Placental Abruption

**Definition:**
Separation of a normally implanted placenta prior to the birth of the fetus. Reported incidence varies from 1 in 86 to 1 in 200 births.

**Diagnosis:**
Classic presenting symptoms: (the patient may present with any of all of these depending on severity).
1. Vaginal bleeding (usually dark and non-clotting).
2. Abdominal pain and/or back pain varying from intermittent to severe.
3. Uterine contractions are usually present and may vary from low amplitude/high frequency to hypertonus.
4. Fetal distress or fetal death.
5. Ultrasound may show an adherent retroplacental clot or it may just appear to be a thick placenta. Resolving hematomas become hypoechoic within one week and sonolucent within 2 weeks.

Placental abruption can be graded in its severity according to clinical and laboratory findings:

- **Grade I:** Slight vaginal bleeding and some uterine irritability are usually present. Maternal blood pressure, and fibrinogen levels are unaffected. FHR remains normal.

- **Grade II:** Mild to moderate vaginal bleeding seen; tetanic contractions may be present. Blood pressure usually normal, but tachycardia may be present. May be postural hypotension. Decreased fibrinogen; with levels below 250 mg percent; may be evidence of fetal distress.

- **Grade III:** Bleeding is moderate to severe, but may be concealed. Uterus tetanic and painful. Maternal hypotension usually present. Fetal death has occurred. Fibrinogen levels are less then 150 mg percent with thrombocytopenia and coagulation abnormalities.

**Management:**
In any patient with suspected placental abruption hospitalization should be considered, depending upon the maternal-fetal condition.

Maternal condition should be assessed including vital signs every 15 minutes x 1 hour (blood pressure may be normal range due to an underlying hypertensive disorder).
If there is evidence of maternal hypovolemia 2 large bore intravenous lines should be placed, and blood samples sent for: CBC, platelets, fibrin degradation products, fibrinogen, PT, PTT and RBC morphology for schistocytosis. Consider D-dimers. Clot test for fast results (should clot within 6 minutes and last > 30 minutes).

Urine toxicology should be ordered.

Ultrasound evaluation of fetus to evaluate fetal well-being, age of gestation and position. Scan of placenta to rule out placenta and vasa previa and possibly localize abruption.

**Method and timing of delivery:**
The method and timing of delivery depend on the condition of the fetus, the condition of the mother, and the status of the cervix.

If the fetus is immature and the abruption is mild an expectant approach may be followed. In the absence of fetal distress or maternal complications, a trial of tocolytics treatment may be undertaken if contractions are present. MgSO$_4$ would be agent of choice due to minimal cardiovascular effects.

Delivery should be considered if abruption is Grade II and effected if the abruption is Grade III. If the fetal heart rate tracing is normal and the uterus relaxes well between contractions, an attempt at vaginal delivery may be considered depending on cervical exam and age of gestation. Caution must be used with Pitocin since uterine response may be erratic and the risk of uterine rupture is increased. Maternal stabilization efforts should begin before proceeding to operative delivery.

Amniotomy should be considered, and may help stimulate labor.

A fetal scalp electrode and intra uterine pressure catheter can provide reassurance about the status of the fetus and uterus. A resting tonus higher than 15 mm Hg suggests poor prognosis and early resort to cesarean section is indicated if labor does not progress normally.

An operating room should be held in readiness anticipating an emergency C-section.

If the fetus is dead, vaginal delivery should be attempted to minimize maternal morbidity.

If the fetus is alive but shows definite evidence of distress immediate abdominal delivery should be effected unless contraindicated by the mother’s condition. If DIC is present blood products must be prepared for the OR as indicated below.
Complications and therapy:

1. Hemorrhagic shock
   a. Activate massive transfusion protocol
   b. Restore effective perfusion by restoring effective circulating blood volume
      using fluid therapy as well in excess of apparent blood loss, and blood
      transfusions as soon as available.
   c. Monitor for ischemic necrosis of the kidney with strict hourly I&O’s and
      Foley catheter.
   d. Consider central hemodynamic monitoring if oliguria (< 30 ml/hr) persists
      after volume expansion.

2. Disseminated Intravascular Coagulation (DIC)
   Clinically significant coagulopathy is seen in 10% of cases of abruption, but is much
   more common in severe abruption marked by death of the fetus from massive
   hemorrhage.
   a. Activate massive transfusion protocol

References:
   Gabbe S., Niebyl JR, Simpson JL. Obstetrics: Normal and Problem Pregnancies;
   p.579 Churchill Livingstone

   Blackwell Scientific Publications