HJOG An Obstetrics and Gynecology International Journal

Case Report

HJOG 2024, 23 (3), 225-230 | DOI: 10.33574/HJOG.0569

A Case Report Of An Isolated Dextrogastria Diagnosed In First Trimester Ultrasound Screening

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Abstract

Isolated dextrogastria is an uncommon congenital abnormality defined by rightward stomach rotation. Although it was usually thought to be a harmless discovery with no long-term implications, potential connections with other congenital malformations have been documented. In our case, a 30-year-old primigravida's fetus with isolated dextrogastria and an abdominal cyst gave birth at 38 weeks of pregnancy and later received a biliary atresia diagnosis. This case report contributes to the expanding collection of literature on solitary dextrogastria and highlights the importance of ongoing monitoring for any related anomalies and long-term repercussions.

Key words: Dextrogastria, Prenatal diagnosis, Anomaly detection, Fetal abnormalities, Obstetric ultrasound, Patient counseling, Early diagnosis, Gastrointestinal tract malformation

Introduction

The stomach is positioned on the right side of the abdomen in isolated dextrogastria, a rare congenital abnormality. Other congenital malformations, like as heart problems, intestinal atresia, and situs inversus, are frequently associated with this condition. It is believed that the prevalence of isolated dextrogastria is fewer than 1 in 10,000 live births. Although prenatal ultrasonographic screening has boosted the discovery of isolated dextrogastria in utero, reports of this defect in live-born newborns remain scarce.

We present a 30-year-old primigravida with solitary dextrogastria and an abdominal cyst. The patient was examined with periodic ultrasonographic screening throughout her pregnancy and delivered

to a female infant at 38 weeks of gestation.

This case highlights the importance of routine ultrasonographic screening during pregnancy to identify and monitor fetal anomalies. It also highlights the need for further investigation into the etiology and management of isolated dextrogastria with associated anomalies. In this paper, we describe the prenatal and postnatal management of our case, we review the literature on isolated dextrogastria and discuss the clinical implications of this rare congenital anomaly. Moreover, we try to contribute to the growing body of the literature by highlighting the importance of ongoing surveillance for long-term outcomes in pregnant women.

Case presentation

We present the case of a 30-year-old primigravida who was referred to our fetal medicine unit at 12 weeks of gestation due to a detected abnormality on her ultrasound scan. Her nuchal translucency was calculated as 2mm and her pregnancy-associated plasma protein-A (PAPP-A) levels were 1,102 MoM. A 7x5x5mm abdominal cyst was also detected during the ultrasound examination. The patient underwent fetal echocardiography, amniocentesis, and growth scans every three weeks to monitor for any additional anomalies (Figure 1, 2).

At 20 weeks of gestation, a fetal ultrasound confirmed isolated dextrogastria with a normal appearing heart and no other associated anomalies (Figure 3). The abdominal cyst was still present but had not grown in size. The patient was counseled about the potential implications of isolated dextrogastria and the need for continued fetal monitoring.

The patient was examined with regular ultrasounds for the whole duration of her pregnancy to measure fetal growth and development. Due to breech presentation, the patient had a scheduled cesarean procedure at 38 weeks of gestation and delivered to a healthy female infant weighing 2,900 grams. On physical inspection, the newborn was found to have no apparent defects after being checked postnatally. However, at the third day of life, the infant had increased LFTs (Direct bilirubin: 3,24mg/dL / GGT: 661 U/L) and jaundice and was transferred to a tertiary neonatal unit. A series of examinations showed biliary atresia. The examinations realized, were elastography, 2 days after the birth, with increased rates reaching 12kPa and abdominal ultrasound. The U/S revealed a gallbladder connected with a thin duct with a cystic formation measuring 1,95x1,5cm, which cannot be seen to have an obvious communication with extrahepatic bile ducts. Moreover, the spleen was in the right hypochondrium with a multilobular morphology and a total longitudinal axis of 4cm, possibly due to polysplenia. The stomach was located on the right. In the context of heterotaxy, the position of the great vessels of the abdomen was also reversed with the inferior vena cava being checked to the left of the aorta. The inferior vena cava was not discernible, as far as it was checked, in its upper intrahepatic part. Furthermore, she underwent a Kasai procedure at 4 months of age, which successfully restored bile flow. Genetic testing for common genetic causes of biliary atresia, such as Alagille syndrome and progressive familial intrahepatic cholestasis, was negative.

Discussion with the parents did not reveal any familial history of congenital anomalies, and the patient was discharged home in stable condition. Follow-up evaluations at 1 year of age and 2 years of age showed normal growth and development, with no further evidence of biliary atresia.

In summary, we present a case of a 30-year-old primigravida with isolated dextrogastria and an abdominal cyst, who underwent routine fetal monitoring and delivered a healthy female infant. The postnatal diagnosis of biliary atresia highlights the importance of continued surveillance for potential

long-term consequences of isolated dextrogastria, as early postnatal diagnosis is very important. Further research is needed for better understanding of the association between isolated dextrogastria and other congenital anomalies, as well as the potential genetic basis of this rare condition.

Discussion

Dextrogastria is an extremely uncommon congenital defect that is typically regarded as being completely harmless and having no long-term repercussions.[1] Despite this, probable connections with various congenital malformations have been documented, including intestinal malrotation, situs inversus, and congenital heart problems.[2,6] Several recent studies have stressed the need for constant monitoring to detect anomalies and anticipate consequences.[3,4,7]

It is uncertain what causes solitary dextrogastria, however it is likely to be the result of a deviation in the regular embryonic spinning of the midgut.[8] As isolated dextrogastria has been identified in populations with an inheritance of congenital anomalies[9], genetic factors could play a role. In addition to possible connections with additional congenital anomalies, isolated dextrogastria has also been linked to an elevated likelihood of gastrointestinal complications, such as gastroesophageal reflux disease and peptic ulcer disease.[10]

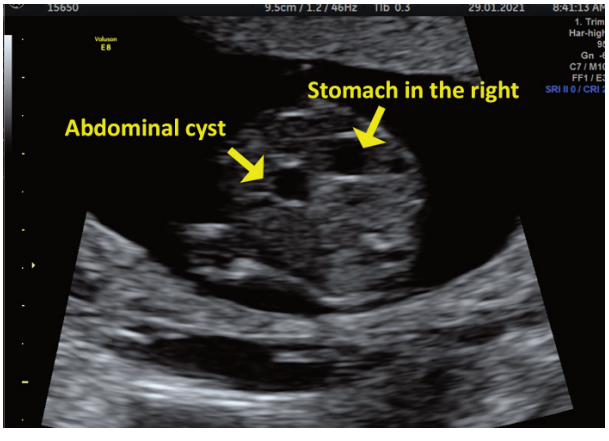

Figure 1. A 7x5x5mm abdominal cyst was detected during the nuchal translucency at 12 weeks of gestation. Fetal echocardiography and amniocentesis followed and both revealed no abnormalities.

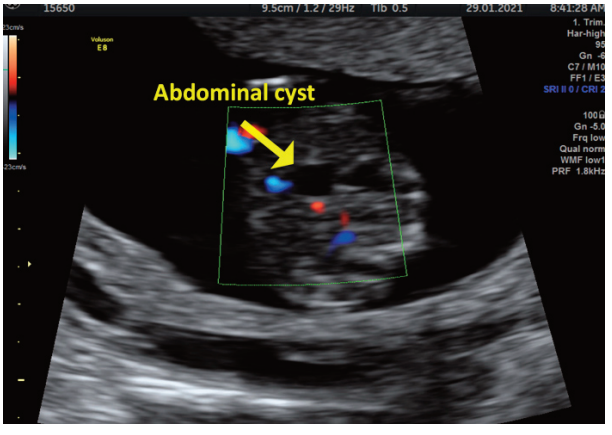

Figure 2. The abdominal cyst and the stomach in the right.

In our case, routine fetal monitoring enabled early detection and treatment of accompanying anomalies, involving an abdominal cyst and biliary atresia. Biliary atresia is an extremely uncommon form of congenital defect that is defined by the constriction of the bile ducts. The liver could suffer long-term damage if this illness is not treated. One in eighteen thousand and one in twenty thousand infants are estimated to have biliary atresia, according to current studies.[11] Despite the fact that the precise cause of biliary atresia is unknown, it is widely admittable that a combination of inherited and environmental factors contribute to the disorder.[12] Our example demonstrates the significance of ongoing monitoring for the potential existence of abnormalities. The relevance of fast review and supervision of any anomalies found is highlighted.

Magnetic resonance imaging (MRI) and three-dimensional ultrasound have also been investigated as potential tools for the diagnosis and management of isolated dextrogastria in recent studies.[12,13] The use

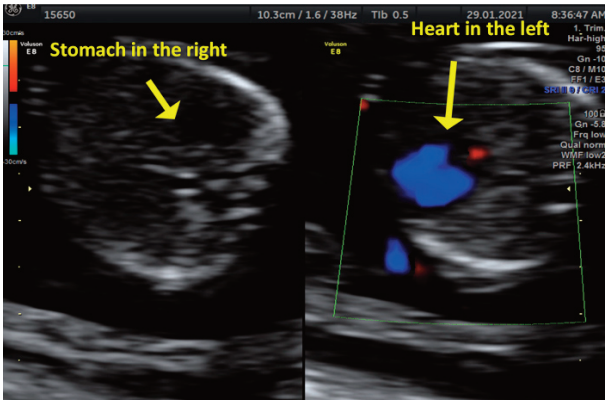

Figure 3. The heart is correctly depicted with a left axis (fetal station is breech) while the stomach is placed on the right side.

of three-dimensional ultrasound has been validated for diagnosing isolated dextrogastria, particularly in situations where a conclusive response cannot be achieved using conventional two-dimensional ultrasonography. This is especially important in cases where 3D ultrasonography can shed light that 2D imaging cannot.[13] Ultrasound is the gold standard for diagnosing isolated dextrogastria, however MRI has proven to be an essential supplement in cases where other abnormalities are suspected.[13]

In order to identify and treat related disorders in newborns diagnosed with isolated dextrogastria, we advise clinical practices to implement comprehensive and ongoing postnatal monitoring based on the results of this case. Multidisciplinary follow-up is also required to address long-term issues and enhance patient outcomes.

Conclusion

Isolated dextrogastria is a rare congenital anomaly that is typically considered a benign finding with no long-term consequences. Recent investigations have underlined the significance of ongoing surveillance for related malformations and long-term repercussions, and there have been reports of possible correlations with additional congenital defects. The potential for related anomalies like biliary atresia is highlighted in our instance, highlighting the importance of timely diagnosis and care of any discovered anomalies. Further research is needed to fully understand the etiology of isolated dextrogastria and to identify potential long-term consequences and optimal management strategies.

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Received 18-4-2024
Revised 1-5-204
Accepted 15-5-2024