CLINICAL NOTE

The Otolaryngologic Features of Sanjad-Sakati Syndrome

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Sanjad-Sakati syndrome (SSS) is a rare autosomal recessive disorder seen in children of Middle Eastern descent, predominantly of consanguineous parents. This disorder has been mapped to the long arm of chromosome 1 (1q42-q43) and is caused by mutations in the *TBCE* gene (OMIM 241410), encoding a tubulin-specific chaperone E.[1]

Sanjad-Sakati syndrome, also called hypoparathyroidism-retardation-dysmorphism, is characterized by congenital hypoparathyroidism, intrauterine growth retardation, mental retardation, seizures, and typical facial dysmorphism. Clinical facial features include deep-set eyes, prominent forehead, microcephaly, thin lips, long philtrum, depressed nasal bridge with beaked nose, external ear anomalies, and microdontia.[2] The dysmorphic facial features, dwarf physiognomy, and possible need for tracheostomy pose a challenge for otolaryngologists. Herein, we report the case of an 18-year-old young man with SSS and discuss the otolaryngologic implications for this disorder.

REPORT OF A CASE

An 18-year-old Saudi young man, born to consanguineous parents (first-degree cousins), was admitted to Children's National Medical Center, Washington, DC, for tracheostomy evaluation to treat chronic respiratory insufficiency, respiratory distress, and central hypoventilation secondary to obstructive sleep apnea. He was already undergoing treatment with bilevel positive airway pressure (BiPAP) (12/5 cm H_2O) and receiving 1 liter of oxygen per minute via nasal cannula, but his blood oxygen saturation level remained low (86%-90%). Owing to the continuous BiPAP mask requirements and the worsening pulmonary toilet demands, he required a tracheostomy.

This patient had multiple medical conditions that complicated treatment. He was undergoing treatment in the endocrinology department for hypoparathyroidism, calcium deficiency, and growth failure. Owing to atlantoaxial instability, he had undergone spinal surgery multiple times, including cervical spinal fusion. The combination of restrictive lung disease secondary to scoliosis, bronchospasm, and a small chest cavity predisposed him to severe chronic lung disease with frequent infection.

Physical examination revealed characteristics of SSS, including short stature and dysmorphic facial features. Craniofacial anomalies included microcephaly, retromicrognathia, prominent forehead, deep-set eyes, thin lips, depressed nasal bridge, and abnormal external ears. Inspection of the oral cavity revealed abnormal dentition with widely spaced teeth, micrognathic mandible and maxilla, and moderate tooth decay. The neck was thick with limited range of motion. Direct laryngoscopy demonstrated a difficult-to-expose, retroflexed epiglottis with markedly redundant supraglottic mucosa (**Figure**). A tracheostomy was performed with slight difficulty but without complications.

COMMENT

Sanjad-Sakati syndrome is a newly described disorder seen predominantly on the

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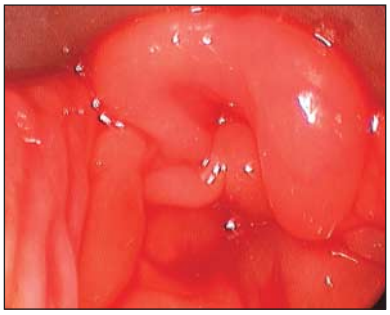

Figure. Direct laryngoscopy demonstrated a difficult-to-expose, retroflexed epiglottis with markedly redundant supraglottic mucosa.

Arabian peninsula consisting of congenital hypoparathyroidism associated with severe growth failure and dysmorphic features. Most of the cases reported have been children of consanguineous parents. Some had affected siblings who died in infancy.[2,3] Increasing frequency of genetic disorders, particularly autosomal recessive conditions, is present in Arab populations owing to a high rate of consanguinity, large family size, and rapid population growth. Cases of SSS have also been described in the nomadic population of the Negev Desert (southern Israel), who came to that region 400 to 500 years ago from the western Arabian desert. All previously described patients have ranged in age from 4 months to 12 years.[4] Dental, ocular, and anesthesiologic care for patients with SSS have been reported, but to our knowledge, there are no details regarding otolaryngologic management.[2,4,5]

Deletion and truncation mutations in the *TBCE* gene have been identified as the cause of SSS. Mutations in the same gene were also reported in autosomal recessive Kenny-Caffey syndrome, a syndrome with a phenotype resembling that of SSS, but with the additional features of osteosclerosis and recurrent bacterial infection.[6] Kenny-Caffey syndrome, found also in Middle Eastern populations, is characterized by the presence of normal intelligence, hypoparathyroidism, seizures, facial dysmorphism, late closure of the anterior fontanelle, macrocephaly, and postnatal (rather than prenatal) growth retardation.[5] These syndromes have been linked to overlapping genetic intervals on chromosome area 1q42-q43, and despite clinical variations share an ancestral haplotype, which suggests a common founder mutation.[7]

Clinical findings in SSS include congenital hypoparathyroidism, hypocalcemia, hyperphosphatemia, seizures, severe intrauterine and postnatal growth failure, proportional dwarfism with small hands and feet, and mental retardation.[8] Craniofacial abnormalities consist of a prominent forehead, deep-set eyes, low-set ears, depressed nasal bridge, a thin upper lip, long philtrum, widely spaced teeth, microcephaly, and retromicrognathia. The syndrome is also associated with a growth hormone deficiency.[1] Although patients with SSS are prone to recurrent pneumonia and other bacterial infections, assessment of immune function shows a normal range.[9]

Endocrine disorders, craniofacial anomalies, dwarfism, and hypoxia can cause difficulties in airway management, as seen in our patient. In our case, severe respiratory insufficiency occurred due to a combination of obstructive sleep apnea, proportional dwarfism, preexisting restrictive parenchymal lung disease, redundant supraglottic mucosa, and retroflexed epiglottis. Intubation may be difficult in these patients because of mandibular hypoplasia and retrognathism.[4] Pulmonary morbidity is increased, and respiratory physiotherapy is mandatory, as manifested in our patient's pulmonary toilet demands.

CONCLUSION

Sanjad-Sakati syndrome is a rare and recently described disorder characterized by congenital hypoparathyroidism, growth delay, intrauterine and postnatal growth failure, and facial dysmorphic features. Additionally, these patients may exhibit severe respiratory insufficiency, obstructive sleep apnea, scoliosis, redundant supraglottic mucosa, a retroflexed epiglottis, mandibular hypoplasia, and retrognathism. These characteristics and associated medical problems predispose these patients to special airway management needs. Early otolaryngologic consultation is important to ensure effective airway evaluation and management.

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