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Management of Placenta Previa During Pregnancy

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ABSTRACT

Placenta previa is an obstetric complication (OS) that traditionally shows painless vaginal bleeding in the third trimester secondary to a strange placentation close or covering the interior cervical OS. Due to the inherent risk of hemorrhage, placenta previa may cause serious morbidity and mortality to both the fetus and the mother. Recently there have been two defined types of placenta previa: complete, and marginal. We here review the complications, incidence, risk factors, and management options of placenta previa.

Keywords: Placenta Previa, Fetus, Cesarean Hysterectomy, Vaginal bleeding.

INTRODUCTION

Placenta previa is an obstetric complication that traditionally shows painless vaginal bleeding in the third trimester secondary to a strange placentation close or covering the interior cervical os. Nevertheless, with the technologic developments in ultrasonography, the determination of placenta previa is ordinarily made previously in pregnancy. Generally, there have been three characterized sorts of placenta previa: complete, partial, and marginal [1]. These definitions have been combined into two definitions: complete and marginal previa. Placenta Previa is characterized as a condition that happens in pregnancy when the placenta anomalous was embedded in the lower uterine segment, partially or completely covering the inner cervical os [2]. Complete placenta previa is the point at which it covers the internal os, partial is the point at which the placenta in part covers the os, and marginal is the point at which the placenta approaches the border of the os [3]. The rising frequency of cesarean segments over the most recent 50 years is incompletely a causative factor to the expanding number of instances of placenta previa [4]. The general pervasiveness of placenta previa announced in the literature is around 4 for each 1000 births. Hazard factors related with an expanded danger of placenta previa were progressed maternal age, past abortion, grand multiparity, history of past C/S, and smoking amid pregnancy [5]. Patients with placenta previa must reduce activity to avoid rebleeding. Furthermore, pelvic examinations and intercourse must be avoided.

In recent years, publications have described the diagnosis and result of placenta previa on the basis of localization, using transvaginal sonography (TVS) when the exact relationship of the placental edge to the internal cervical os may be precisely measured. The expanded prognostic value of TVS diagnosis has rendered the imprecise terminology of the traditional classification obsolete [6].

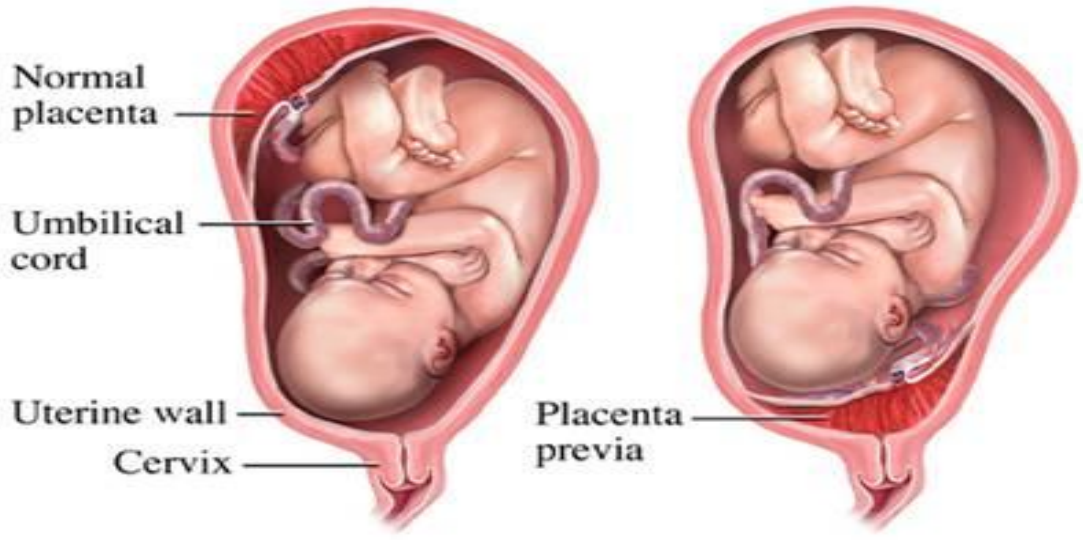

Figure 1. Normal Placenta vs Placenta Previa.

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COMPLICATIONS OF PLACENTA PREVIA

Placenta previa complicates around 0.5% of all pregnancies [7].

Technologic improvements in ultrasonography have expanded the early determination of placenta previa, and a few examinations have demonstrated that a noteworthy segment of these early determinations don't endure until delivery [8, 9]. Actually, 90% of all placentas assigned as "low lying" on an early sonogram are never again introduce on recap examination in the third trimester [10]. Be that as it may, maternal and fetal complications of placenta previa are widely reported. Preterm birth is very delivering?? with placenta previa, with 16.9% of patients delivering at less than 34 weeks and 27.5% delivering in the vicinity of 34 and 37 weeks in a populace based examination from 1989 to 1997 [11].

There is a critical increment in the danger of postpartum hemorrhages and need for emergency hysterectomy in patients with placenta previa 10?? [12]. Complications of placenta previa in the neonate/infant and maternal complications of placenta previa are summarized in table 1.

Table 1: Complications of placenta previa are summarized as follows [13, 14]:

Neonate	Maternal
• Increased risk for infant • Congenital malformations • Low birth weight (< 2500 g) • Jaundice • Abnormal fetal presentation • Neonatal respiratory distress syndrome • Admission to the neonatal intensive care unit (NICU) • Longer hospital stay • Fetal intrauterine growth retardation (IUGR) • Fetal anemia and Rh isoimmunisation • Neonatal mortality rate: As high as 1.2% in the United States [15] • neurodevelopmental dela and sudden infant death syndrome (SIDS) [16]	•Placental abruption •Preterm delivery •Higher rates of blood transfusion •Increased incidence of postpartum endometritis •Hemorrhage, including rebleeding (Planning delivery and control of hemorrhage is critical in cases of placenta previa as well as placenta accreta, increta, and percreta.) •Mortality rate (2-3%); in the US, the maternal mortality rate is 0.03%, the great majority of which is related to uterine bleeding and the complication of disseminated intravascular coagulopathy

RISK FACTORS

The following have been identified as risk factors for placenta previa:

- Previous or recurrent abortions
- Previous uterine surgery, uterine insult or injury
- Non-white ethnicity
- Low socioeconomic status
- Smoking
- Infertility treatment
- Multiparity (5% in grand multiparous patients)
- Multiple gestation
- Short interpregnancy interval
- Previous caesarean delivery [17], including first subsequent pregnancy following a caesarean delivery [18]
- Advancing maternal age (>35 y)
- Previous placenta previa (4-8%)
- Cocaine use

Placental implantation is introduced by the embryo (embryonic plate) adhering in the lower (caudad) uterus. With placental attachment and growth, the improving placenta can cover the cervical os. Though, it is assumed that an imperfect decidual vascularization arises over the cervix, perhaps secondary to inflammatory or atrophic changes. Intrinsically, sections of the placenta having endured atrophic changes could persist as a vasa previa. A primary reason of third-trimester hemorrhage, placenta previa presents classically as painless bleeding. Bleeding is believed to arise in association with the improvement of the lower uterine segment in the third trimester. Placental attachment is interrupted as this area gradually thins in preparation for the onset of labour; this leads to bleeding at the implantation site, as the uterus is incapable to contract sufficiently and stop the flow of blood from the open vessels. Thrombin release from the bleeding sites encourages uterine contractions and leads to a vicious cycle of bleeding–contractions–placental separation–bleeding.

Vaginal bleeding is presumably to arise in the third trimester. In a study of 179 women, 33.7% of women had their first bleeding episode prior to 30 weeks, with 44.6% of women suffering bleeding after 30 weeks. Of all the patients with confirmed placenta previa, only 21.7% did not bleed at any time during their pregnancy [19]. Placenta previa regularly leads to preterm delivery, with 44% of pregnancies with placenta previa delivered before 37 weeks [15].

Management of placenta previa

Continuously expect huge hemorrhage and preterm delivery in a patient with placenta previa. Report satisfactory preparation, including transfer to a larger amount of care, if essential. Diffuse bleeding frequently happens at the implantation site inside the lower uterine section after delivery [20]. As such, learning in the administration of intense and substantial blood misfortune is basic. Actuation of the enormous transfusion convention might be justified relying upon the circumstance. The utilization of uterotonics, including methylergonovine maleate (Methergine), 15 methyl prostaglandin F2 alpha (Hemabate), concentrated oxytocin, or misoprostol are great pharmacological specialists to help settle uterine atony, the primary driver of hemorrhage post-delivery. Different alternatives incorporate surgical administration, as recorded previously. Frequently a mix of medicinal and surgical mediations is used. In occasions where huge bleeding follows, fast substitution of blood items is a need. In such occasions, actuation of the Massive Transfusion Protocol is justified, considering adjustment of a patient's hemodynamic status by the method for fast supply and imbuement of blood products.

Hemostasis can be recognized by one or more of the following:

- Oversewing the placental implantation site
- Bilateral uterine artery ligation (O'Leary stitch)
- Internal iliac artery ligation
- Circular interrupted ligation around the lower uterine segment both above and below the transverse incision
- Packing with gauze or tamponade with the Bakri balloon catheter
- B-lynch stitch
- Cesarean hysterectomy

INDICATIONS FOR HOSPITALIZATION

For a generally uncomplicated pregnancy, proceed expectant management in a patient with placenta previa until the point that a scene of bleeding happens. Studies have not demonstrated any distinction in regards to maternal or fetal morbidity with home administration versus hospitalization before the principal seeps in these patients. Any patient with suspected or known placenta previa and new beginning vaginal bleeding ought to be admitted to the healing center for close observing. It is trying to institutionalize the span of a patient hospitalization given the long winded nature of the dying. Patients ought to be nearly observed for at least 48hours amid a sentinel bleeding scene [16]. With specific patients, after the underlying scene of bleeding has settled and fetal assessment has noted to be consoling, it is suitable to experience eager mgmt. at home. Several examinations have demonstrated this to be a protected approach as long as specific criteria are met. However, it is fitting to proceed with hospitalization in any patient with various scenes of bleeding or with those pts with restricted access to proper therapeutic care if they somehow happened to be released [21]. Occasionally this may bring about hospitalization until delivery.

In the event that bleeding holds on and is overwhelming, planning for prompt surgery is shown. In situations where placental area stays unverifiable, a twofold setup examination—in which one administration group is set up for an uneventful vaginal delivery, and a moment group is set up for a quick cesarean conveyance, as required—might be considered. Order clotting investigations (ie, prothrombin time/actuated incomplete thromboplastin time [PT/aPTT], fibrinogen) if concern emerges for disseminated intravascular coagulation (DIC).

TOCOLYSIS

Tocolytics might be considered in instances of insignificant bleeding and outrageous rashness with a specific end goal to manage antenatal corticosteroids. One investigation seemed to propose that the utilization of tocolytics expands the length of pregnancy and builds the infant's introduction to the world weight without causing unfriendly consequences for the mother and the fetus [22]. However, a survey article by **Bose *et al*.** presumed that there is no change in perinatal result with delayed tocolytics, and tocolysis past 48 hours is not clinically shown. In the event that more than one scene of bleeding happens amid growth (at suitability or >24 wk), the clinician ought to consider hospitalization until conveyance, given the expanded potential for placental abruption and fetal destruction [15].

METHOD OF DELIVERY

By and large, method of delivery is coordinated by the vicinity of the main edge of the placenta in connection to the inner os of the cervix. A few expert associations and past investigations have prescribed elective cesarean delivery when the placenta is less than 2 cm from the inner os. In a review investigation of 121 pregnancies confused by placenta previa, 90% of pregnancies with placental edge-to-cervical os separation of 1-2 cm brought about cesarean conveyances. Another thought is the separation to the inner cervical os and the method of conveyance. Overall, patients with a placental edge to cervical os remove that is more noteworthy than 2

cm from the interior cervical os can be offered a trial of work [23]. However, a later report by **Vergani *et al.*** announced that more than 66% of patients with placenta previa who have a placental edge to cervical os remove more prominent than 1 cm convey vaginally without an expanded danger of bleed [24]. The choice to continue with a trial of work ought to be made on an individualized premise at an inside that gives 24-hour anesthesia, in-house obstetricians, and injury blood transfusion conventions.

Stepwise approach to managing third trimester vaginal bleeding

Patient ought to be evaluated in the work and delivery unit and the attention must be on maternal hemodynamic stability and fetal prosperity. Assessment ought to be started through close perception of maternal fundamental signs and start of electronic fetal observing. Intravenous access is basic and ought to be started the minute the patient is conveyed to the work floor. CBC and T&S ought to be sent to decide Hg level and conceivable requirement for organization of Rh immunoglobulin pending maternal Rh status. On the off chance that huge vaginal bleeding is noted amid assessment, blood ought to be cross coordinated in planning for quick substitution of blood volume. Two to four units of blood might be required rather rapidly, if bleed follows. Start of huge transfusion convention might be suitable if fast access to blood items is vital. Once the patient is esteemed steady and fetal prosperity has been noted, etiology of the vaginal bleeding can be surveyed. Appraisal of the placenta ought to be attempted through ultrasound by either a transabdominal or transperineal approach. Sterile speculum exam should take after to additionally survey the amount and wellspring of the dying. It is basic that an advanced cervical exam is never performed in a patient with concern or ultrasound affirmed placenta previa as this may prompt exuberant bleed because of disturbance of the placenta and its vessels [16].

Expectant management with close observation is shown in circumstances where the fetal gestational age is under 36weeks of gestation on condition that reassuring fetal observing is available and vaginal bleeding has settled or considerably reduced. Management of betamethasone ought to be given if gestational age is under 34weeks. If bleeding is severe or non-reassuring fetal observing is available then emergency cesarean delivery is indicated [20].

SURGICAL APPROACH

There is constrained information to control management and in that capacity ideal planning of delivery is questionable. Be that as it may, in patients with uncomplicated placenta previa, conveyance is prescribed in the late preterm period between 36weeks 0 days to 37weeks 0days of gestation [25]. This accommodates the most minimal conceivable danger of seeping because of work while additionally diminishing the dangers of prematurity for the embryo.

MANAGING BLOOD LOSS

These complex pregnancies should have delivery plans that incorporate patient-coordinated blood and educated assent for conceivable cesarean hysterectomy. Predelivery arrangement of balloon catheters for angiographic embolization of pelvic vessels is a system depicted in decreasing blood misfortune related with cesarean hysterectomy and gives the chance to oversee potential postoperative seeping with embolization as opposed to operative re- exploration [16].

Aortic balloon occlusion prior to cesarean hysterectomy has also been revealed to diminish blood loss [26]. Other means to control hemorrhage include the following:

- Hysterectomy
- Hypogastric artery ligation
- Uterine artery ligation (O'Leary stitch)
- B-Lynch or parallel vertical compression sutures

In the case of a small and focal placenta accreta, resection of the implantation site and primary repair might allow for uterine preservation.

Invasive placentations

On the off chance that the patient is at expanded hazard for intrusive placentation (accreta, increta, or percreta), at that point the patient and surgical group must be set up preceding delivery. These intrusive placentations convey a high death rate (7% with placenta accreta) and a high horribleness rate (blood transfusion, contamination, contiguous organ harm).

Traditionally, uterine atony was the most common cause of cesarean hysterectomy; on the other hand, a meta-analysis by Machado showed that abnormal placentation is the most common cause, occurring in up to 45% of cesarean hysterectomies. [29] Risk for cesarean hysterectomy is increased by the presence of complete placenta previa and a history of cesarean delivery or prior abortion [27].

CONCLUSION

Placenta previa is one of the greatest treatment challenges in current obstetrics. Its occurrence is rising in association with the rising rate of cesarean sections. Prenatal diagnosis of this condition is difficult and so often cannot be confirmed. A multidisciplinary team method and preparation is necessary to manage this challenging condition

which can lead to neonatal and maternal morbidity and mortality. The expectation and planning for preoperative, intraoperative and postoperative management of suspected cases of placenta previa enable logical and timely decision making. Referring to tertiary referral centres where facilities are available for radiological intervention, blood products and cell savers ought to be considered in suspected cases of placenta previa, particularly in patients who refuse blood transfusions. The mainstay of treatment is by caesarean hysterectomy, though in cautiously selected cases, conventional options may be considered.

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