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Case Report

Giant Cervical Teratoma in a Neonatal Case

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Abstract

Giant cervical teratoma is a rare condition that usually occurs in newborns, presenting as a benign, often large, tumor mass located in the cervical region. This embryonic tumor results from an abnormality in tissue development during gestation and can contain various structures, such as hair, teeth, glands or nervous tissue. Diagnosis and treatment of a giant cervical teratoma in a newborn represent a major clinical challenge, as the mass can lead to serious complications due to its proximity to vital neck structures, such as the airway, blood vessels and nerves. Compression of these structures can impede breathing, swallowing and other essential functions, requiring prompt and appropriate assessment and management. Through our observation, we report the case of a newborn with a giant cervical teratoma diagnosed antenatally during the third trimester ultrasound, died on day 2 of life in a picture of severe asphyxia secondary to compression of the aerodigestive tract.

Keywords: Antenatal Diagnosis; Newborn; Excision; Anatomo-Pathological Study

Introduction

Neonatal cervical teratoma is a rare benign tumor mass that typically develops in the neck region of newborns. Although these tumors are uncommon, they pose a significant clinical challenge due to their anatomic location and potential complications, including breathing difficulties and infections. Cervical teratoma is composed of a variety of tissues, including elements from different cell types, such as skin, bone, muscle and sometimes more complex tissues such as teeth or hair. In rare cases, these tumors may be associated with chromosomal abnormalities or malformation syndromes. Diagnosis of neonatal cervical teratoma is based on clinical assessment and imaging tests, such as ultrasound and magnetic resonance imaging, to determine the nature and extent of the tumor. Treatment usually involves surgery to remove the tumor mass, but management can vary depending on the size, location and presence of complications. Early and appropriate management is crucial to minimize risks and ensure a favorable prognosis for the infant. We report the case of a newborn with a giant cervical teratoma diagnosed by antenatal ultrasound performed during the third trimester of pregnancy in the neonatal intensive care unit of Mohammed VI University Hospital, Tangier.

Clinical Observation

This is a female newborn, with no particular history, admitted on day 1 of life for a huge anterior cervical mass. The clinical examination found a tonic, responsive newborn, heart rate at 150 beats/min, respiratory rate at 50 cycles/min, without cyanosis or dyspnea, presence of a renitent mass of approximately 10 * 9 cm, painless with telangiectasias. The biological assessment was normal and the tumor marker levels ßHCG and aFP were negative. The cervical CT scan objectified a large left laterocervical solido-cystic mass centered on the submandibular region of roughly oval shape, well demarcated, heterogeneous density containing some calcifications measuring 95 * 95 * 105 mm responsible for compression of the aerodigestive visceral axis without signs of vascular invasion. Treatment consisted of total surgical excision of the mass, which did not invade adjacent structures. The anatomopathological study was in favor of an immature teratoma. The evolution was unfavorable, marked by the death of the patient on day 2 of life in a picture of severe asphyxia (Fig. 1,2).

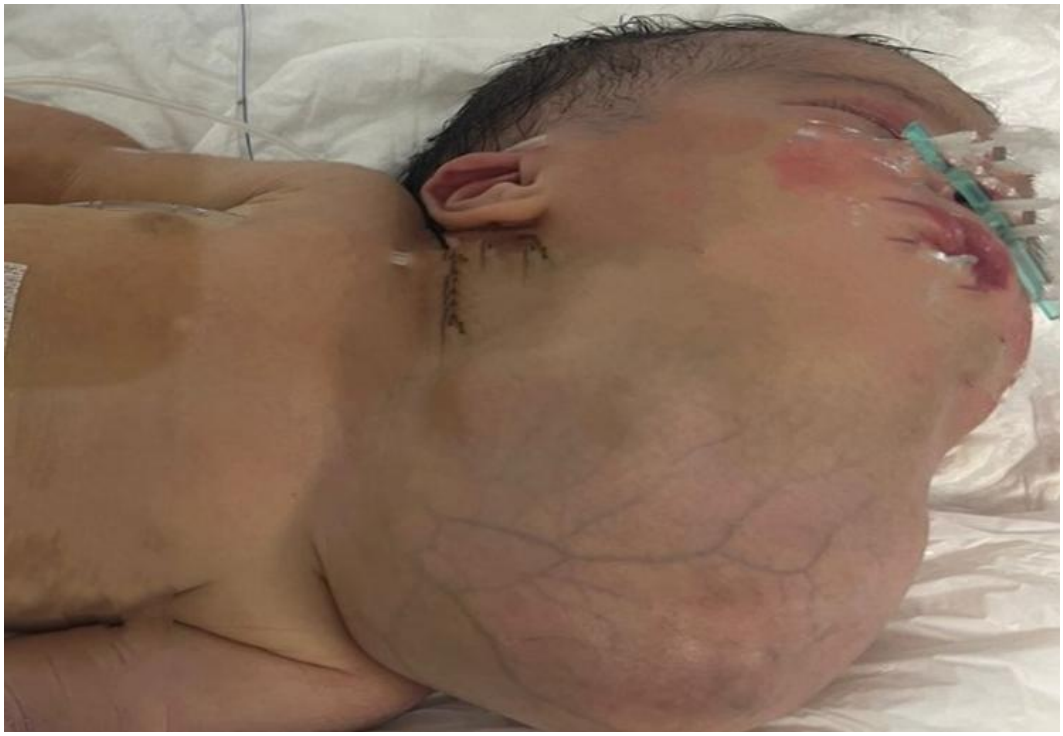

Figure 1: Compressive cervical swelling.

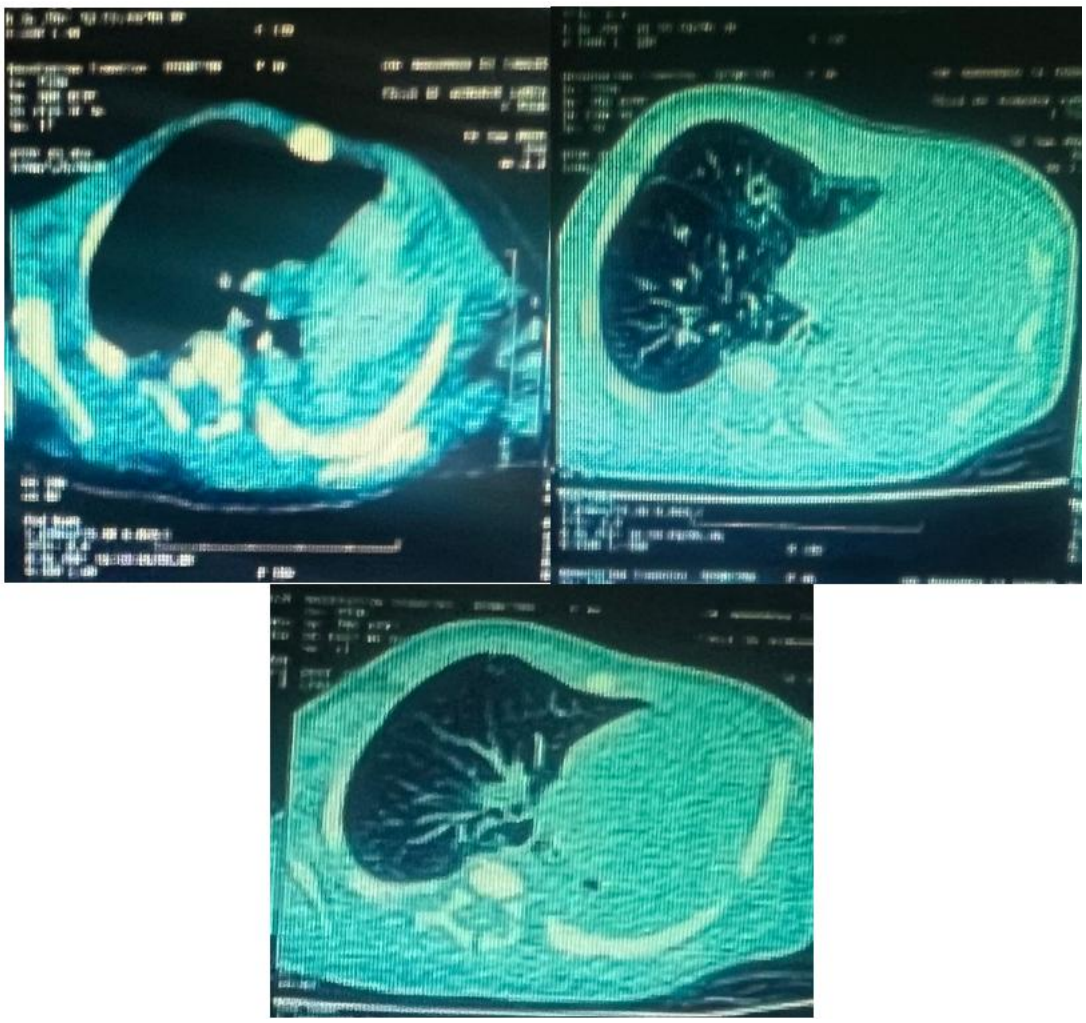

Figure 2: CT appearance of the cervical mass.

Discussion

From the Greek teratos (monster), teratomas are malformative tumors deriving from the transformation of multipotent germ cells. They are composed of ectodermal, endodermal and mesodermal tissues in variable proportions, hence the term embryonic tumor [1,2]. This is a rare tumor, occurring in 1 in 40,000 births. Cervical localization represents 1.5 to 5% of all locations.[3]. There is a clear female predominance (3/4 of cases). Its volume, preventing normal growth of the fetus, can be responsible for hypotrophy or prematurity. The germ cells or primary gonocytes migrate at the expense of the yolk sac during the first weeks of intrauterine life and will colonize the sexual cord forming undifferentiated primitive gonads. They can stop along their migration to transform and form a benign or malignant germ cell tumor, these can thus be located from the head to the coccyx of the child [3,4].

Teratoma is a very heterogeneous, cystic tumor with solid parts. Hair, bone or cartilaginous fragments and sometimes organoid structures may be found. It is necessary to analyze the entire tumor and take multiple samples to avoid missing an undifferentiated, malignant area, the presence of which can change the prognosis [3,5].

Prenatal diagnosis by ultrasound is possible from the 2nd trimester in the presence of polyhydramnios, but especially if a mass containing calcifications is visualized. It can then be supplemented by a fetal MRI, which will provide information on the degree of compression of the upper airways. Prenatal diagnosis allows for the preparation of the newborn's care by a multidisciplinary team, given the risk of respiratory distress, but also to prevent dystocia at delivery or tumor rupture. Unfortunately, in our context it is still rarely performed and the diagnosis is only made at thebirth [3,5]. Thus, respiratory distress caused by the tumor would be fatal for the newborn. Fortunately, both cases in our study had few or no respiratory signs, facilitating their management. At birth, CT scans or better, MRI, allow a good study of the tumor, the presence of calcifications, its characteristics and its relationships with the organs and vessels. The assessment will be completed by the dosage of α-fetoprotein, which will be repeated after excision [5,6].

The prognosis is mainly respiratory, when the volume of the mass is large and compresses the airways. Thus, antenatal diagnosis allows good management. Two techniques of artificial ventilation from birth before clamping the umbilical cord are described, by a scheduled cesarean section: EXIT (ex-utero intra partum technique) where the head of the fetus is exteriorized to allow exploration of the airways and perform intubation or even a tracheotomy if necessary; OOPS (Operation On Placenta Support) where the newborn is exteriorized in its entirety and placed on a surgical table for examination of the airways. These techniques require maximum uterine relaxation, which can be responsible for serious uterine hemorrhage and complications for the newborn such as thrombocytopenia, ascites or pleurisy [2,6,7]. Surgery will be performed after a good conditioning, unless there is deterioration in the general condition. Total excision of the tumor is often easy, since it has a cleavage plane in relation to the surrounding tissues and organs [6,7]. The prognosis depends on the severity of respiratory signs and signs of malignancy. It is generally benign in newborns.

Conclusion

Neonatal cervical teratoma, although rare, remains an important pathology to identify early due to its potentially serious clinical complications, including respiratory disorders or infections. Thanks to the evolution of diagnostic techniques, such as ultrasound and magnetic resonance imaging, it is now possible to make a more accurate and rapid diagnosis, allowing for optimal management. The treatment of choice remains surgical excision, which, in the majority of cases, allows for complete recovery, with a generally favorable prognosis if the intervention is carried out within an appropriate timeframe.

Conflict of Interests

The authors declare that they have no conflicts of interest.

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Author Contributions

The authors contributed equally to the work.

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