Idiopathic Cervical Scoliosis Leading to Upper Airway Obstruction in a 13 Year Old Child

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Conclusions:
 Patients with severe cervical scoliosis should be evaluated periodically to assess respiration and swallowing function. In progressive cases a multidisciplinary team is required to achieve optimal treatment.

Case report:
 A 13 year old boy arrived to the pediatric emergency room complaining of headache, dyspnea and weight loss. The patient has a known progressive right sided cervical scoliosis and hyperextension (figure- 1) since the age of 18 months. Several hours after admission his respiration deteriorated. As a result the patient underwent emergent intubation. Early after intubation respiration improved substantially. Computer tomography performed after intubation revealed sever compression of the trachea (figure- 2). Extubation attempts failed repeatedly and a tracheostomy, distal to the site of compression was performed. The patient's respiration improved and he regained spontaneous breathing.

Discussion:
 Idiopathic scoliosis is defined by the presence of lateral displacement and rotation of the vertebral column. Prevalence of scoliosis in the pediatric population ranges from 0.3- 15.3%1. Respiratory abnormalities associated with scoliosis are mostly due to thoracic involvement leading to abnormal chest wall movement2. Early onset scoliosis, as in the presented case, is associated with higher morbidity3.

In contrast to previously reported data, the presented patient suffered from a crushed airway secondary to cervical deformity. A PubMed search did not reveal similar reported cases.

Treatment options include periodic evaluation, braces or surgical correction. Due to the high risk of post-operative neurological damage surgical correction was contraindicated and tracheostomy was the only possible procedure to maintain patent airway.

Figure 2 – Sagittal (1) and coronal (2) computer tomography images after intubation showing the severe cervical deformity.

References: