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Innovative arcuate incision in placenta increta in COVID positive obstetric hysterectomy

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Abstract
Background: Placenta accreta spectrum refers to a placenta that is abnormally adherent to the uterus. There are three main entities (accreta, increta, and percreta), which are defined by histological degree of placental invasion into the myometrium. Placenta accreta spectrum is one of the most serious complications of placenta previa and is frequently associated with severe obstetric hemorrhage and obstetric hysterectomy. We present a case of placenta previa increta in COVID positive patient diagnosed by ultrasound, in which we took fundal arcuate incision for delivery of baby & obstetric hysterectomy.

Keywords: Placenta accreta spectrum, arcuate incision, internal iliac artery ligation, COVID-19

1. Introduction
Placenta accreta spectrum (PAS) disorders have become a significant life-threatening obstetrical issue due to its increased incidence from 0.12 to 0.31% in last 30 years and the reported mortality rate of approximately 7.0% [1]. Pathologically PAS is classified into placenta increta, percreta, and accreta.
Vertical transmission of covid -19 has not been established. As the event of pregnancy represents compromised state of immunity, implication of COVID-19 on the pathophysiology is yet to be understood, along with epidemiological features and prognosis in late-term pregnancy.
Here, we outline case of COVID-19 positive case of central placenta previa with placenta increta diagnosed antenatally.

2. Case report
30 years old G2P1L1 with previous LSCS, registered at 19wks in ANC OPD of SKNMC&GH. Ultrasonographically central placenta previa with placenta increta was diagnosed, LMP being 7/12/19
1st child is alive and well, male; 1year old, emergency preterm LSCS i/v/o placenta previa with APH.
No significant medical history or comorbidity noted &patient was followed up till 36 weeks. At 32 weeks labs repeated, growth scan done, placental position confirmed, steroid coverage given & cesarean section planned at 37 weeks. Patient had no complaints and followed up weekly. At 36+5 weeks, patient came to the hospital with h/o 1day fever. She was investigated for COVID-19 & her RT-PCR for COVID-19 came positive. Her labs were Hb=12.1, TLC=4580(N:L =8), PLT=1.45lac. No cough or breathlessness & maintained saturation. The patient was shifted to isolation in COVID-19 maternity ward, wearing a surgical mask during her stay .Cross matching done for A+ve blood group.
After 3 days patient started c/o pain in abdomen and PV bleeding & passed blood clot of 20cc, immediately she was shifted for emergency cesarean section. Healthcare professionals wore appropriate personal protective equipment (PPE). Patient and relatives were already counselled about diagnosis and potential sequelae. Written informed consent was taken for cesarean hysterectomy. Patient was taken in COVID OT. 2pints PCV and 2pints FFP issued pre operatively and started. To reduce aerosol generation regional anaesthesia preferred, keeping everything ready for general anaesthesia.
Midline vertical infraumbilical incision, abdomen opened- Lower segment had large, tortuous mortal vessels Incision on lower seg would have caused profuse bleeding and thinned

Myometrium would not control it, so decision of caesarean hysterectomy was taken. Gravid uterus exteriorized.

Uterine Incision-Fundal Incision

Arcuate incision given on fundus. Incision was sickle shaped on dome of pregnant uterus equidistant from cornue, 14cm in length. It included cutting of uterine muscle fibres of fundus, with 2-3cm of anterior &posterior uterine wall.

Fig 1: Fundal incision

Baby delivered by breech, immediately isolated. Incision was far away from placenta as well as lower segment. The umbilical cord clamped, ligated, and placed back into the uterus with the placenta. The hysterotomy incision quickly closed in interrupted sutures to reduce bleeding.

Pouch of douglas was obliterated due to placenta so 1st bilateral round and tubo-ovarian ligament transfixed and cut. As space increased, head low was given, uterus was pulled and B/L INTERNAL ILIAC ligation was done, so the vascularity decreased and we were able to dissect post peritoneum up to uterosacral summit.

Finger dissection done at uterovesical fold, few bleeders popped up which were ligated with Vicryl no.1 along with bit of bladder tissue. Bladder was separated, urine was clear.

Uterine artery pedicle was clamped, cut and ligated. Patient was in early labour so cervix was palpable. Thus total OBSTETRIC Hysterectomy was done. Both ureters visualised and protected. Haemostasis achieved. Abdominal drain kept. Specimen sent for histopathological examination.

Total surgical time was less than 100 minutes. Blood loss during surgery was 2 litres and she received total 3PCV and 6FFP during procedure.

Postoperatively patient was shifted to COVID-19 ICU. She was asymptomatic for COVID 19 in postpartum. Patient was given injectable antibiotics for 5 days, LMWH for 7 days & Vit C, also undergone investigations for inflammatory markers which were within normal range. Postoperative period was uneventful. She maintained O2 saturation & her chest x-ray was normal.

The foetus was born weighing 2460 grams. He had APGARs of 7 &9 at one & five minutes. Baby's swab came negative and was immunised as per schedule. Patient's drain was removed on 5th day and suture removal done on 10th day when her repeat COVID test came negative.

Fig 2: Specimen showing placental invasion in myometrium

3. Discussion

The 2016 Nordic Obstetric Surveillance Study found that the risk of invasive placentation increases seven-fold after one prior caesarean section [2].

Increasing trend of placenta accreta spectrum (PAS) is correlated to the increase of caesarean sections and certain risk factors such as the history of placenta previa, advanced maternal age and uterine surgery with mucosal erosion.

Bilateral internal iliac artery ligation before obstetric hysterectomy seemed to be an effective technique to decrease bleeding complications. Delivery of baby by CS should be considered by opening uterus at site distant from placenta, and delivering baby without disturbing placenta in order to enable hysterectomy with minimum blood loss. Classical incision may have injured placenta in upper segment also it may extend to lower segment so INNOVATIVE decision of 14cm vertical fundal incision was taken. Some studies have shown that there is no evidence of intrauterine infection caused by vertical transmission in women who develop COVID-19 in late pregnancies [3].

4. Conclusion

Placenta increta is potential life threatening disease for mother as well as foetus and early diagnosis and timely management can help decrease the complications largely. Fundal incision on uterus largely helps to avoid placenta and decrease obstetric haemorrhage. Hysterectomy continues to be a common procedure for placenta increta. More studies in type of uterine incisions and decreasing the blood loss needs to be taken up. Along with this rising number of COVID-19 cases in pregnancy special care is needed while handling such patients to decrease transmission as well as for safety of mother and child.

5. Consent

Consent was obtained.

6. Conflicts of Interest

The authors declare that they have no conflicts of interest and nothing to disclose.

7. References

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