Ocular Anomalies in the Oral-Facial-Digital Syndrome

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INTRODUCTION

The oral-facial-digital syndrome (OFDS) encompasses a spectrum of congenital anomalies, and recent classifications have identified up to seven different types.1 Associated ophthalmologic findings reported in OFDS include hypertelorism,1 strabismus,2,4 and see-saw winking.3 In addition, recently the cases of two brothers with OFDS and chorioretinal colobomas were reported.5 We describe a girl with OFDS and associated intraocular anomalies.

CASE REPORT

The patient was an infant girl delivered by emergency caesarean section at 34 weeks gestation because of premature labor with fetal distress. The 21-year-old mother was phenotypically normal and had no previous pregnancies. The infant was hypertonic and developed seizures soon after birth. Physical examination documented multiple congenital anomalies, including small palpebral fissures, hypertelorism, a high nasal bridge with a prominent nasal tip, low set and posteriorly rotated ears, micrognathia, polyoid tongue hamartomas, partial cleft of the middle and lower alveolar margin, fibrous mucobuccal folds, webbing between the buccal mucosa and the alveolar ridges, a highly arched and narrow palate, bifid uvula, bilateral fifth finger clinodactyly, and toe asymmetry with a prominent hallucus bilaterally. Bronchoscopic examination under anesthesia demonstrated an abnormal epiglottis with tissue present only on the left side, and a small right mainstem bronchus. The diagnosis of OFDS was confirmed after a comprehensive evaluation of the patient by the pediatric genetics service.

Ophthalmologic evaluation was first performed at age 15 months. Hypertelorism, narrow palpebral fissures, and excessive periorbital adipose tissue were noted. The visual response in the right eye was limited to light perception, but the patient was visually alert and able to track objects with the left eye. Conjugate horizontal and rotary nystagmus was present. The eyes were aligned with full versions. The anterior segments were anatomically normal with corneal diameters of 8 mm in the right eye and 10 mm in the left eye. The right optic nerve was anomalous with a deep, excavated appearance characteristic of an optic nerve coloboma, and was contiguous with a chorioretinal coloboma along the inferonasal vascular arcade (Fig 1). The right macula was ill-defined, and the foveal reflex was absent. The left optic nerve and macula were normal, but two discrete, round, chorioretinal colobomas were present along the inferonasal vascular arcade (Fig 2).

Electrophysiologic studies were obtained to further assess the visual potential. The scotopic electroretinogram was subnormal in both eyes, with the right eye response more severely reduced than the left eye response. The visual evoked potential response in the right eye had a delayed latency with a markedly decreased amplitude, and a normal response was present in the left eye. Because the electrophysiologic studies documented severely reduced retinal and optic nerve function, amblyopia therapy was not recommended. Safety glasses were endorsed for the child.

The child was recently examined at age 6 years. She had undergone repair of her bifid uvula and partial cleft palate as well as lysis of the tongue adhesions. The patient was involved in speech, occupational, and physical therapy for severe developmental and growth delay. Continued good visual function with the left eye was noted, but the right eye was unresponsive to all forms of visual stimulation. The right eye was microphthalmic, and a 70 diopter right exotropia was present. The intraocular anomalies were unchanged.

DISCUSSION

In 1954, Papillon-League and Psamme reported 11 patients, all females, with a syndrome comprised of hypoplasia of the nasal alae, median cleft of the upper lip, cleft palate, tongue clefts and hypertrophic tongue frenulae, digital anomalies, alopecia, and mental retardation.6 Numerous patients with variations of this syndrome, now termed OFDS type 1, have been reported, and up to seven types of OFDS are now recognized.1 The most common orofacial anomalies include hypoplasia of the nasal cartilage, tongue hamartomas, bifid tongue, midline clefts of the lip, multiple hyperplastic frenula, and cleft palate (Table).7 Digital anomalies include syndactyly, clinodactyly, camptodactyly, brachydactyly, and polydactyly. Men-
tual retardation, granular skin, and alopecia are often seen. Suspected modes of inheritance include autosomal recessive, X-linked recessive, and X-linked dominant. There is a significant amount of overlap between OFDS types, which often makes classification difficult.

Several ocular disorders have been reported in association with OFDS. Hypertelorism is a common facial feature, and esotropia has been noted with OFDS types I and II.\(^4^7\) The hallmark of OFDS type IV is see-saw winking observed in a patient who also had esotropia; the sister of this patient had OFDS but no ocular findings.\(^3\)

Recently, Gurrieri and colleagues described two brothers with OFDS and associated chorioretinal colobomas.\(^5\) They suggested that these patients represented a new subgroup which they term OFDS type VIII, or a variant of Mohr syndrome. Our patient has similar systemic and ophthalmologic disorders, in addition to complex microphthalmos, exotropia, and profound monocular visual impairment. The identification of two other unrelated patients with OFDS and similar ocular disorders significantly reduces the likelihood that this is a chance association between OFDS and colobomatous microphthalmos. Though a new OFDS category has been suggested for these individuals, accurate classification will require molecular genetic evaluation of these disorders.

We describe a girl with OFDS, now the third child to be reported with associated intraocular anomalies. To our knowledge, this is the first report of microphthalmos and optic nerve coloboma in OFDS. This case emphasizes the importance of a complete ophthalmologic evaluation in children with OFDS, to identify ocular anomalies and initiate appropriate and timely therapy.

**REFERENCES**