

Case Report

SONOGRAPHY IN UNSTABLE BREECH WITH FOOTLING & CORD PRESENTATION WITH JAUNDICE

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ABSTRACT

Cord or funic presentation is detected in sonography when the umbilical cord is interposed between the leading part of the fetus and the internal cervical os. Its prevalence is 12-25:10,000 pregnancies. It is usually diagnosed by sonography in an asymptomatic patient. The increased use of antepartum obstetric ultrasound especially with colour flow Doppler has assisted in making the diagnosis of a presenting cord. Morbidity and mortality associated with prolapse of the cord have declined due to improvements in obstetric management as well as neonatal care.

Keywords: Funic Presentation, Umbilical Cord Prolapse, Footling Breech Presentation, Unstable Breech

INTRODUCTION

Cord or funic presentation is detected in sonography when the umbilical cord is interposed between the leading part of the foetus and the internal cervical os. Umbilical cord prolapse usually denotes the egress of the cord beyond the cervix in advance of the leading part of the foetus usually in the presence of ruptured membrane. Its prevalence is 12-25:10,000 pregnancies (Barclay, 1989).

CASES

A female patient aged 26 years having last menstrual period on 20/04/2014 was admitted in the Department of Obstetrics & Gynaecology on 14/11/14 with yellow discoloration of conjunctiva and skin & varicose veins in left leg since two months.

Personal history: No history of asthma, diabetes mellitus, bleeding disorder, hypertension or tuberculosis. Patient attended ANC regularly was taking folic acid and supplement mixed diet.

No significant family history was present.

Obstetric history: Gravida 2, Para 1, Last child birth was 4 years ago, a female baby with normal vaginal delivery.

Physical examination: GC fair, Pulse 86/minute, regular; BP 110/80 mm of Hg, Yellow discoloration of skin & icterus were present, pedal oedema was not present, varicose veins were seen in left calf.

Respiratory system, Cardiovascular system and central nervous system were normal.

Per Abdomen: Uterine fundal height was 26-28 weeks, vertex floating, FHS was present in right hemiabdomen. Uterus was relaxed.

Lab investigations revealed haemoglobin 10.5 gm%, Total leucocyte count $11.5 \times 10^3/\text{mm}^3$, Neutrophil-74% Lymphocyte 21% Monocyte 3% Eosinophil 2% Basophil 0%, Total red blood cell count $3.21 \text{ millions}/\text{mm}^3$, Packed cell volume 27.3%, platelet count 169000 /cu mm, Blood group AB positive, HBsAg non-reactive, RBS 92mg/dl, Random blood sugar 92 mg%, blood urea 15mg/dl, serum creatinine 0.6mg/dl, SGOT 1988 units/l, SGPT 1638 units/l, Serum bilirubin 10.9 mg/dl: conjugated 8.0 mg/dl; unconjugated 2.9 mg/dl, Bile salts & bile pigments in urine were positive. HIV test non-reactive, Sickling of RBC was negative, serum proteins- total 5.3g/dl, albumin 2.4g/dl, globulin 2.9g/dl, A/G ratio was 0.82. Urine examination was normal.

Case Report

USG revealed a single live foetus in breech position with extended leg and foetal foot lying against internal os which was closed. The umbilical cord is also in close proximity to cervix. Sonographic gestational age was 27 weeks.

Expected foetal body weight was 1477 grams $\pm$ 150 grams Foetal heart rate was 144/ minute, regular, EDD 25/01.2015 $\pm$ 7days. Amniotic fluid volume was normal. Placenta was fundal in location attached to anterior uterine wall with grade I maturation. Umbilical cord was three vessel cord (Figure 1).

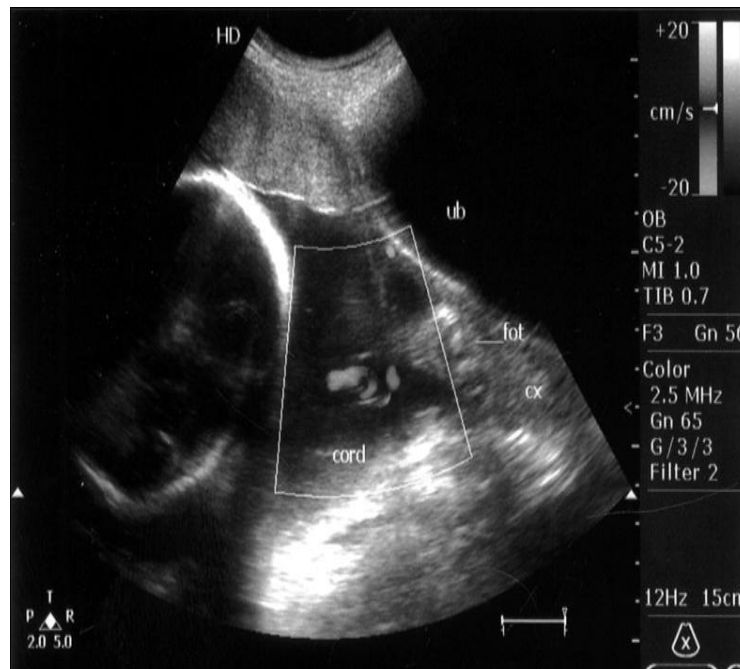


Figure 1: Foetal foot lying against internal os and the cord is seen just above the foot at 27 weeks GA



Figure 2: Review USG after 3 weeks revealed breech position with foetal foot lying against cervix and the umbilical cord was present in the lower segment of uterus. The umbilical artery PI was 1.75 & RI 0.83 with good diastolic flow

Case Report

Patient was admitted on 12/01/15 in with lower abdominal pain with no history of vaginal bleeding/discharge. Total serum bilirubin was 0.9 mg/dl: conjugated bilirubin 0.54mg/dl, unconjugated bilirubin 0.36mg/dl.

A single live male baby in vertex presentation was delivered per vagina having birth weight of 2975 grams.

DISCUSSION

Funic presentation even during early labour is often not clinically suspected. When the cervix is minimally dilated the cord may not be palpable on examination and the foetal heart rate tracing is often normal or shows mild to moderate variable decelerations. Umbilical cord compression with contractions as labour progresses causes severe variable decelerations and/or profound foetal bradycardia constituting an obstetric emergency with potential for foetal death (Dildy and Clark, 1993).

Funic presentation is usually diagnosed by sonography in an asymptomatic patient. The rate of umbilical cord prolapse is much lower in the vertex presenting foetus than in the foetus with breech presentation or transverse lie: the overall risk in vertex presentation is quoted at 0.2 to 0.4%, in all breech presentations 3.5% and in transverse lie or footling breech presentation approximately 10% (Dildy and Clark, 1993). The first reported case of prenatal diagnosis of funic presentation or occult cord prolapsed was in 1979, when Christopher, Spinelli and Collins diagnosed funic presentation in two patients in the late mid-trimester with hourglass membranes and malpresentation of the foetus (Christopher *et al.*, 1979). Subsequent reports have described diagnosis of funic presentation by means of transabdominal and transperineal sonography and more recently with the use of Doppler studies (Hales and Weatney, 1984; Pelosi, 1990).

It is of paramount importance to differentiate funic presentation from vasa previa and the sonographic differentiation may be quite difficult. If the umbilical cord insertion into the placenta is clearly demonstrable, and the placenta does not have a succenturiate lobe, then vasa previa is not possible. Sonography with full bladder of the patient putting her in Trendelenburg position, cord loops from funic presentation may move away from the cervix, whereas the vessels in vasa previa remain unchanged in this position. Transvaginal sonography may also be helpful in the differential diagnosis.

Intervention (Delivery) is preferred in cases of persistent cord presentation. It can be argued that careful external version could correct both the cord position and foetal malpresentation and allow vaginal delivery.

Funic presentation and umbilical cord prolapsed are increased in frequency with malpresentation (breech and transverse), polyhydramnios, maternal pelvic deformities, uterine abnormalities such as myomata, multiple gestation and low-lying placenta or marginal placenta previa closest to the cervix (Dildy & Clark, 1993).

Breech presentation is defined as a foetus in a longitudinal lie with the buttocks or feet. This occurs in 3-4% of all 28 weeks gestation to 7% of births at 32 weeks' gestation to 1-3% of births at term.

There are three breech positions:

frank breech (50-70%)-Hips flexed, knees extended (pike position)

complete breech (5-10%)- hips flexed, knees flexed (cannonball position)

Footling or incomplete (10-30%)-one or both hips extended, foot presenting.

Perinatal mortality is increased 2-4 fold with breech presentation. Deaths are most often associated with malformations, prematurity and intrauterine fetal demise and are observed in 17% of preterm breech deliveries and in 9% of term deliveries.

Umbilical cord prolapsed may occur particularly in the complete, footling or kneeling breech. This is caused by the lowermost parts of the baby not completely filling the space of the dilated cervix

Among full term, head down babies the incidence of cord prolapse is 0.4%, among frank breech 0.5%, among complete breech 4-6% and among footling breeches 15-18%.

Historically, the incidence of cord prolapsed has been reported as approximately 1 in 300 deliveries. The reported incidence has fallen to about 0.2% or 1 in 500 deliveries mainly as a result of changing obstetric

Case Report

management, including antenatal ultrasound diagnosis of funic presentation or vasa previa as well as almost universal use of continuous electric foetal monitoring Murphy & Mackenzie (1995).

The proportion of babies in the breech position declines with gestational: 20% at 28 weeks and 3-4% at term. The majority of fetuses turn spontaneously by 36 weeks, adopting the 'best fit' position that a normal gravid uterus provides.

Funic presentation before rupture of membranes is a predisposing factor to umbilical cord prolapsed. This is visualised in ultrasound approximately 1 in 167 (0.6%) live births Murphy & Mackenzie (1995). The increased use of antepartum obstetric ultrasound especially with colour flow Doppler has assisted in making the diagnosis of a presenting cord and preparing for caesarean delivery before overt or occult prolapse.

Predisposing factors for breech presentation include prematurity, uterine malformations or fibroids, polyhydramnios, placenta previa, foetal abnormalities (eg. CNS malformations, neck masses, aneuploidy) and multiple gestations. Foetal abnormalities are observed in 17% of preterm breech deliveries and in 9% of term breech deliveries. Cord prolapse may be frank or occult. Overt or frank cord prolapsed is defined as the cord positioned ahead of the foetal presenting part. In contrast, occult cord prolapsed is defined as the position of the cord alongside the presenting part Yla-Outinen *et al.*, (1985).

Oxygen deprivation may occur from either cord prolapsed or prolonged compression of the cord during birth as in head entrapment is caused by the failure of the foetal head to negotiate the maternal mid-pelvis. If oxygen deprivation is prolonged, it may cause permanent neurological damage (for instance, cerebral palsy) or death.

Morbidity and mortality associated with prolapsed of the cord have declined due to improvements in obstetric management as well as neonatal care. Mortality from umbilical cord prolapsed has fallen from 375 per 1000 to between 36 and 162 per 1000 live births in the last 100 years Murphy & Mackenzie (1995). Interestingly, despite ominous foetal heart rate tracings, abnormal foetal blood gas readings and low Apgar scores, most of the mortality is attributable to congenital anomalies and prematurity Yla-Outinen *et al.*, (1985).

CONCLUSION

Sonographic evaluation & Doppler study of umbilical artery provide the information about foetal and cord position as well as foetal haemodynamics for safe obstetric management to avoid associated morbidity and mortality.

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Case Report

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