Overview: Placenta previa

Ms. P Sunitha
Lecturer
Obstetrics and Gynecological Nursing
OP Jindal college of nursing, Tornagallu, Karnataka, India.

Abstract - Placenta previa is a significant obstetric complication characterized by the partial or complete coverage of the cervical os by the placenta. It affects approximately 0.3–2% of pregnancies and poses serious risks for both the mother and fetus, including antepartum hemorrhage, preterm birth, and the need for cesarean delivery. This explores the etiology, risk factors, clinical manifestations, diagnostic methods, and management strategies for placenta previa and their complications. Key risk factors include prior cesarean section, multiple pregnancies, advanced maternal age, and smoking. Diagnosis is primarily achieved through Transvaginal ultrasonography, which offers high sensitivity and specificity. Management depends on gestational age, bleeding severity, and placental position, with expectant management or planned cesarean delivery being the main approaches. Ongoing research into preventative strategies and improved imaging techniques continues to enhance the clinical approach to this condition.

Index Terms - Placenta previa, cervical os, cesarean section, risk factors.

I. INTRODUCTION

Postpartum hemorrhage is a major complication of placenta Previa, which causes placenta implant in the lower uterine segment or cervix[1]. It is a major risk factor for postpartum hemorrhage and can lead to morbidity and mortality of the mother and neonate.[2] Almost one-third of maternal deaths worldwide and one-third of those in India involve obstetric bleeding as a direct cause.[3] This situation renders a vaginal delivery unsafe and necessitates a cesarean section delivery for the neonate. During pregnancy, most cases are diagnosed through sonography, and others may come to the emergency room with unexplained vaginal bleeding in the second or third trimester. Placenta Previa is associated with an increase in the risk of placenta accrete spectrum (PAS) for a woman.[4]

II. DEFINITION

When the placenta completely or partially blocks your cervix in the last months of pregnancy, it is known as Placenta Previa. Throughout pregnancy, the placenta grows inside your uterus. The umbilical cord is where the sac-like organ supplies nutrients and oxygen to the fetus.

III. CLASSIFICATION OF PLACENTA PREVIA

There are three types:

1. Partial- The placenta has a partial blockage on the cervix.
2. Complete - The placenta covering the cervix completely.[5]
3. Marginal- The placenta's edge is positioned near the os edge.

Your cervix will thin and open as you get closer to your due date to allow your baby to pass through. The placenta's blood vessels can become damaged if they are too close to the cervix. Heavy bleeding during your third trimester or during labor can be caused by any type of placenta previa.[6]

IV. EPIDEMOLOGY

The prevalence of placenta previa has increased due to the rising rates of cesarean sections, which affects 0.3% to 2% of pregnancies during the third trimester.[7]

V. ETIOLOGY

There is no known cause for placenta Previa. It is obvious that endometrial and endometrial tissue are connected. Damage and scarring of the uterus. Risk factors are advanced maternal age, Multiparty, smoking, cocaine use, prior suctioning and curettage, assisted reproductive technology, and the history of Cesarean sections and previous placenta Previa is linked.[7]

VI. PATHOPHYSIOLOGY:

The embryo adheres to the lower uterus to initiate placental implantation. The cervical opening may be covered by the developing placenta with placental attachment and growth.[8] It is believed that the cervix is affected by defective decidua vascularization, which could be caused by inflammatory or atrophic changes. Thus, parts of the placenta that have undergone atrophic changes may remain as a vasa Previa.

The majority of hemorrhages in the third trimester are caused by placenta previa, which often causes bleeding that is not noticed.[9]

It is believed that bleeding occurs in conjunction with the development of the lower uterine segment in the third trimester.[10] As the region progressively thins in anticipation of labor, placental attachment is disturbed; as a result, the uterus cannot effectively contract and halt the blood flow from the open vessels, causing bleeding at the implantation site. When thrombosis is released from the bleeding sites, it creates a vicious cycle of bleeding, contractions, placental separation, and bleeding again.

VII. CLINICAL MANIFESTATIONS

The following symptoms are frequently associated with placenta previa:

- Bright red vaginal bleeding.
- Spotting.
- Preterm contractions.
- The amount of vaginal bleeding is not always painful and can vary.[11]

VIII. DIAGNOSIS

- Transvaginal Ultrasound Can Be Used To Accurately And Safely Diagnose Placenta Previa.
- The Presence Of Placenta Previa Can Cause Increased Bleeding During Pelvic Examination By Digital Cervical Examination, Which Can Sometimes Lead To Sudden And Massive Bleeding.
- A Pelvic Examination Is Not Advised If Vaginal Bleeding Occurs After 20 Weeks And Ultrasound Has Not Confirmed Placenta Previa.[12]
- Speculum Examination Is A Safe Method Of Examination.

IX. MANAGEMENT

EXPECTANT MANAGEMENT (for patients who are stable and pregnant prematurely)

- **Hospitalization**: If the bleeding is persistent or recurrent.
- **Monitoring**: Placental position, fetal growth, and well-being are evaluated through serial ultrasounds.
- **Corticosteroids**: Betamethasone or dexamethasone before 34 weeks to enhance fetal lung maturity.
- **Tocolytics agents**: May be considered if there are contractions.

ACTIVE MANAGEMENT

- In most cases, it is suggested to go for cesarean section.
- At 36 to 37 weeks, through cesarean section, the patient will undergo elective delivery due to placenta previa.[13]

X. COMPLICATIONS

MATERNAL

- Vaginal bleeding
- Early birth
- Anemia
- Placenta accrete
- Placenta abruption

FETAL

- Premature birth
- RDS
- Low birth weight

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