



“A CASE OF UMBILICAL CORD CYST IN SECOND TRIMESTER WITH OTHER ANATOMICAL ANOMALIES”

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Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work – AAS,AAS,MG.

Drafting the work or revising it critically for important intellectual content - AAS,AAS,MG. Final approval of the version to be published – AAS,AAS,MG.

Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved – AAS,AAS,MG.

Case Report

A 22 year old primigravida with normally progressing pregnancy present to Department of radiology for targeted imaging for fetal anatomical anomaly scan at 22 week of gestation. She presented at 21 weeks 4 days of gestation according to her last menstrual period her vitals were within normal limits (110 / 80 mm Hg , 79 / min) , hematological reports were also normal (Hb 12 mg/dl , RBS ~ 93 mg/dl). Pregnancy was confirmed on urine pregnancy test followed by an ultrasound scan on which a single live intrauterine gestation sac (CRL ~ 8.92 mm,fetal heart rate

149/min) was imaged at 7 weeks of menstrual age. Next scan was performed at 13th week for nuchal translucency (NT ~ 1.4mm) and fetal anatomical anomalies at 20th week of gestation was performed. At targeted imaging for fetal anomalies scan (TIFFA) an umbilical cord cyst (figure 1 a& 1b) measuring ~ 3.2 x 2.2 cm was seen near to the cord insertion site (0.84 cm away from the fetal end of cord insertion site). A few other anomalies imaged with the umbilical cord cyst are underdeveloped cerebrum (figure 2), echogenic foci in both ventricles (figure3), bilateral enlarged kidneys and polydactyly of right feet.



Figure 1a. Transabdominal ultrasonography gray scale imaging shows Umbilical cord cyst near the fetal insertion site. **1b.** on putting colour Doppler we can see umbilical vessels around the cyst.

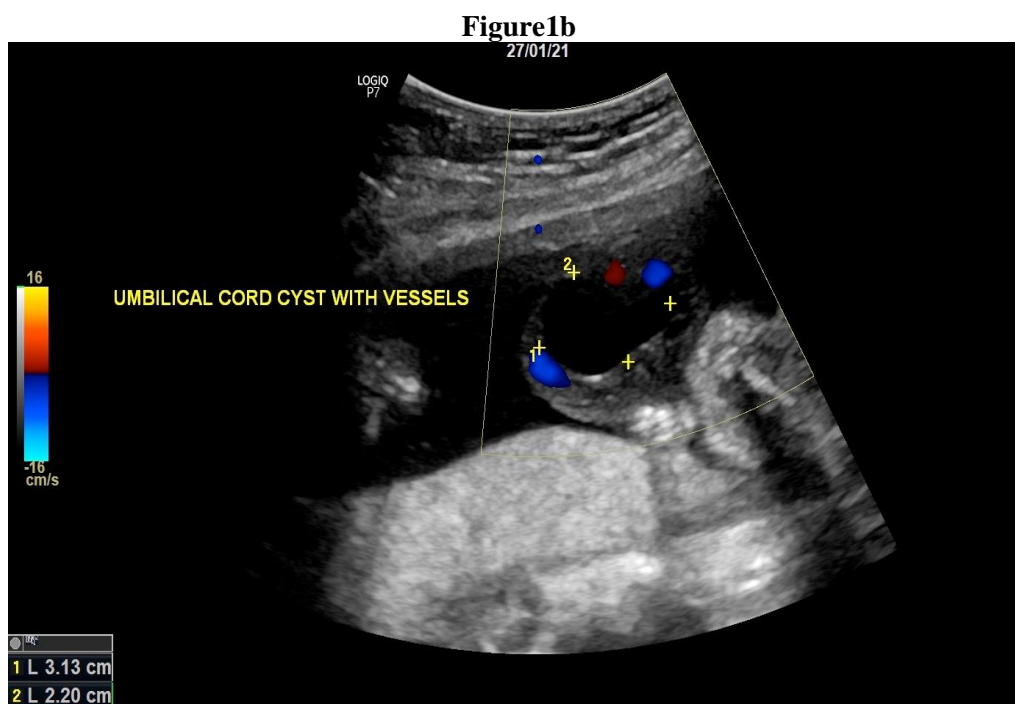




Figure 2:-Transabdominal sonography of fetal skull showing under developed skull.

Figure 3:-Transabdominal ultrasonography of fetal heart showing echogenic foci in the bilateral ventricle of heart.



Discussion:

Umbilical cord is an important connection between fetus and placenta which begins to develop around 3rd week and is completed by around 7 weeks of embryonic formation. It comprises of connecting stalk, vitelline duct, and umbilical vessels surrounded by the amniotic membrane which regresses approximately by the end of first trimester and then comprises of two umbilical arteries and one umbilical vein surrounded by gelatin like extracellular matrix known as Wharton’s jelly. The umbilical vessels transports fetal blood to placenta and vice versa. The umbilical vein carries oxygenated blood with nutrition to fetus and umbilical artery carries deoxygenated blood with waste products from fetus to placenta. The umbilical cord normally measures approximately 50 to 60 cm in length, 2

cm in diameter and is clamped at the time of delivery as now baby can breath on it’s own and the rest of the cord is delivered along with the placenta. After delivery the portion of the cord attached to the baby can be used for umbilical vein catheterisation for transfusion and resuscitation. Due to presence of stem cells within, it is used in stem cell therapy for example Hematologic carcinomas .[1]

Ultrasound is the primary modality of imaging to examine umbilical cord and can be visualised as early as 42 days of gestation and well established by 8-9 weeks of gestation. Physiologic herniation of mid gut occurs between 7-12 weeks of gestation at base of the cord which normally returns to fetal abdomen by the end of 11th week without any loop of bowel at insertion site of cord. Umbilical cord

on ultrasound appears as a twisted, rope like anechoic structure with a peripheral echogenic rim. Complete examination of the umbilical cord in 2nd trimester include gray scale and colour doppler ultrasound to assess number of vessels, cord coiling, cord thickness, velocity and wave pattern within the vessel.[2]

Umbilical cord cyst are anechoic, thin walled cystic space along the umbilical cord between two vessels.

They are found anywhere along the cord but usually seen at the fetal insertion. [3]

Ross et al reported the prevalence of umbilical cord cysts at 7-13 weeks gestation approximately 3%, and in more than 20% of cases fetal chromosomal or structural defects is possibly detected.[4]

Umbilical cord cyst are classified as [5],

True cysts: They are generally located toward the fetal insertion site and are tiny remnants of allantoic cyst or umbilical vesicle. Cysts have epithelial lining and can be approximately 4 to 60 mm in size. It is detected in 3.4% of first trimester pregnancies and have no clinical importance, though 20% of these cysts persist in second trimester. Occasional association with fetal structural anomalies and aneuploidy is observed.

False cysts

Also known as pseudocysts or Wharton jelly cyst. They originate from a focal edema or liquefaction of the Wharton's jelly. Compared to true cysts they do not have epithelial lining and are seen more commonly. At ultrasound they appear as a cystic mass with internal echos near cord insertion and umbilical vessels passing through it.

CONCLUSION

This is a rare case of umbilical cord cyst with associated anatomical anomalies. This case study demonstrates the utility of antenatal ultrasound (anomaly scan) at 20 weeks gestation to reliably pick up any anatomical anomalies.

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