

Simulations and Drills: Educational Tools

Sample Scenario #2: Placenta Previa

Simulations and Drills

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SCENARIO: a 21 year old gravida 2 para 1100 Caucasian woman presents at 37 weeks estimated gestational age to Labor and Delivery in early labor with the onset of contractions approximately one hour ago. She has had intermittent prenatal care starting at 12 weeks estimated gestational age. Her records indicate she is carrying a singleton pregnancy in the vertex presentation. Her past medical history is uncomplicated, she has no allergies, and she takes no medications other than prenatal vitamins. She admits to smoking less than one-half pack per day of cigarettes. Her prenatal labs are negative and her pregnancy has been uncomplicated except for intermittent spotting in the last six weeks. An external fetal monitor is in place.

Physical examination reveals:

- Normal vital signs
- Uterus: longitudinal fetal lie, vertex presentation
- Cervix: dilatation 2 cm, effacement 10%, station -3, intact membranes

Fetal Monitor Output:

Fetal Heart Rate

- Baseline: 140 beats per minute
- Deviations from baseline: frequent accelerations throughout labor; bradycardia and late decelerations occur late in labor, simultaneously with frank hemorrhage

Fetal Heart Rate Variability

- Short-term: normal initially, demises as vaginal bleeding worsens
- Long-term: normal initially, demises as vaginal bleeding worsens

Maternal Uterine Activity

- Frequency: gradually increases to a rate of one contraction every two minutes
- Duration: gradually increases to 60 seconds
- Intensity: gradually increasing to 100 mm Hg

CASE SUMMARY: Placenta previa is defined as a placenta that develops in the lower uterine segment adjoining or covering the internal os. Three forms have been described.¹ In marginal placenta previa the edge of the placenta is in contact with the margin of the cervical os but does not cover it. Partial placenta previa incompletely covers the cervical os. Total placenta previa completely covers the os. Varying degrees

of bleeding occur during the third trimester as the lower uterine segment matures in preparation for labor.

The incidence of placenta previa is approximately 0.4%. Risk factors include previous cesarean section and tobacco use.^{2,3} The management of a pregnancy complicated by placenta previa is dependent on first recognition of the presence of the abnormally located placenta; this is usually done by ultrasound (digital examination may inadvertently lead to severe hemorrhage). A history of prior cesarean section or total placenta previa likely mandates operative delivery. In patients with marginal or partial placenta previa, as in this case, vaginal delivery may be attempted, provided an emergency cesarean section can be performed should uncontrollable hemorrhage result. The descending fetal head often places pressure on the edge of the placenta and may act to limit bleeding.

In this case fetal bradycardia and late decelerations ensue after frank hemorrhage develops late in labor.

References

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3. Handler A, Mason E, Rosenberg D, Davis F. The relationship between exposure during pregnancy to cigarette smoking and cocaine use and placenta previa. *Am J Obstet Gynecol* 1994;170:884-9.