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CASE REPORT

A case of laryngeal ductal cyst: Antenatal diagnosis and peripartum management

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Summary Laryngeal mucous cysts are rare congenital malformations of the upper aero-digestive tract. We report one case of a ductal cyst developed in the supraglottic area. The diagnosis of an antenatal malformation was suspected on the basis of a hydramnios development during pregnancy. Ultrasound scan showed a cervical anechogen mass. This led to a fetal MRI which showed the cyst extension. A management of delivery had to be prepared due to the risk of air obstruction at the birth. The treatment consisted of a marsupialization of the cyst under laryngo-endoscopic surgery. Six months follow-up showed no recurrence.

1. Introduction

Laryngeal mucous cysts are rare congenital malformations of the upper aero-digestive tract. The first congenital laryngeal cyst case was reported in 1881 by Abercrombie [1]. Two groups of laryngeal cysts are distinguished: ductal and saccular cysts. The ductal cysts are mucous retention cysts developed in the supraglottic area. Saccular cysts are from ventricular origin and arise by saccular ducts obstruction or atresia of the saccule itself. They can be discovered in the neonatal, postnatal but also the antenatal periods. Magnetic resonance imaging (MRI) is the main exam used to confirm the presence of the cyst in antenatal period.

We report one case of a ductal cyst developed on the aryepiglottic fold, discovered during the antenatal period by a fetal MRI and the subsequent management of the delivery.

2. Case report

Hydramnios and cervical anechogen mass were detected in a pregnant woman, during routine antenatal screening with an ultrasound scan, at

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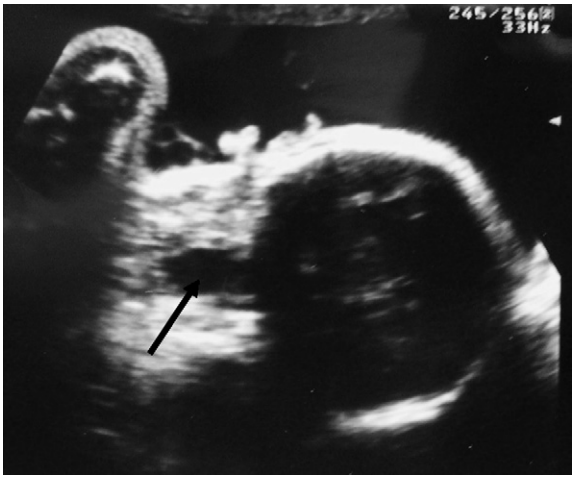

Fig. 1 Antenatal ultrasound scan (34 weeks gestation): lateral view demonstrating the cyst (arrow) behind the tongue, in the upper aero-digestive tract.

34 weeks gestation (Fig. 1). This exam showed a non-vascular mass developed in the neck area. MRI confirmed the presence of a cyst developed in the upper aero-digestive tract, behind the tongue and up to the larynx (Fig. 2). Amniodraining and amniocentesis were performed at 35 weeks gestation and the karyotype indicated a normal result. A multidisciplinary team of obstetrician, neonatologist and ENT surgeon suggested the diagnosis of a laryngeal congenital cyst. A 2555 g baby boy born, at 36 weeks gestation, by induced labor using intravaginal prostaglandines. The newborn rapidly developed a respiratory distress and required a tracheal intubation. The laryngoscopy showed an enormous cyst developed in the supraglottic region (Fig. 3). The airway was left deviated, but after three attempts, successful intubation was achieved. Microlaryngeal surgery was performed 12 h later under general anesthesia. The cyst had only an external component, developed on the right aryepiglottic fold. It was 4 cm diameter. The marsupialization of the cyst was made by microsurgery (Fig. 4). The cyst contained mucoid fluid that was aspirated. The top of the cyst was removed completely using microscissors. The pathology examination showed the presence of squamous epithelial cells that confirmed the diagnosis of ductal cyst. One day postsurgery, the tracheal tube was successfully removed. The post-operative course proceeded well. The newborn had a normal nipple feeding reflex, a normal breathing pattern and showed no further episode of stridor or airway obstruction. He was discharged home after 8 days. Six months follow-up showed no recurrence and a normal mobility of the larynx.

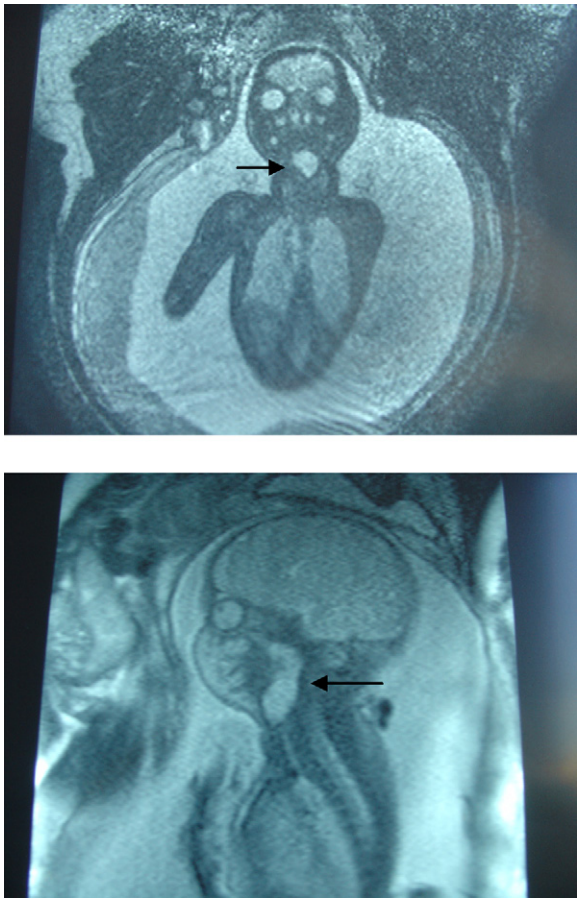

Fig. 2 Fetal magnetic resonance image (35 weeks gestation): T2-coronal and sagittal views showing the size and the extent of the cyst (arrows) located in the upper aero-digestive tract.

3. Discussion

Benign congenital laryngeal cysts are rare. A new congenital laryngeal cysts classification was proposed in 2004 by Forte et al. [2]. This classification is based on the extent of the cyst and the embryologic tissue of origin. This classification separates ductal cysts and saccular cysts. Ductal cysts are mucous cysts, occurring after an obstruction of the collecting ducts of submucosal glands. Saccular cysts are from ventricular origin, corresponding to a duct obstruction of submucosal glands located around the ventricule or an atresia of the laryngeal saccule orifice itself. Laryngeal cysts can lead to neonatal air obstruction that can bring about a fatal issue. They also can be discovered, during the first years of life, from symptoms of increased stridor during sleeping or feeding, breathing difficulties, hoarseness, chronic cough or failure of thrive [3]. The fiberoptic laryngoscopy shows the cyst and its impact on upper aero-digestive tract.