Sonographic Demonstration of a Congenital Laryngeal Cyst

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Congenital laryngeal cyst is a rare cause of respiratory distress in the neonate and infant.\(^1\) This soft tissue mass of water density is located inside an aryepiglottic fold.\(^2\) Its diagnosis classically rests on endoscopy and radiography, yet it may also be made through ultrasonography. We report one case of laryngeal cyst diagnosed by ultrasonography in a neonate and illustrate the role of cervical sonography in infants with stridor.

**CASE REPORT**

A premature 34 week old female newborn infant of a triplet pregnancy was admitted in the neonatal unit with moderate axial hypotonia. A few hours later, she was found to be suffering from respiratory distress and stridor. Clinical examination revealed a premature hypotonic baby with respiratory retraction of suprasternal and infra-sternal soft tissue, stridor, and regurgitation. The abdomen was slightly distended. Chest radiograph and arterial blood gas determination showed normal results, and a laryngeal abnormality was suspected.

Cervical ultrasonography showed a cystic mass 12 mm in diameter at the right aryepiglottic fold, displacing the glottis toward the left side (Fig. 1). No flow was detected with Doppler ultrasonography. The ultrasonographic findings suggested the diagnosis of aryepiglottic cyst.

Limited endoscopic marsupialization was performed but with transient clinical improvement. Ultrasonography revealed persistence or recurrence of the cyst, and a secondary complete removal of the cyst was performed endoscopically (Fig. 2). Microscopic examination revealed a mucinous cyst. No recurrence was detected on sono-graphic follow-up, and deviation of the glottis was reduced. The infant is now 32 months old and is completely asymptomatic. On an ultrasonogram, the glottis is no longer deviated (Fig. 3).
DISCUSSION

Stridor is a harsh, primarily inspiratory sound observed in choanal atresia and Pierre Robin syndrome or produced by laryngeal causes, such as laryngomalacia, laryngeal webs, bilateral paralysis of vocal cords, vascular ring, hemangioma, laryngocele, or cysts. The last-mentioned cause is rare, being observed in 2% of congenital laryngeal anomalies, occurring in 1.82 infants per 100,000 live births.

The cyst develops as a result of ductal occlusion of one of the numerous mucous glands existing in the larynx. Most laryngeal cysts are in supraglottic location inside an arypeiglottic fold or a vallecula. The diagnosis of laryngeal cyst has been based on history, physical examination, or radiographic findings.

Sonographic examination of the larynx is an easy and useful imaging modality in infants. It allows a good analysis of the cartilaginous structures, muscles, and endolaryngeal structures. As observed in this case, ultrasonography appears to be useful for the differential diagnosis of rare causes of stridor in an ill premature baby. In our case, ultrasonography was able to diagnose rapidly the cystic nature of the laryngeal mass, identify its precise location, and confirm the existence of suspected recurrence after initial limited endoscopic treatment (Fig. 2). Paralysis of the vocal cords was excluded by direct observation of their movements during breathing and phonation. Absence of vascular signals on Doppler interrogation associated with the anechoic aspect of the mass in our case excluded the diagnosis of hemangioma.

In conclusion, ultrasonographic examination is a noninvasive and easily reproducible way of investigating the infantile larynx and should be performed prior to the endoscopy of the upper respiratory tract.
REFERENCES