Preventing Birth Trauma with Proper Pre-Natal Chiropractic Care

We will be covering the following topics...

- Biomechanical changes of pregnancy
- Preventing the birth trauma with proper pre-natal care.
  - Erb’s palsy
  - Cervical trauma
  - Shoulder dystocia
  - And more

Placental Previa

**Placenta previa**

Normally, the placenta is located in the **upper part** of the uterus.

- However, placenta previa is a condition in which the placenta is attached close to or covering the cervix.
Placental Previa

- Early in pregnancy, the placenta may implant in the lower part of the uterus.
- As the uterus grows, the placenta usually moves up and away from the opening of the uterus (cervix). If it doesn't, the cervix may be **blocked**.
Placental Previa

- This type of placental complication occurs in one in every 200 deliveries and occurs more often in women who have scarring of the uterine wall from previous pregnancies, in women who have fibroids or other abnormalities in the uterus, or in women who have had previous uterine surgeries.

Placental Previa

- Symptoms
  - vaginal bleeding that is bright red
  - NO abdominal tenderness or pain.
- Diagnosis
  - confirmed by performing a physical examination and an ultrasound.
Placenta Previa

- Depending upon the severity of the condition and the stage of pregnancy, modification of activities or bed rest may be ordered.
- The baby usually has to be delivered by cesarean section, to prevent the placenta from detaching early and depriving the baby of oxygen during delivery.

Placental Abruption

- Placental abruption is the separation of the placenta from the uterine lining.
- Usually occurs in the third trimester but can occur any time after the 20th week of pregnancy.
- Only about 1% of all pregnant women will experience placental abruption, and most can be successfully treated depending on what type of separation occurs.

Placental Abruption

- Signs & symptoms of placental abruption
  - Vaginal bleeding (although about 20% of cases will have no bleeding)
  - Uterine tenderness
  - Rapid contractions
  - Abdominal pain
  - Fetal heart rate abnormalities
Placental Abruption

- Any vaginal bleeding in the third trimester should be reported immediately.
Placental Abruption

- The placenta is part of the baby's life support system.
- It transfers oxygen and nutrients to the baby.
- When the placenta separates from the uterine lining before labor it can interrupt the transportation of oxygen and nutrients to the baby.

Placental Abruption

- Placental abruption can only truly be diagnosed after birth, when the placenta can be examined.
- There are a few methods that are used to try to make this diagnosis during pregnancy so that proper treatment can be applied. These include:
  - Ultrasound
  - Evaluation of patient’s symptoms (bleeding, pain)
  - Blood tests
  - Fetal monitoring
Placental Abruption

- Treatment depends
  - on the **severity** of the separation
  - **location** of the separation
  - the **age** of the pregnancy.
  - There can be a **partial** separation or a **complete** (also called a **total**) separation that occurs.

---

Placental Abruption

- **partial separation**,  
  - bed rest and close monitoring may be prescribed if the pregnancy has not reached maturity.
  - In some cases, **transfusions** may be needed.

---

Placental Abruption

- **Total or complete separation**  
  - **delivery** is often the safest course of action.
  - If the fetus is stable, vaginal delivery may be an option.
  - If the fetus is in distress or the mom is experiencing severe **bleeding**, then a cesarean delivery would be necessary.
Placental Abruption

• Unfortunately, there is no treatment that can stop the placenta from detaching and there is no way to reattach it.
• Any type of placental abruption can lead to premature birth and low birth weight.
• In cases where severe placental abruption occurs, approximately 15% will end in fetal death.

Placental Abruption

• The causes of placental abruption are not completely known.
• However, women are more at risk for this condition if they:
  • Smoke
  • Use cocaine during pregnancy
  • Are over the age of 35
  • Have pre-eclampsia or hypertension
  • Are pregnant with twins or triplets
  • Have had a previous placental abruption
  • Experience trauma to the abdomen
  • Have abnormalities in the uterus
Chiropractic and Abruptio

- Hot topic
- Adjustments do not cause abruption
- Twisting and jarring motions can in susceptible women.
- I personally avoid side posture for this reason

Chiropractic and Abruptio

- Omit extreme twists, which may cause placental abruption
  - Practicing Yoga during pregnancy
    [http://www.womenfitness.net/yoga_during_preg1.htm](http://www.womenfitness.net/yoga_during_preg1.htm)

Chiropractic and Abruptio

- Though no studies have been done to document this, there is concern that the rapid stops and jarring forces of rides like (roller coasters) could cause placental abruption.
Abruptio Placenta

- Article

Hip Dysplasias

- Many times hip dysplasias are the result of the fetus remaining in a breech position. There are several different types of hip dysplasias as described below.
Hip Dysplasias

- **Congenital hip dislocation**
  - where the hip is frankly dislocated **at birth**

- **Congenital dislocatable hip**
  - where the hip is in place at birth, but dislocates fully when **stressed**

- **Congenital subluxatable hip**
  - where the hip is in place, but dislocates **partially** when stressed

Hip Dysplasias

- **Acetabular dysplasia**
  - where the hip socket is shallow and remains shallow, so that the hip is **unstable**

- **Developmental dysplasia (or dislocation) of the hip**
  - a more recent term, to reflect the fact that there are cases that have apparently normal hips at birth, but develop the problem in the **first year** of life
Shoulder Dystocia

**Maneuvres to Help Alleviate the Dystocia**
- No one is better than another
- Multiples may be tried in quick succession or together since time is of the essence.

Shoulder Dystocia

**Suprapubic Pressure:** This pressure is at the pubic bone, not at the top of the *uterus*. This might allow the shoulder enough room to move under the pubis symphysis.
Shoulder Dystocia

- **Gaskin Maneuver**: Get the woman into a **hands and knees** position. This will also change the diameters of her pelvis, though is not always possible with epidural anesthesia.

Shoulder Dystocia

- **McRobert's Maneuver**: Flex the mother's legs toward her shoulders as she lays on her back, thus expanding the pelvic outlet. One study showed that this alleviated 42% of all cases of shoulder dystocia.

McRobert's Maneuver

- The addition of suprapubic pressure ... increases success rates to between **54% and 58%**.
- In patients with **diabetes**, however, success rates are not higher.
  - This is most likely due to the fact that infants of mothers with diabetes tend to have higher birth weights than infants of mothers without the disease.
Shoulder Dystocia

- **Woods Maneuver**: This is also known as the *corkscrew*, the attendant tries to turn the shoulder of the baby by placing fingers behind the shoulder and pushing in 180 degrees.

- **Rubin Maneuver**: Like the Woods maneuver, two fingers are placed behind the baby's shoulder, this time they are pushing in the directions of the baby's eyes, to line up the shoulders.

- **Zavanelli Maneuver**: Pushing the baby's head back inside the vagina and doing a cesarean.
  - one of the most dangerous maneuvers
Shoulder Dystocia

- **After the Birth**
  - Things to watch for in baby,
    - A baby that is slow to start and may require assistance with breathing.
    - Fractures of the baby's collar bone (clavicle) or humerus.
  - **Erb's Palsy**
    - Cervical subluxation

- **Shoulder Dystocia**
  - Things to watch for in mom
    - Repairs for episiotomy or tearing done during the birth
    - Maternal hemorrhage.
    - Uterine rupture.

Erb's Palsy

- **Erb's Palsy**
  - Aka Erb-Duchenne Palsy
  - Brachial plexus paralysis
  - Paralysis of the arm caused by injury spinal roots C5-C7
  - The most commonly involved nerve root is C5 (aka Erb's point: the union of C5 & C6 roots).
  - This nerve is the most commonly involved since it is mechanically, the furthest point from the force of traction, therefore, the first and most affected.
Erb’s Palsy

- The most commonly involved nerves are the
  - suprascapular nerve
  - musculocutaneous nerve
  - axillary nerve

Erb’s Palsy

- Babies with Erb’s palsy often have stunted growth in the affected arm. This also involves impaired muscular, nervous and circulatory development.

Fetopelvic Disproportion

- Any clinically significant mismatch between the size or shape of the presenting part of the fetus and the size or shape of the maternal pelvis and soft tissue.
  - A 12-pound fetus trying to squeeze through a maternal pelvis that is only adequate for a 7-pound baby would be an example of fetopelvic disproportion.
Fetopelvic Disproportion

- May be based strictly on size,
- May be related to the way in which the fetus is trying come out.
  - Asynclitic
  - Occiput posterior

Fetopelvic Disproportion

- Occiput anterior position is generally the most favorable for negotiating the diameters and turns of the birth canal.
- Occiput posterior position, it is more difficult for the fetal head to negotiate the turns.
  - Unless the head is small enough and pelvis is big enough, the fetal head will need to be turned to anterior, or a cesarean section performed.

Fetopelvic Disproportion

- If labor is allowed to continue long enough and there is sufficient molding or re-shaping of the fetal head to allow it to squeeze through.
Fetopelvic Disproportion

- In the case of **absolute** disproportion, no amount of fetal head re-shaping will allow for unassisted vaginal delivery, and it may not allow for a vaginal delivery at all.

Fetopelvic Disproportion

- Even in the case of **relative** disproportion, that fact that eventually a fetus might squeeze through doesn't necessarily mean that continued labor is wise.

Fetopelvic Disproportion

- Even if highly accurate measurements of the maternal pelvis and fetal size were possible (and they are not), it would still be difficult to predict in advance those who will deliver vaginally easily and those who will not.
Fetopelvic Disproportion

- All measurements are essentially static, and do not take into account the inherent "stretchiness" of the maternal pelvis or the compressibility of the fetus.
- Similarly, fetal tissues can be safely compressed, to a certain extent.
- Can a basketball fit through a rubber band?

Clinical Pelvimetry

- Two fingers are inserted into the vagina until they reach the sacral promontory. The distance from the sacral promontory to the exterior portion of the symphysis is the diagonal conjugate and should be greater than 11.5 cm.

Fetopelvic Disproportion

- Measure the bony outlet by pressing a closed fist against the perineum. The previously measured diameter of fist is compared to the palpable distance between the ischial tuberosities. Greater than 8 cm bituberous (or bi-ischial, or transverse outlet) is considered normal.
Fetopelvic Disproportion

• Feel the ischial spines for their relative prominence or flatness. Spinal prominence narrows the transverse diameter of the pelvis.

Fetopelvic Disproportion

• **X-ray Pelvimetry**
  
  It was believed in the past that accurate x-ray measurements of the pelvis would allow for identification of those patients who would have disproportion.
  
  – True obstetrical conjugate
  – Transverse diameter of the inlet
  – Bispinous diameter (transverse diameter of the midpelvis).

Fetopelvic Disproportion

• Again, the measurements rarely have any clinical meaning.
• Vaginal delivery may still occur (and usually does) despite small measurements.
• Cesarean section may still be needed even if the internal measurements look acceptable.
Fetopelvic Disproportion

• Estimates of pelvic capacity and shape are only half of the fetopelvic disproportion evaluation.
• The other half is the estimate of **fetal size**.
• Estimates can be made
  – by feeling the mother's abdomen
  – by ultrasound scan estimates

Fetopelvic Disproportion

• Ultrasound estimates of fetal **weight**
• based on formulas that weigh various fetal dimensions (biparietal diameter, abdominal circumference, femur length, etc.), then apply mathematical modeling to come up with an estimated fetal weight.

Fetopelvic Disproportion

• Considered by many to be the most accurate predictor of fetal weight.
  – come within 10% of the actual birthweight two-thirds of the time,
  – within 20% of the actual birthweight in **95%** of cases.
• That means that if ultrasound predicts an average-sized, 7 1/2 pound baby
• 95% of the time the baby will weigh somewhere between **6** pounds and **9** pounds
Fetopelvic Disproportion

- Clinical estimates by an experienced examiner, based on feeling the mother's abdomen, are, in some studies, just as accurate as ultrasound.
- Interestingly, some studies also demonstrate that the mother's guess about her own baby's size is also about as accurate as ultrasound, if she has delivered a baby in the past. If she hasn't, then her estimates are less accurate.

The Caldwell-Moloy classification of pelvises

- This system is widely used to differentiate bony pelvis types.
- There are four classifications that are commonly seen:
  - Gynecoid
  - Android
  - Anthropoid
  - Platypelloid

The Caldwell-Moloy classification of pelvises

- The **Gynecoid** pelvis is the most common and most favorable for a vaginal delivery
  - it allows the largest pelvic opening possible
  - It is considered the normal female pelvis.
The Android Pelvis appears to have **double PI iliums**. When the PSIS moves inferior and posterior on both sides the pelvic opening becomes smaller vertically as compared to the normal gynecoid pelvis.

The pelvic opening is small and the coccyx appears below the pubic bone with a double PI ilium – Android Pelvis.
Anthropoid Pelvis

• Only one PSIS has moved posterior and inferior (PI).
• Many times it will also move externally (EX) narrowing the width of the ala.
• The sacral base has moved inferior and posterior on the PI side.
• The coccyx rotates to the side of the “normal” ilium.

Anthropoid Pelvis

In a PI ilium (Anthropoid Pelvis), the sacral base moves posterior and inferior on the PI side and the coccyx stays on the non-PI side of the pelvis.

Platypelloid pelvis

• The platypelloid pelvis is structurally similar to an IN EX pelvis.
• One ilium is IN (the PSIS has moved internally).
• The other ilium is EX (the PSIS has moved externally).
• There is a smaller pelvic opening between the sacrum and the ilium on the EX side.
• The coccyx normally rotates to the EX side.
In a Platypelloid Pelvis (IN EX) there is a smaller pelvic opening between the sacrum and the ilium on the EX side. The coccyx normally rotates to the EX side.

The Caldwell-Moloy classification of pelvises

• It is not too difficult to imagine that subluxation and misalignment of the pelvic bones can cause an undesirable pelvic opening.

• Using chiropractic adjustments, it's possible to correct these pelvic misalignments thus creating a more normal, gynecoid pelvis.
The Caldwell-Moloy classification of pelvises

- This gynecoid pelvis increases the likelihood of an uncomplicated, vaginal birth by decreasing the incidences of mal-presentations, shoulder dystocias and fetopelvic disproportions.

Sources

- Shoulder Dystocia
  Copyright © 2004-2008 Dr. Henry Lerner
  http://www.shoulderdystociainfo.com
- Gaskin I M, Meenan A L, Hunt P and Ball C A (2001.) 'A New-old Maneuver for the Management of Shoulder Dystocia'
- www.Studentmidwife.net
  http://www.brooksidepress.org/Products/OB3YN_101/MyDocuments4/Text/Ab normalLD/fetopelvic_disproportion.htm