

- Summary

a 32-year old pregnant lady G1P0 at 38 weeks gestation, presented with reduced fetal movement for two days on background of asymmetrical IUGR and positive both IgM and IgG Rubella. CTG for an hour showed flat variability with normal baseline, no accelerations, some deceleration and no fetal movement. CAT 1 emergency C-section performed. A male baby was delivered. He was flat (Apgar's score 3) for 30 min despite of the resuscitation by the paediatric team. Baby Hb was 45 and needed blood transfusion. Kleihauer Betke test was very high at 105.8 ml

- Background

it is important to flag the pregnancy risk factors when you interpret the CTG. In my case, those risk factors were; asymmetrical IUGR, positive Rubella test, reduced fetal movement with absent variability on CTG. It is also important to know how to interpret antenatal CTG versus in labour CTG. getting some investigations' results in time (such as KH test) in rural settings is a challenge.

- Case presentation

a 32-year old pregnant lady G1P0 at 38 weeks gestation, presented with reduced fetal movement for two days.

no uterine contractions, no vaginal loss, no fever, reduced to absent fetal movement in the last two days

In this pregnancy:

Normal BMI

Blood group O+, RBC Abs neg.

Rubella immune.

Negative serology

negative urine screening test

No smoking, alcohol nor illicit drugs

Normal fetal morphology scan

Normal GTT

fetal growth scan at K36+5: HC 64%, AC 6%, EFW 20%, normal doppler and AFI, placenta anterior clear of os.

given asymmetrical IUGR, TORCH test was done showing Rubella IgM and IgG positive

on examination:

observations were normal.

soft abdomen, some uterine irritability that the patient had not been feeling

fundal height 36-37cm

- Investigations

COVID RAT was negative

FBC and chem20 were unremarkable

CTG : baseline 145 bpm, absent variability, late decelerations, non-reactive.

Kleihauer Betke test normally takes time to comeback in rural hospital: high 105.8ml. we got the results after we delivered the baby.

- impression

antepartum fetal distress (most probably due to fetomaternal haemorrhage)

- Treatment

CAT1 C-section, uneventful, estimated blood loss 700ml

- Outcome and follow-up

routine postoperative follow up

prophylactic clexane, mechanical VTE prophylaxis TEDS

IDC removed next day, mobilisation

vital signs and PV bleeding monitoring

baby was admitted under paediatric team

baby weight 2.8kg

Hb was low at 45, lactate 2.9, PH 7.42, BSL 6.4

the baby was transferred to a tertiary hospital for blood transfusion and further management

- Discussion

Maternal perception of fetal movement is reassuring for pregnant women, while decreased fetal movement (DFM) is a common reason for concern. Maternal perception of fetal movement typically begins in the second trimester at around 16 to 20 weeks of gestation and occurs earlier in parous women than nulliparous women [1]. At least 40 percent of pregnant women become concerned about DFM one or more times during pregnancy, but most episodes are transient [2]. Four to 15 percent of pregnant women will contact their care provider because of persistent DFM in the third trimester [3].

In a case control study from England in which perception of fetal movement two weeks prior to the stillbirth was evaluated in 291 cases of stillbirth and 733 gestationally matched controls, DFM was associated with an increased risk of stillbirth (adjusted odds ratio [aOR] 4.51, 95% CI 2.38-8.55), whereas increasing strength of fetal movements was associated with a decreased risk of stillbirth (aOR 0.14, 95% CI 0.08-0.24) [4]. Daily fetal hiccups were also associated with a reduced risk of stillbirth (aOR 0.31, 95% CI 0.17-0.56). The most common disorder associated with stillbirth in this study was fetal growth restriction, which was associated with 45.2 percent of cases.

initial evaluation by taking history, reviewing the patient's records and performing NST. USS for fetal growth and wellbeing is indicated if there is persistent DFM. Kleihauer-Betke stain or flow cytometry to rule out fetomaternal haemorrhage. In my case, the patient had a combination of IUGR, abnormal CTG and massive KH test.

Spontaneous fetomaternal hemorrhage (FMH) is defined as fetomaternal bleeding with no antecedent history of trauma and no clinical/histopathological evidence of abruption. The vast majority of spontaneous FMHs are small volume bleeds of no hemodynamic significance, but they may lead to alloimmunization. The frequency and volume of these types of bleeds increase with advancing gestational age and are highest at birth [5].

massive fetomaternal haemorrhage can lead to fetal anaemia:

* sinusoidal pattern on the CTG if acute FMH (increase FHR if chronic FMH)

* FMH ≥ 20 percent of the fetal blood volume on flow cytometry.

* MCA PSV (≥ 1.5 MoMs) on doppler USS.

Management will depend on the gestational age. If it is ≥ 32 weeks, immediate C-section is mandatory. If it is < 32 weeks with signs of severe anemia (ie, MCA-PSV ≥ 1.5 plus hydrops fetalis), intravascular transfusion (IVT) of donor red blood cells to acutely correct fetal anemia [6,7,8].

• Learning points/take home messages

-
- Perform CTG and KH test on all pregnant women who present with decreased fetal movement.
 - Flag the medical and obstetrical risk factors.
 - Urgent USS for fetal growth and wellbeing if persistent decreased fetal movement.
 - Look for USS signs of fetal anaemia (MCA-PSV ≥ 1.5 plus hydrops fetalis)
 - Management depends on the gestational age and your hospital capacity.
 - Always involve your senior medical officer.

REFERENCES

1. [Gillieson M, Dunlap H, Nair R, Pilon M. Placental site, parity, and date of quickening. *ObstetGynecol* 1984; 64:44.](#)
2. [Saastad E, Winje BA, Israel P, Frøen JF. Fetal movement counting--maternal concern and experiences: a multicenter, randomized, controlled trial. *Birth* 2012; 39:10.](#)
3. [Tveit JV, Saastad E, Bordahl PE, et al. The epidemiology of decreased fetal movements. *Proceedings of the Norwegian Perinatal Society Conference, November 2006.*](#)
4. [Heazell AEP, Budd J, Li M, et al. Alterations in maternally perceived fetal movement and their association with late stillbirth: findings from the Midland and North of England stillbirth case-control study. *BMJ Open* 2018; 8:e020031.](#)
5. [Bowman JM, Pollock JM, Penston LE. Fetomaternal transplacental hemorrhage during pregnancy and after delivery. *Vox Sang* 1986; 51:117.](#)
6. [Rubod C, Houfflin V, Belot F, et al. Successful in utero treatment of chronic and massive fetomaternal hemorrhage with fetal hydrops. *Fetal Diagn Ther* 2006; 21:410.](#)
7. [Stefanovic V, Paavonen J, Halmesmäki E, et al. Two intrauterine rescue transfusions in treatment of severe fetomaternal hemorrhage in the early third trimester. *Clin Case Rep* 2013; 1:59.](#)
8. [Votino C, Mirlesse V, Gourand L, et al. Successful treatment of a severe second trimester fetomaternal hemorrhage by repeated fetal intravascular transfusions. *Fetal Diagn Ther* 2008; 24:503.](#)

PATIENT'S PERSPECTIVE

Thank you