Diagnosis of Congenital Oral Teratoma at Prenatal Period: A Case Report

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ABSTRACT

Background: In spite of the fact that the oral congenital teratomas are rare, they may be identified throughout the ultrasonic examination. The radiologists must be oriented to identify the imaging characteristics to facilitate the best prognosis. Generally, these anomalies are benign, however, breathing difficulties are encountered, causing fetal distress and poor progress of labor beside the difficult feeding postnatally.

Aim: To make an insight into the rare cases of oral congenital teratomas.

Methods: In this case report, a cystic mass was nominated incidentally by two-dimensional transabdominal ultrasonic examination in the oral cavity of a second-trimester fetus in a 30-year-old patient. Upon arrival to the hospital, a sonographic detection was accomplished via a Samsung HS40 convex prob with 2-8 megahertz.

Results: Sonography showed a 24 weeks + gestation fetus with 11.5 x 6 x 6.7 cm complex cystic mass (volume was equal to 257 ml) protruded from the fetal oral cavity (Figures 1,2, and 3) with otherwise normal anatomy. In addition, the amniotic fluid index was over 25 cm with deepest pocket of amniotic fluid was 7 cm which indicates the polyhydramnios.

Conclusion: The radiologists must be oriented to identify the imaging characteristics to facilitate the best prognosis. In fact, the professionality of the radiologist to detect these teratomas and their physiological complication precisely could substantially contribute on the improvement of the perinatal treatment.

Keywords: oral congenital teratomas, ultrasonic examination, head and neck.

تشخيص الاورام التشوهية الفموية الخلقية في مرحلة ما قبل الولادة : تقرير حالة

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الخلاصة

بالرغم من حقيقة ندرة الاورام الخلقية الفموية ،ولكن تحدد بعض الحالات من خلال الفحص بالموجات الفوق الصوتية.يجب على أخصائي الاشعة ان يكون منتبها لتحديد خصائص التصوير الشعاعي لتسهيل افضل مصير للحالة.بصورة عامة ،هذه التشوهات حميدة ولكن هناك مشاكل في التنفس لتؤدي الى كرب الجنين وتلكؤ في تطور الولادة بجانب مشاكل في الرضاعة بعد الولادة. في الحقيقة ان مساهمة احترافية أخصائي الاشعة لتحديد هذه الاورام التشوهية ومضاعفاتها الوظيفية وذلك في تحديد التحسن في العلاج لها قبل الولادة.

الكلمات المفتاحية: الاورام التشوهية الخلقية، الفحص بالموجات الفوق الصوتية، الراس والعنق.

INTRODUCTION

Professional fetal diagnostic tests antenatally, including ultrasound, are vital in characterization and detection of a mass to improve the pregnancy outcomes.

In the clinical practical life ,the physicians are facing many challenges and among these issues are the teratomas .One of these scarce anomalies is that which is diagnosed in the oral cavity [1,2].

Scientifically, when the true neoplasm of several histological components that are strange from the place of the provenience, this condition is called teratoma, where all types of the germ cell layer (Ectoderm, mesoderm, and endoderm) should be found and that is suggested to be seen throughout the body from pineal gland to the coccyx [3]. As any congenital malformation, the etiology is unknown with the possibility of presence of genetic mutation, chromosomal abnormalities, genetic syndromes, and abnormalities throughout the embryonic period [3,4].

Human embryogenesis is a complex process that occurs during the first eight weeks after fertilization and it is very critical period as it is the time of formations of all tissues and organs [4].

In fact, oral teratomas are considered as one of the serious cases due to the obstruction of the respiratory and gastrointestinal tracts [5], and they are typically manifested during the neonatal period with signs of difficulty in swallowing(dysphagia) beside the respiratory distress.

Samiul Hasan reported that oral teratomas are out of ordinary and conceivably fatal via engendering the respiratory-digestive obstruction [6].

Teratomas, in general, are germ-cell tumors that attained by the 3 primordial germinal layers. Eighty percent of them are sacrococcygeal teratomas, while the facio-cervical type is represented about 3% [7].

The determination can be reached antenatally, however, unfortunately. the postnatal detection is more frequently take place. The causational diagnosis and handling depute a claiming issue particularly in poor societies. In our locality, a sparce case of oral teratoma is presented in a fetus of 24 weeks gestation. Up to the authors' Knowledge, this is the first case of this condition in our locality.

In this case report, a cystic mass was nominated incidentally by two-dimensional transabdominal ultrasonic examination in the oral cavity of a second-trimester fetus in a 30-year-old patient. Upon arrival to the hospital, a sonographic detection was accomplished via a Samsung HS40 convex prob with 2-8 megahertz. Sonography showed a 24 weeks + gestation fetus with 11.5 x 6 x 6.7 cm complex cystic mass (volume was equal to 257 ml) protruded from the fetal oral cavity (Figures 1,2, and 3) with otherwise normal anatomy. In addition, the amniotic fluid index was over 25 cm with deepest pocket of amniotic fluid was 7 cm which indicates the polyhydramnios.

In general, in one per 4000 births the congenital teratomas are found and these anomalies are frequent in females [5,8]. In fact, congenital teratomas are identified in all ages and represented about 1.6%-6.5% of all sites [9,10]. Prenatal ultrasonic examination could be suitable ,particularly in cases of large sized teratomas.

On the other hand, postnatally, the large irregular oral teratoma leads to obstructive symptoms and respiratory distress syndrome with difficult feeding [11], and all these factors necessitate the early diagnosis.

In addition, deformities in nasolabial structures may be noticed as the teratoma is the cause of intraoral and or facio-oral anomalies and that depends on the time of development of teratomas [12].

Regarding the diagnosis, other imaging methods as computed tomography-CT- and Magnetic resonance imaging -MRI are so convenient to identify such cases beside the microscopic assessment [10].

In fact, when the teratoma present, so there is potential evidence of a cleft palate as the teratoma slowing the closure of palate [13].

The macroscopic examination of teratoma revealed presence of heterogenous tissues of several types, and the microscopic assessment identified a tumor of tissues that are foreign to the site [5,8]. Figure (4). The analysis of many studies like those by Benouaiche et al. and those of Omezzine et al. indicated that risk of malignancy in oral teratomas is fewer than that of gonadal teratoma [14,15].

The reports on such cases are not enough especially in our locality and there is a real need to perform more studies to concentrate on the development of oral teratoma regarding the etiology, diagnosis and management. Finally, the early surgery is the method of the treatment of oral teratoma with multidisciplinary team of pediatrician, anesthesiologist, pediatric surgeons, pathologist, and radiologist to reach the best prognosis [16-19].

The size of oral teratomas is a principal prognosticating factor as larger tumors repeatedly create couples of problems (feeding difficulties and mechanical airway obstruction). For cases discovered in the second or third trimester, repetition of sonographic evaluations must recommended, concentrating on the mass's growth and evaluation of fetal breathing and swallowing. Forecasting of tracheal occlusion prior to birth should be kept in mind. Such dormant disablement

may entail an instantaneous intervention to make the neonate's airway following delivery secured. In fact, in extreme cases the plan of EXIT policy is requisite [20,21].

A study by Li YL, Zhen L, and Li DZ reported the presence of oral teratomas via using ultrasound and confirmed by MRI, they concluded that the prenatal diagnosis of ultrasound is useful in such cases (20) and reported that respiratory consequence is the cause of fetal death [20].

Calda et al. reported that the prenatal care must include the application of anatomic ultrasound between the 18th to 22th of pregnancy for in utero detection of teratomas. The optimized program anatomically will be performed at the head and neck region via sagittal and coronal views of the face to visualize the nose and lips. In addition, to distinguish between the macroglossia and oral mass as the teratomas appeared as cystic or solid mass that displace the fetal tongue. In general, the continuous opened mouth may give a guide to the diagnosis [22].

In fact, authors reported that teratoma are often originated from the palate or tongue. In case of large size teratoma, MRI is indicated to exclude the potential intra-cranial anomalies and respiratory obstruction [23,24].

The radiologists must be oriented to identify the imaging characteristics to facilitate the best prognosis. In fact, the professionality of the radiologist to detect these teratomas and their physiological complication precisely could substantially contribute on the improvement of the perinatal treatment.

Figure 1. An image of Transabdominal ultrasound of fetus in second trimester with a multilocular complex cystic mass ,the content are of variable echogenicity, the surrounding liqour appear increased in amount delineating the mass.

Figure 2.An image of transabdominal ultrasound revealed a pedunculated polypoidal mass protruding from the mouth of fetus and floating in the amniotic cavity fluid , the mass had a mixed solid – cystic echotexture ,and the internal content shadows are of different echogenicity :hyper,iso, hypo and anechoic shadows ,with the surrounding amniotic fluid increased.

Figure 3.An image of transabdominal ultrasound of fetus in second trimester with presence of about 11.5 x 6 x 6.7 cm size complex cystic mass of lobular outline which sonographically appear to be projected from oral cavity of the fetus and floating into the amniotic cavity , the mass content are of different echogenicity range from anechoic to hyperechoic content indicate presence of mixed solid – cystic tissue layers with presence of areas of calcification.

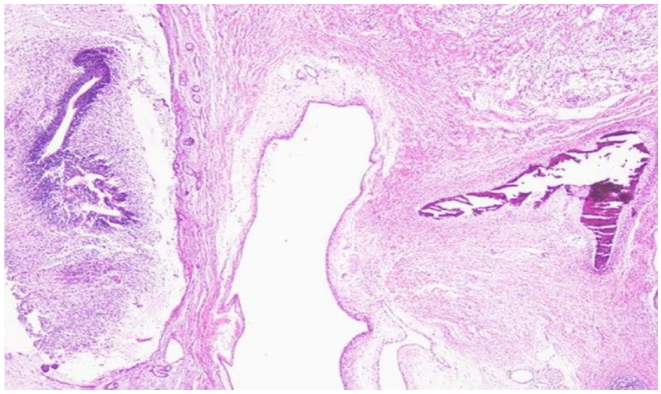

Figure 4.A micrograph of a section of teratoma of colonic epithelial tissue, bone, and neural tissue [8].

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Conflict of Interest

Nil

Ethical Consideration

Ethical approval have been obtained from scientific committee of department of Anatomy, College of Medicine, University of Mosul.

Authors' Contribution

Each author contributes evenly.

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