Prenatal Counseling, Ultrasound Diagnosis, and the Role of Maternal-Fetal Medicine of the Cleft Lip and Palate Patient

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KEYWORDS

• Cleft • Congenital facial anomalies • Prenatal diagnosis • Maternal fetal medicine
• 3D/ 4D ultrasonography

KEY POINTS

- A multidisciplinary team is the standard of care and the cornerstone of management of cleft patients.
- With readily improving advanced diagnostic modalities, early prenatal diagnosis of cleft lip and palate increasingly becomes a topic of importance for both the team caring for and families of cleft patients.
- Maternal-fetal medicine (MFM) is a fellowship subspecialty of obstetrics that can offer high-quality care and coordination to the cleft team.
- Both 3-D and 4-D sonography lead to early prenatal diagnosis of cleft patients; however, differences in training result in variations in its diagnostic accuracy.

Video content accompanies this article at http://www.oralmaxsurgery.theclinics.com

INTRODUCTION

Cleft lip, with or without cleft palate, is the most common congenital facial malformation, with a prevalence ranging from 1 in 500 to 1 in 2500 live births, depending on geographic origin and ethnic background.[1–3] With technologic advances, prenatal diagnostic modalities continue to improve, and it is now possible to diagnose craniofacial malformations well before birth. Thus, consideration must be given to the role these modalities have in regard to this unique patient population. A multidisciplinary team approach is now widely accepted as the standard of care in dealing with these complex patients. The role of the MFM physician and the importance of prenatal counseling continue to evolve with changing diagnostic approaches. By understanding this multidisciplinary, multimodality prenatal approach to cleft lip and palate patients, oral and maxillofacial surgeons are uniquely positioned to coordinate the complex treatment these patients require.

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THE MULTIDISCIPLINARY TEAM

A well-coordinated interdisciplinary team has become the standard of care for the treatment of cleft lip and palate. Although various team approaches had been in place for more than 60 years, for a time there was no comprehensive statement on what a cleft/craniofacial team should look like. Work began in 1991 when the surgeon general issued a report on special needs children. Recognizing that children with craniofacial birth defects, including cleft lip and palate, were among those children with special health care needs, the Maternal and Child Health Bureau provided funding to the American Cleft Palate-Craniofacial Association (ACPA) for the purpose of identifying recommended practices in the care of patients with craniofacial anomalies.[4]

In 1998, the ACPA standards committee led by Dr Ronald Strauss conducted the first comprehensive national survey of the structure, function, and composition of cleft palate and craniofacial teams in the United States and Canada. Their findings from the survey noted discrepancies regarding the structure, distribution, regionalization, and resource allocation for cleft/craniofacial teams.[5] A dedicated effort was thus put under way by the ACPA and today their Commission on Approval of Teams has set forth guidelines on the standard cleft and craniofacial team composition. To be approved by the ACPA, a cleft team is required to include a designated patient care coordinator, speech-language pathologist, and orthodontic specialist as well as a surgeon, most commonly of oral and maxillofacial or plastic surgery background. Furthermore the team should provide access to adjunct professionals in the disciplines of pediatric dentistry, otolaryngology, pediatrics/primary care, genetics, audiology, and social work and psychology.[6] Further standards in addition to those for the cleft team are in place to be designated as a craniofacial team.

The comprehensive management of cleft lip and palate patients demands consideration of the complex anatomic deformity, psychosocial development, and the delicate balance between surgical repair and optimization of growth. The difficult nature of these issues are due to the iatrogenic effects of surgery on patient growth that often are directly complicating patients' psychosocial maturation as they move through speech development, enter school age, and continue through adolescence. From a surgical standpoint, the goals of successful management of cleft patients include

- Restoration of an acceptably esthetic lip, nose, and facial profile
- Closure of palatal defects
- Restoration of alveolar continuity
- Appropriate speech and language development
- Adequate oral hygiene and dental and periodontal health
- An appropriate jaw relationship that is conducive to masticatory function
- A smooth transition into social circles and school

To achieve these goals, a coordinated multidisciplinary team approach from birth through adolescence is critical to achieving success. A genetic analysis is warranted whenever a syndrome is suspected along with the anatomic craniofacial defect. An otolaryngology evaluation for eustachian tube and middle ear defects as well as audiology evaluation for hearing deficit is appropriate. A speech pathologist works closely with the patient from the time of speech development until well after the completion of palatal cleft repairs. A social worker has a valuable role to play because often these patient populations come from homes that are poorly equipped to deal with the unique challenges they present, from obtaining specialized feeding equipment to overcoming the financial hurdles these families may be faced with. Unfortunately, many of these children struggle with depression and anxiety issues that develop as they navigate the maze of social development and peer interactions, and a child psychiatrist is often a beneficial contributor in their care team. To better prepare a patient's family for the long road ahead of them, the role of prenatal counseling has become a cornerstone of the initial decision-making timing not only for how to best treat the patient but also to inform the family of what is to come. Although not specifically noted by the ACPA in their standard team composition guidelines, a newer subspecialty of obstetrics, the MFM physician, is well poised to provide accurate and timely prenatal diagnosis and counseling to these families.

NEED FOR PRENATAL COUNSELING

Much research has been done on the need for prenatal counseling. When parents discover a cleft malformation at birth, they often experience what is classified as a psychosocial crisis that is characterized by disappointment, helplessness, and desperation, which may lead to a period of severe emotional crisis for the parents. Often the parents feel guilty about the malformation and are concerned about the future of their child.[7] This emotional response can be mitigated by proper prenatal diagnosis, education, and planning. A