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Case Report

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Transverse uterine fundal incision - an alternative to vertical uterine incision for anterior placenta accreta involving the entire uterine wall: a case report

Abstract

The placenta accreta spectrum is on rise. If the placenta is covering the entire anterior uterine wall, there are definite challenges involved in delivering the fetus without exsanguination and with minimal maternal blood loss. We present a case report that highlights the use of transverse uterine fundal incision (TFUI) in an anterior placenta previa with accreta involving the entire uterine wall. It can be considered as an option to vertical uterine incision in such cases where the patient is not desirous of future fertility and caesarean hysterectomy is planned.

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Introduction

The incidence of placenta accreta spectrum is rising due to increase in the incidence of caesarean sections.[1] In cases where placenta is covering the entire anterior uterine wall, it is a nightmare for the obstetrician. Delivering the foetus without exsanguination with minimal maternal blood loss is a challenge in such a situation. One of the options is transverse uterine fundal incision (TFUI) in such placenta previas, whether there is associated accreta or not. The obvious advantage of TFUI is not cutting through the placenta. This facilitates safe delivery of fetus without risking exsanguination and minimises blood loss for the mother, thereby reducing maternal morbidity. The downside of such an approach is the risk of uterine rupture in future pregnancies if the uterus is retained. However, TFUI is still not an established approach nor its risks have been studied in detail. Here, we present a case report of caesarean delivery by transverse uterine fundal incision (TFUI) in an anterior placenta previa with accreta involving the entire uterine wall. The aim is to present TFUI as an option in such cases for safer delivery of fetus and minimise the blood loss for the mother and use of pre-operative ultrasound to mark the limit of placenta beforehand.

Case report

A 38-year-old lady presented to our clinic for a routine pregnancy check-up at 10 weeks. She was fifth gravida with one caesarean delivery and three miscarriages. Dilatation and curettage was done in one of the miscarriages. She was morbidly obese with a body mass index of 37. She had chronic hypertension. Her blood pressure was adequately controlled on two antihypertensives, labetalol and nifedipine. She did not develop superimposed pre-eclampsia. She had gestational diabetes with HbA1C of 6.4%. The sugars were controlled by adequate dietary measures and exercise. She was put under the care of dietitian. Her diet was divided into 3 meals and 3 snacks with avoidance of sugars. Exercise included thirty minutes of walk during the day. With these measures, her fasting blood sugar remained less than 90 mg/ dl and post-prandial sugars (1 hour) less than 140 mg/dl throughout the pregnancy. An informed consent was taken from the patient for publishing the research. The article is in accordance with the principles outlined in the Declaration of Helsinki.

High risk associated with obesity, hypertension, previous caesarean and advanced maternal age was discussed with the patient and her husband. Her combined first trimester screen done by fetal medicine specialist was low risk for aneuploidies but high risk for pre-eclampsia. She was started on 150 mg ecosprin at bedtime. The couple was counselled about non-invasive prenatal screening (NIPS) test in view of her advanced maternal age. The NIPS was low risk for common aneuploidies (Trisomy 21, 13 and 18). The anomaly scan was normal except for the anterior placenta covering the os. Her blood pressures remained stable on labetolol and nifedipine. She did not develop superimposed pre-eclampsia. Ultrasound monitoring was done monthly. The growth assessment at 34 weeks showed mild fetal growth restriction with normal liquor and fetal Dopplers. It was anterior placenta covering the os. There was a subtle loss of clear zone between the placenta and the myometrium (Figure 1). No excessive placental lacunae, bridging vessels or increased vascularity was noticed in the sub-placental zone. The plane between the myometrium and the bladder was preserved. MRI confirmed the same findings of presence of placenta previa with accreta.Elective caesarean delivery with caesarean hysterectomy was planned at 36 weeks in a tertiary care hospital. Interventional radiologist consultation was sought. Decision for preoperative balloon catheter placement in the anterior division of internal iliac artery was taken, after explaining the complications to the couple. Preoperative ultrasound was done to localise the upper limit of anterior placenta to plan the level of uterine incision. It showed placenta to be extending 4 cm above the umbilicus, almost covering the entire anterior uterine wall. The patient and her family were appropriately counselled about the surgical approach and procedural risks involved. On the day of surgery, in the angiography suite, under fluoroscopic control, an interventional radiologist inserted the 5F occlusive balloon catheter on the left side. Failed on the right side due

to extreme obesity. Patient was then shifted to the operation theatre. General anaesthesia was given. Midline skin incision with cephalic extension above the umbilicus was given to enable the exteriorization of the fundus of gravid uterus. A transverse uterine fundal incision was given to avoid cutting through the placenta, followed by breech extraction of the baby. It was a male baby with a weight of 2700gms. The baby cried immediately after birth. There was minimal bleeding at the incision site. The balloon catheter on the left side was inflated. The placenta did not separate after 20 mins and even, after use of oxytocics. The uterine incision was repaired. Caesarean hysterectomy was done (Figure 2). Balloon catheter was deflated after 3 hours. The sheath was removed on the next day. Patient received a total of three packed cell and three fresh frozen plasma transfusions. Postoperative period was uneventful. The patient was discharged after 5 days. The histopathology confirmed the presence of placenta accreta.

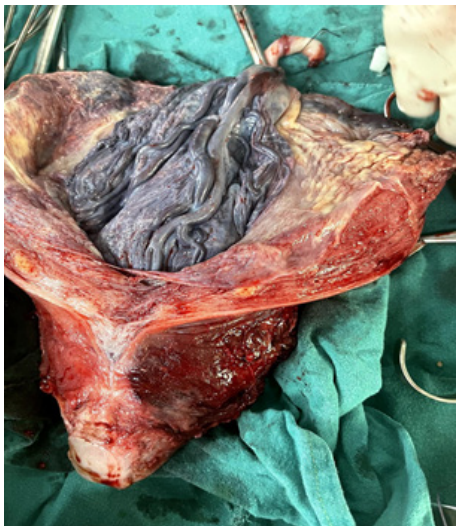

Figure 1 Transvaginal ultrasound at 34 weeks - anterior placenta covering the internal os. There is a loss of clear zone between placenta and myometrium anteriorly (small blue arrows). The plane between myometrium and Bladder wall was maintained.

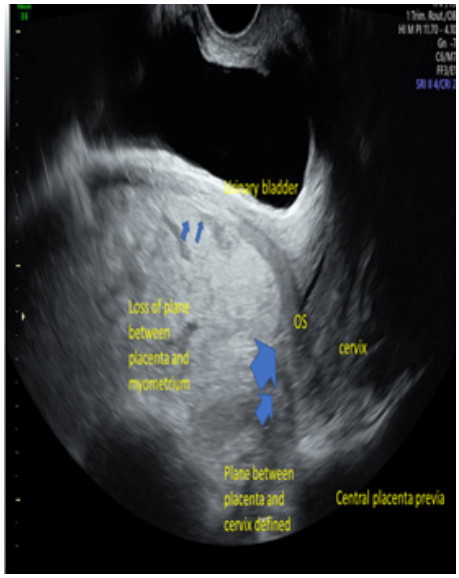

Figure 2 Uterus is seen with midline incision on posterior wall given later to show that the placenta attached anteriorly reaching uptil the fundus (bold blue arrow). Uterine fundal incision just above the upper limit of placenta.

Discussion

Placenta accreta spectrum (PAS) is on the rise. The incidence is about 1.7/ 10, 000 deliveries.[1] The incidence of excessive blood loss, massive transfusion, hysterectomy is much higher if it is anterior in location. The optimal method of delivery in cases where the PAS covers the entire anterior abdominal wall is not known yet. The rarity of such a condition further increases the dilemma. TFUI caesarean delivery was first described by Kotsuji[3] in 2004. Kotsuji described the use of transverse fundal incision in cases where the placenta was almost entirely covering the uterine wall.[4] The main advantage is avoiding the placenta totally, smooth delivery of the fetus and removal of placenta under vision where not associated with accreta. Pre-operative ultrasound was used in this case to determine the placental limit to plan the uterine incision. The placenta was entirely covering the anterior wall that obviates the use of vertical uterine incision. The decision was taken to give transverse fundal uterine incision (TFUI). There are reports which have successfully used this approach.[5] TFUI is not a widely used incision due to anticipated high risk of uterine rupture in the subsequent pregnancies.[6] The downside of TFUI approach is that its association with higher morbidity. There are only few case reports of successful pregnancies and deliveries after TFUI.[7] However, this has not been studied in detail yet.

Due to presence of limited data on its utility, it is advisable to be used where the placenta is extensively covering the anterior wall that leaves no room for any vertical or lower uterine transverse incisions and the patient is no longer desiring future fertility.[2,3] Due to above cited reasons, we chose the approach of TFUI, breech extraction of the baby and caesarean hysterectomy. With this approach, there was no risk to the fetus, minimal blood loss, minimal morbidity and fewer post-operative complications and early discharge of the patient (also, in our case).[3,8] Another disadvantage is the use of vertical abdominal incision extending into the upper abdomen. In one of the case series, peri-operative aspiration of amniotic fluid was done to reduce the uterine size and minimise the size of vertical incision on the skin.[9] However, its utility is still not established.This case highlights the importance of proper counselling of the couple, meticulous planning, use of pre operative ultrasound to plan the uterine incision and multi-disciplinary approach. If the facility is available, pre-operative ultrasound should be used to mark the limit of placenta, so that the skin and uterine incision can be planned beforehand.[10] TFUI, though rarely used, can be considered in cases with almost entire anterior uterine wall coverage and where caesarean hysterectomy is planned. If TFUI is planned in cases where uterus is to be retained and future fertility is desired, the risk of uterine rupture in subsequent pregnancy should be discussed in detail with the couples.

Conclusion

TFUI can be considered as an alternative to vertical uterine incision where the placenta is having anterior uterine wall coverage. It can be especially suitable in cases who are not desirous of future fertility and caesarean hysterectomy is planned. Pre-operative ultrasound to mark the placental limit can also influence the approach. Appropriate counselling of the couple, meticulous planning, interdisciplinary approach can help in minimising morbidity for the mother.

Acknowledgments

None.

Conflicts of interest

The author declares there is no conflict of interest.

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