HEAR MAPS a New Classification for Congenital Microtia/Atresia Based on the Evaluation of 742 Patients

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INTRODUCTION

Patients with congenital aural atresia and microtia are inherently complex and require the services of multiple medical specialties. Unfortunately, communication between providers is not always optimal due to subspecialization and geographical separation. The multitude of classifications systems used by different subspecialties compounds this problem. Perhaps the most widely used atresia classification method, the Jahrsdoerfer’s 10-point scale, only discounts one point if the external ear is abnormal. It has no reference to the degree of malformation or any associated craniofacial involvement. Similarly, the plastic surgery literature presents multiple classification methods (Marx, Wierda, Tanzer, Fukuda, Firmin, Aguilar, and Jahrsdoerfer) that describe abnormalities of the pinna but do not address concurrent abnormalities of the external auditory canal or middle ear. At our institution the reconstructive team consists of an otologist/neurotologist, a plastic surgeon, a craniofacial surgeon, and a team of audiologists; all of whom have separate offices and convene in the operating theater. As communication is essential for coordination of care we realized that we needed to improve and streamline the interaction amongst team members and sought to create a new method building upon the strength of existing classifications. We created a classification based on the acronym HEAR MAPS (Hearing, Ear [microtia], Atresia grade, Remnant earlobe, Mandible development, Asymmetry of soft tissue, Paralysis of the facial nerve, Syndromes) and have used it to evaluate patients since 2008 with several modifications during the years resulting in the system described in this report.

RESULTS

We developed a new classification method based on the acronym HEAR MAPS (Hearing, Ear [microtia], Atresia grade, Remnant earlobe, Mandible development, Asymmetry of soft tissue, Paralysis of the facial nerve and Syndromes). We used this method to evaluate 742 congenital atresia and microtia patients between 2008 and January of 2012. Grade 3 microtia was the most common external ear malformation (76%). Pre-operative Jahrsdoerfer scale was 9 (19%), 8 (39%), 7 (19%), and 6 or less (22%). Twenty percent of patients had varying degrees of hypoplasia of the mandible. Less than 10% of patients had an identified associated syndrome.

CONCLUSIONS

Patients with congenital aural atresia and microtia often require the intervention of audiology, otology, plastic surgery, craniofacial surgery and speech and language professionals to achieve optimal functional and aesthetic reconstruction. Good communication between these disciplines is essential for coordination of care. We describe our use of a new classification method that efficiently describes the physical and radiologic findings in patients with congenital aural atresia and microtia to improve communication and patient care amongst healthcare providers.