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Understanding of Abruptio Placentae as Per Ayurveda- A Conceptual Study

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Abstract

To update knowledge on placental abruption. *Apara* is an organ whose one of the function is *garbha poshana,* any abnormalities to the placenta interferes with the *garbha poshana*.. Abruptio placentae is premature separation of normally implanted placenta from the uterus, usually after 20 week of gestation. It can be obstetric emergency. Manifestation may include vaginal bleeding, uterine pain and tenderness, hemorrhagic shock, and disseminated intravascular coagulation. Abruptio placentae may involve any degree of placental separation can be acute or chronic. Seperation results in bleeding into the decidua basalis behind the placenta(retroplacentally). Treatment is modified activity (eg, a woman staying off her feet for most of the day) for mild symptoms and prompt delivery for maternal or fetal instability or a near term pregnancy.

Keywords: Apara, Garbha poshana, Abruptio placentae

Introduction

The *garbha* obtains its *poshana* from *rasa* is supplied by *matru* by the process of *upsneha* and *upsweda*. *Apara* is an organ whose one of the function is *garbha poshana*. The *apara* is attached to the uterine wall and establishes connection between *matru* and *garbha* through *nabhi nadi*. *Nabhi nadi* does the *abhivahana* of *matruja ahara rasa virya* to the *garbha* and thus *garbha* attains *vridhi*. The *ahara* which is taken by *matru* divide into three parts: For *swasharira poshana*, *Stanaya utapatti*, *Apara nirmana*. Hence if mother consumes unwholesome diet it will affect the placenta simultaneously affecting the growth of *garbha.* Hence any abnormalities to the placenta interferes with the *garbha poshana*[1]. One third of all antepartum bleeding is due to Abruptio placenta. Incidence ranging from 0.5 to 1% in 200 deliveries. Abruptio placenta recurs in 5 to 17% of pregnancies after 1 prior episode and up to 25% after 2 prior episodes[2].

Abruptio Placenta

Separation of placenta either partially or totally from the site of uterine implantation after 20 weeks of gestation. It usually occurs in the third trimester of pregnancy. It is characterized by a triad of symptoms: vaginal bleeding, uterine hypertonus, and the fetal distress. Also referred as premature separation of placenta, accidental hemorrhage, ablation placenta, placental abruption[3].

Etiology

- Placental anomaly
- Hypertension, Pre-eclampsia
- Uterine fibroids, uterine rupture, PROM, uterine decompression
- Oligohydramnios
- Chorioamniotis
- Multiparity, poor nutrition
- Blunt external abdominal trauma
- Smoking/ cocaine/ alcohol use
- Short umbilical cord
- Previous third trimester bleeding

Pathogenesis

HAEMORRHAGE INTO THE DECIDUA BASALIS

↓

DECIDUA BASALIS DEGENERATION AND NECROSIS

↓

DECIDUAL HAEMATOMA

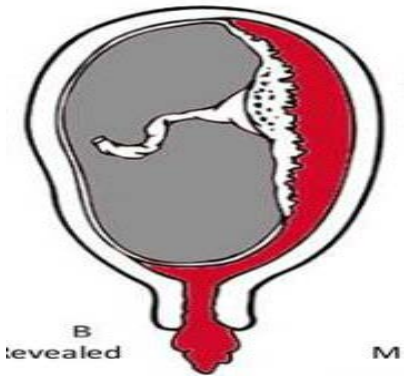
↓

SEPERATION, COMPRESSION, DESTRUCTION OF THE PLACENTA ADJACENT TO IT

Types Of Abruptio Placenta

Revealed

Following separation of placenta the blood insinuates downwards between the membranes and the decidua. Ultimately, the blood comes out of the cervical canal to be visible externally.



Clinical Features

- Abdominal discomfort or pain followed by vaginal bleeding (usually slight)
- Bleeding continuous dark colour (slight to moderate)

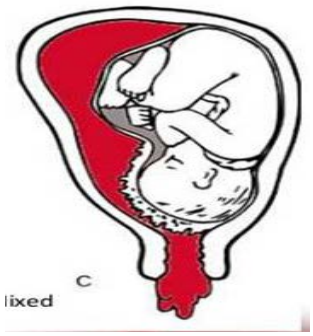
- General condition proportionate to the visible blood loss, shock is usually absent, pallor related to visible blood loss.
- Features of pre-eclampsia may be absent
- Uterine height proportionate to the period of gestation
- Uterine feel is normal with localized tenderness, frequent contractions & local amplitude
- Fetal parts can be identified easily
- FHS usually present, urine output normal

Concealed

The blood collects behind the separated placenta or collected in between the membranes and decidua. The collected blood is presented from coming out of the cervix by the presenting part which presses on the lower segment. At times blood may percolate into the amniotic sac after rupturing the membranes. In any of the circumstances blood is not visible outside.

Mixed

In this type, some part of the blood collects inside (concealed) & a part is expelled out (revealed). Usually one variety predominates over the other. This is quite common.



Clinical Features Of Mixed (Concealed Features Predominate)

- Abdominal acute intense pain followed by slight vaginal bleeding. The pain becomes continuous.
- Bleeding continuous dark colour (usually slight) or blood stained serous discharge.
- General condition shock may be pronounced which is out of proportion to the visible blood loss.
- Pallor is usually severe and out of proportion to the visible bleeding.
- Features of pre-eclampsia frequent association.

- Uterine height may be disproportionately enlarged & globular.
- Uterus is tense, tender & rigid.
- Fetal parts difficult to make out.
- FHS usually absent, urine output usually diminished.

Grading Of Abruptio Placenta

Depending on degree of placental abruption and its clinical effects the cases are graded as follows:

- GRADE 0 : Clinical features may be absent. The diagnosis is made after inspection of placenta following delivery
- GRADE 1(40%) : a) Vaginal bleeding is slight b) Uterus: irritable, tenderness may be minimal or absent c) Maternal BP & fibrinogen levels unaffected d) FHS is good
- GRADE 2(45%) : a) Vaginal bleeding mild to moderate b) Uterine tenderness is always present c) Maternal BP is maintained, pulse↑, fibrinogen level may be↓, d) Shock is absent e) Fetal distress or even fetal death occurs
- GRADE 3(15%) : a) Bleeding is moderate to severe or may be concealed b) Uterine tenderness is marked c) Shock is pronounced d) Fetal death is the rule e) Associated coagulation defect or anuria may complicate

Clinical Assessment

History

- Obtain an obstetric history
- Determine the date of the last menstrual period to calculate the estimated day of delivery and gestational age of the infant
- Inquire about alcohol, tobacco, and drug usage, and any trauma or abuse situations during pregnancy
- Ask the patient to describe the onset of bleeding (the circumstances, amount, and presence of pain.

Physical Examination

- Assess the amount and character of vaginal bleeding; blood is often dark red in color, & the amount may vary, depending on the location of abruption
- Palpate the uterus; patients complain of uterine tenderness and abdominal/back pain
- The fundus is woodlike, and poor resting tone can be noted
- With a mild placental separation, contractions are usually of normal frequency, intensity, and duration
- If the abruption is more severe, strong, eratic contractions occur
- Assess for the signs of concealed haemorrhage: slight or absent vaginal bleeding; an increase in fundal height; a rigid, boardlike abdomen, constant abdominal pain and late declerations or decreased variability of the fetal heart rate
- A vaginal exam should be done until an usg is proformed to rule out placenta praevia.
- Using electronic fetal monitoring, determine the baseline fetal heart rate and presence or absence of accelerations, declerations, and variability
- At times, persistent uterine hypertonus is noted with an elevated baseline resting tone of 20 to 25 mm Hg
- Ask the patient if she feels the fetal movements

- Fetal position & presentation can be assessed by leopold's maneuvers
- Throughout labour, monitor the patient's bleeding, vital signs, color, urine output, level of consciousness, contractions, cervical dilatation
- If placenta previa has been ruled out, perform sterile vaginal exams to determine the progress of labor
- Assess the patient's abdominal girth hourly by placing a tape measure at the level of umblicus & maintain continous fetal monitoring

Investigations

- General and abdominal examination
- Fetal status
- Grade of abruption
- Hb%, haemocrit, coagulation profile
- Abo incompatibility and Rh grouping
- Urine for protien
- USG

IN Revealed

- Blood: Hb%: low value proportionate to the blood loss
- Coagulation profile: usually unchanged
- Urine for protein: may be absent

Mixed (**Concealed Features Predominate**)

- Blood: Hb%: Markedly lower, out of proportion to the visible blood loss
- Coagulation profile: Variable changes:
- Clotting time increased (>6 min)
- Fibrinogen level-low (<150 mg/dl)
- Platelet count low, Increased partial thromboplastin time, FDP & D- dimer
- Urine for protein: present

USG Localization Of Haemorrhage

- **Retroplacental**
- Between the placenta and the myometrium
- **Subchorionic**
- Between the placenta and the membranes
- **Pre-Placental**
- Between the placenta & the amniotic fluid, with in the amnion and chorion

Complications (**Maternal**)

Revealed Type

- Maternal risk is proportionate to the visible blood loss & maternal death is rare

Concealed Type

- Haemorrhage
- Shock
- Blood coagulation disorders
- Oligouria, Anuria
- PPH
- Puerpural sepsis
- Increased maternal death 2-8%

Complications (Fetal)

In Revealed Type

- Fetal death is to extent of 25-30%

In Concealed Type

- Fetal death is high, ranging from 50-100%

Differential Diagnosis

- Placenta Praevia
- Rupture uterus
- Twisted ovarian tumor
- Acute Hydramnios
- Tonic uterine contraction

Prognosis

The prognosis of the mother and the baby depends on the:

- Clinical types
- Degree of placental separation .
- The interval between the separation of placenta and delivery of baby and the efficacy of treatment.
- Bleeding in placental abruption is always almost maternal.
- Fetal bleeding is observed only with traumatic variety of placental abruptio.

Management

Medical Management

- Women hospitalization and careful monitoring for signs of increasing separation

Emergency Measures

- Infusion – crystalloids
- Blood transfusion
- Periodic coagulation profile
- Urine output
- Vital signs & Fetal monitoring(electronic)

Understanding Abruptio Placenta In Ayurveda

There is no direct reference for the abruptio placenta in our classics but some of the refrences pertaining to upavistaka garbha particularly charaka and ashatanga sangraha co relate well with signs & symptoms of abruptio placenta like:

In Upavistaka Garbha

(cha.s.sha.8/26)

- यस्या: पुनरुष्णतीक्ष्णोपयोगाद्गर्भिण्या महति संजातसारे गर्भे पुष्पदर्शनं स्यादन्यो वा योनिस्रावस्तया गर्भो वृद्धिं न प्राप्नोति नि:स्रुतत्वात्, स कालमवतिष्ठतेऽतिमात्रं, तमुपविष्टकमित्याचक्षते केचित् ॥
- After some attainment of sara (after 4th month) by the fetus if bleeding per vaginum or other types of vaginal discharges occur due to the use of pungent and hot articles by the pregnant woman, then the fetus does not grow properly & stays in uterus for longer[4].
- (Ash.s.sha. 4/11,12)

यस्या पुनर्महति जातसारे गर्भे वर्ज्यनामवर्जनात्पुष्पदर्शनं स्यादन्यदवा योनिस्रवणम् । ततो नाड्यां दोषै: कुल्यायामिव तृणपत्रादिभि: प्रतिच्छन्नायां रसस्यासम्यग्वहनाद्गर्भो वृद्धिमनाप्नुवन्नुपविशत्युपशुष्यति वा ॥

- After attainment of *sara* by the fetus if women use contraindicated articles, bleeding per vaginum starts; due to which *vata* gets aggravated; withholding *pitta* and *slesma* compresses the *rasavaha nadi* of the fetus. Due to this obstruction to *rasavaha nadi* causing improper flow of rasa, the fetus does not develop properly.
- Bleeding per vaginum here can be corelated to revealed type of placenta abruption and in concealed type of abruption IUGR is seen.

In Upavistaka Garbha Lakshana's

- तत्र वातेनोपविष्टकोपशुष्कयोर्वायु: प्रतिहन्यते सशब्दं फ़ेनिलं विच्छिन्नं शकृदुपवेश्यते मुत्रमुपरुध्यते कटिपृष्ठहृदयेषु वेदना जृम्भा निद्रानाशोऽभीक्षणं प्रतिश्याय: शुष्ककास: साद: क्ष्वेलेते इव कर्णौ तुद्देते इव शंखौ पिपीलिकाभिरिव संसृज्यते शरीरं परिकृन्तन्निव वायुर्भ्रमति कुक्षौ तम इव प्रवेश्यते दुखेनान्नस्य जरणमहरह: परिहानि: स्फुटितविवर्णपरुषत्वक्त्वं च भवति ॥ (Ash.s.sha. 4/25)

With the predominance of *vata*, this aggravated *vayu* attacks pregnant woman ; due to which she suffers from retention of urine, backache pain in sacral region, cutting pain in abdomen these are some of the *lakshana's* we can see in abruptio placenta also[5].

Lina Garbha

- यस्या: पुनर्वातोपसृष्टस्रोतसि संलीनो गर्भ: प्रसुप्तो न स्पन्दते तं लीनमित्याहु: ॥ (Ash.s.sha. 4/23)

Due to abnormalities of *srotasas* caused by complication of *vayu* the fetus becomes idle or inactive and does not quiver[6].

Management According To Ayurveda

- *Garbhini paricharya*
- *Garbha vyapada chikitsa*
- If abruptio placenta is partial and not the total some of the treatment mentioned under *upavistaka* and *linagarbha* can also be tried like:
- *Vaca ghrita, guggulvadi ghrita* or *ghrita* treated with the *jivaniya, vrmhaniya, madhura* and *vatahara* drugs[7]
- Milk and meat soup ,*Sali* rice
- If the fetus does not develop with above treatment, then it should be induced by the use of pungent and purgative drugs or with the drugs prescribed for expulsion of *apara*[8].
- Agitating activities, frequent riding[9] etc may also initiate induction .

Discussion

The incidence of placental abruption among singlet on pregnancies is usually reported to range from 0.7 to 1%. Although placental abruption is uncommon but it is a serious complication. In normal pregnancy, placental separation occurs immediately after birth, while in pregnancies complicated by abruption due to the prevalence of some risk factors, the placenta begins to detach before birth which contributes to severe maternal complications. Multiple births have been increasing overtime, with multiple fetuses raising the risk for abruption. While abruption often appears to be an acute event, its association with poor fetal growth suggests that the origins of abruption may lie at least in mid pregnancy. The chronic processes underlying abruption may also contribute to the risk of preterm delivery, which accounts for the majority of excess mortality that accompanies abruption. Some of the signs and symptoms that manifests with abruptio placenta can be seen in upavistaka garbha vyapada. Some of the refrences pertaining to upavistaka garbha particularly from charaka, ashatanga sangraha co-relate well with sign and symptoms seen in abruptio placenta. Since abruption is apparently a disease of placenta, aspects of placental development merit attention.Keeping all these things into consideration line of treatment can be planned accordingly.

Conclusion

Placental abruption, is an obstetrical complication that poses several hazard to the pregnant woman and her fetus. Obstetrician must be aware that the patients within case of multiparity, caesarean section, previous abortion, and placental abruption are at increased risk of placental abruption. Early diagnosis, prenatal follow-up, and early management improve the maternal and fetal prognosis. The findings emphasize that better care could be reduce serious complication of the diseases possible.

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