

# Introduction

In Japan and overseas, plastic surgeons and otologic surgeons have performed reconstructive surgery for microtia/atresia of the external auditory canal (EAC) independently. Pinnaplasty alone has been performed by plastic surgeons, and it was not unusual for plastic surgeons to tell patients that otorrhea might persist lifelong or facial paralysis might even develop if an otologist reconstructed the EAC. Furthermore, otolaryngological surgeries were performed mainly to improve hearing through reconstruction of the EAC, eardrum and ossicular chain, but the cosmetic shape of the ear was not always given special attention. However, remarkable advances in the concepts and techniques for reconstructive surgery of this congenital malformation have been made since the beginning of the 21st century and, hence, this book contains the latest findings about joint reconstructive surgery performed cooperatively by plastic surgeons and otologists.

Previously, we, the editors, discussed reconstructive surgery for microtia/atresia of the EAC while working at the plastic surgery and otolaryngology departments of the University of Tokyo Hospital, and we wanted to realize our ideal of achieving a natural-looking auricle and improving hearing with a single surgery. Helical computed tomography has enabled three-dimensional reconstruction of the soft tissues of the temporal bone surface and the cranium, which serves as a plan for collaborative surgery connecting the two departments. In other words, it has become possible to determine the construction site for the EAC in the mastoid section as well as the site for pinnaplasty. With this concept of planning, the plastic surgery department creates an auricle framework using costal cartilage, which will be embedded subcutaneously in the temporal region during the first stage of surgery. The second stage is a joint procedure involving the plastic surgery and otolaryngology departments, where the auricle is elevated and the EAC, ossicular chains and eardrum are reconstructed. Finally, a costal cartilage block is placed at the posterior part of the auricle and covered with a free skin flap. This joint surgery takes approximately 6 h. If the surgery is performed separately, more surgeries are necessary from each department, and a patient would undergo a total of four to six surgeries. In cases of bilateral microtia, the number of surgical procedures would double. Joint surgery is therefore advantageous not only for better reconstruction of morphology and function, but also in terms of the

lower number of surgical procedures required, which there by reduces the psychological pressure and economic burden on patients.

Based on our concept of joint surgery, information on diagnosis, surgical procedures, outcomes, long-term results and psychology is presented in this book. We hope that readers will also find information on the activities of the association of patients with microtia/atresia of the EAC called 'Blue Sky Association'. This book is to be referenced by plastic surgery departments, otolaryngology departments, speech therapists, school teachers and patients' families. We hope this book will serve as a clinical textbook for those involved in surgical and audiological specialties of microtia/atresia of the EAC in the clinical setting.

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