

Case report:

Bilateral Abductor Vocal Cord Palsy in a Child: Case Report

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Abstract

Paralysis of the abductors of both vocal cords causes the vocal cords to lie in the midline or paramedian position. This compromises the airways and causes respiratory distress which may often be acute, necessitating tracheostomy. Here we report a child with idiopathic cause of bilateral abductor vocal cord palsy.

Introduction :

Vocal cord paralysis is the second most common congenital laryngeal abnormality. This must be differentiated from the commonest congenital laryngeal abnormality, laryngomalacia. Stridor is the predominant presenting symptom in both of these conditions. Bilateral abductor palsy of vocal cords (BAPC) results from dysfunction of recurrent laryngeal nerves of both sides. Other symptoms of vocal cord paralysis in children include obstruction, weak cry, dysphagia, and aspiration. The diagnosis can usually be made by flexible endoscopy at the bedside. Here we report a child with idiopathic cause of bilateral abductor vocal cord palsy.

Case Report:

A 3 year female child admitted in department of pediatrics with complaints of noisy breathing (stridor) for the past 3 month. The child developed noisy breathing during inspiration acute in onset, persists during sleep and increases during episodes of cough and cold. Also gives history of difficulty in deglutition, swallows solids slowly as compared to liquids but no pain associated with swallowing. No change in voice. No history of trauma, surgery, fever, breathlessness, palpitation, convulsion, cyanosis, headache, vomiting or weakness. It was a full term normal vaginal delivery and there was no history of instrumentation, birth trauma, or prolonged labour. On general examination vitals were stable, and there was no pallor, or cyanosis or clubbing. Inspiratory stridor was present. Respiratory examination showed equal bilateral air entry. Cardiovascular system and Central nervous system examination was within normal limits. Ear ,nose oral cavity examination showed no abnormalities. Direct laryngoscopy and bronchoscopy revealed bilateral vocal cord palsy. MRI scan revealed vocal cord in persistently adductor position with no evidence of stenosis in subglottic region or trachea. To

exclude surgical causes; investigations were done including X ray of neck, barium swallow, ECHO and MRI neck and head; all of which were essentially normal. Metabolic work up including blood glucose, serum calcium, magnesium, blood gas, lactate and ammonia were essentially normal. Hence a diagnosis of idiopathic bilateral abductor vocal cord palsy was made.

Discussion : Bilateral abductor palsy of vocal cords (BAPC) results from dysfunction of recurrent laryngeal nerves of both sides. In the 1860s, Turk and Knight first described vocal cord paralysis (1). The major causes of vocal cord paralysis in children include neurological conditions, birth trauma, infectious, and idiopathic causes. The neurological conditions include CNS disease (e.g. cerebral dysgenesis, hypotonia, cerebral palsy, Charcot-Marie-Tooth disease, etc.) and Arnold-Chiari malformation with meningocele (2). Vocal cord paralysis may be associated with congenital cardiac lesions or secondary to endotracheal intubation is a controversial subject (3). BAPC can cause biphasic stridor and aphonia (4,5) In BAPC, both the cords tend to lie in the median or the paramedian position and so the patients do not have any problem with their voice. Rather they suffer from inspiratory stridor because of further narrowing of the glottic chink during inspiration owing to Bernoulli's effect. Aspiration and dysphagia may or may not be present. On physical examination, the voice can be breathy or normal. The cry of the patient is often quite normal. Patients may have cyanosis, apnea,

or intercostal retractions. Drooling, recurrent choking and aspiration suggest either a developmental abnormality or a neuromuscular disorder of the laryngopharynx (6). Flexible fiber optic nasopharyngeal laryngoscopy is safe, allows detailed examination of nose, choanae, nasopharynx, oropharynx and hypopharynx. It provides information for evaluation of stridor, such as supraglottic soft tissues, vocal fold motion, dynamic compression from masses or cysts and evidence of trauma, tumor or infection. Investigations which should be done to exclude other causes include a barium swallow, CT scan, MRI and endoscopy. Barium swallow helps to evaluate for aberrant vessels. CT Scan/ MRI head and neck can diagnose masses causing compression, aberrant vessels, mediastinal masses and associated neurological anomalies(7).

As many as 70% of children with BAPC require a tracheostomy. However, spontaneous recovery occurs in half of the patients, sometimes in those as old as 11 years. If the condition spontaneously resolves, it typically does so 24-36 months after diagnosis. Therefore, destructive static procedures should be delayed for approximately 3 years because of this potential for recovery (8). If airway compromise is severe, endotracheal intubation or tracheotomy may be necessary. Endoscopic surgery with posterior cordectomy or cord lateralization with sutures may be performed. Cordectomy and arytenoidectomy with the CO₂ laser have been used (9). Another series showed that bilateral palsy had worst prognosis with only 52% recovering

spontaneously and 7.2% requiring surgical correction (10). Because idiopathic sources constitute a large percentage of the causes of vocal cord paralysis in children, and

recovery rates have been reported to be as high as 62.5%, irreversible treatments should be avoided

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