reader to the latest contributions to the field by the Japanese endoscopic ear surgery “school.” We in Japan are proud of our position as early adopters and promoters of endoscopic ear surgery and are grateful for the chance to introduce new avenues of exploration that we have embarked upon. This book covers topics ranging from the incorporation of powered instruments into TEES, or what we call “powered TEES,” which allows us to move further into the ear, the safety of powered TEES, performing TEES underwater, the fusion of

advanced imaging technology and endoscopic ear surgery to facilitate both diagnosis and treatment of a variety of ear conditions, and merging cutting-edge regenerative medicine techniques with TEES to achieve optimal results with minimal invasiveness.

I hope you will join us in our journey regardless of whether you have eyed the developments but not yet taken the plunge, have taken up the challenge, or are an old hand at endoscopic ear surgery. All are welcome to the world of endoscopic ear surgery!

Yamagata, Japan

Seiji Kakehata

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