UNIT 8: OSTEOPATHY AND WOMEN’S HEALTH CARE

Educational Topic 63:
Osteopathy in Obstetrics

Intended Learning Outcomes:
The student should be able to:

• Describe how musculoskeletal, postural and biomechanical factors affect fertility
• Identify patients that may benefit from treatment of somatic dysfunction before pregnancy
• Including patients with:
  ▪ Short leg syndrome
  ▪ Chronic pelvic pain
  ▪ Chronic low back pain
• Discuss maternal musculoskeletal/structural changes associated with pregnancy
• Describe how osteopathic manipulation may affect the physiology of pregnancy
• Perform musculoskeletal, postural and biomechanical screening exams throughout prenatal care
• Perform the treatments for common somatic dysfunctions in pregnancy including
  ▪ Round ligament syndrome
  ▪ Pubic shear
  ▪ Carpal tunnel syndrome
  ▪ Low back pain
• Prepare the female pelvis for delivery via OMM in the third trimester
• Discuss the normal and abnormal structural, musculoskeletal, and biomechanical changes of the postpartum period
  including
  ▪ Involution of the uterus and how it affects pelvic structures
  ▪ Persistent low back pain after pregnancy
• Describe the common somatic dysfunctions of the postpartum period and describe their corresponding OMT
  ▪ Symphysis diaphysis
  ▪ Sacroiliac dysfunction
  ▪ Pubic shear
  ▪ Low back pain
  ▪ Breast engorgement and mastitis
  ▪ Postpartum depression

TEACHING CASE

CASE: A 28 year old G1P0 presents to your office for her first prenatal visit at 8w4d from her last menstrual period. She has had some nausea over the past two weeks, and has vomited several times, but not daily. She does complain of low back pain that began about the same time as the nausea but denies cramping, vaginal bleeding, or dysuria. Pt denies any significant medical history and
reports having had a tonsillectomy when asked about surgical history. The only medication she is taking is a prenatal vitamin with DHA. Her BP is 110/68, pulse 78, respirations 16, height 5’3”, and weight is 218lb. Physical exam is benign but noted are large, pendulous breasts without masses/skin changes/nipple discharge and an 8wk uterus with no tenderness or masses palpated in the adnexa. Routine first trimester labs are ordered and the patient is instructed to return in 4 weeks for routine follow up.

Her nausea and vomiting resolve by her next visit and her prenatal care continues uneventfully until her 20wk appointment. She then complains of a sharp left sided pain that occurs mostly when she is rolling over in bed or twisting to get out of a car. Her Level 1 Ultrasound was normal and her vitals remain stable. She denies any contractions, vaginal bleeding, or gush of fluid. She reports that she has started to feel the baby move and this pain is a different entity than fetal movement. The low back pain that she reported at her initial visit is still present, but mild and relieved with rest. You diagnose her acute pain, educate her, and implement a treatment plan.

Prenatal care continues without complication, but the patient does report bilateral tingling and pain in the first three digits of both of her hands at her 32 week visit. She states that by the end of the day, she can barely hold a phone to her ear secondary to the discomfort. When asked about her low back pain, she reports that she “has good and bad days” but Tylenol and massage help. Her BP is 124/70 and her 1hr glucose tolerance test was normal. Plus 2 edema is noted in her bilateral lower extremities. You diagnose her acute pain, educate her, and implement a treatment plan.

At the 36 week visit the patient reports that her back pain has become daily and more intense. Rest, massage, and Tylenol are no longer managing the pain. You fully evaluate her and determine that she has only musculoskeletal causes for her back pain. You perform an Osteopathic structural exam and treat her during her appointment and weekly thereafter.

The patient delivers a female weighing 7lb 9oz via SVD at 38 5/7 weeks. She pushed for 2.5 hours and did have a second degree midline laceration, but otherwise her delivery and postpartum hospital course were unremarkable. She returns to your office 2 weeks later complaining of pelvic pain with numbness that radiates down her outer thighs. She has no fever, foul smelling lochia, or complaints of fundal tenderness or heavy bleeding. You perform a physical exam and treat her somatic dysfunction.

**Competency-Based Discussions & Key Teaching Points:**

Competencies addressed:

- Patient Care
- Medical Knowledge
- Interpersonal and Communication Skills

1. Had this patient presented to you prior to pregnancy, what would you have educated her about and what Osteopathic manipulation treatment plans could you have started to help with her fertility and musculoskeletal complaints?

   - The patient’s BMI is 38.6 which categorizes her as obese – weight loss prior to pregnancy can not only increase her fertility, but also decrease her overall pregnancy risk of things such as pregnancy induced hypertension, gestational diabetes and cesarean section.
   
   - Obesity, particularly central abdominal obesity, commonly leads to many somatic dysfunctions, many of which mimic those of pregnancy. With a protuberant abdomen, there is an anterior shift to the center of gravity, accentuated lumbar lordosis, relocation of the thoracolumbar junction to the lower thoracic spine. As a result, there is a posterior rotation to the innominates, bilateral sacral flexion, extension somatic dysfunctions of the lower thoracic and lumbar vertebral segments and exhalation dysfunction of the lower ribs.

**Key Teaching Point:**

Osteopathic techniques are not meant only for acute pain situations. Chronic dysfunction can stem from medical conditions such as obesity and correction of them can help promote overall health and even fertility.
2. What are some common musculoskeletal/structural changes that occur in pregnancy that may be contributing to the above patient’s back pain?

- Center of gravity shifts anteriorly
- Innominates rotate posteriorly
- Bilateral sacral extension
- Accentuated lumbar lordosis
- Thoracolumbar junction with T8-11 extension somatic dysfunction
- Abdominal viscera displaced superiorly
- Decreased thoraco-abdominal diaphragmatic excursion
- Lower Ribs exhaled

3. How can OMM help with some of the normal physiologic changes of pregnancy that the patient is experiencing?

- Increase in breast volume can put additional strain on the upper thoracic spine and musculature – directed myofascial and muscle energy therapies to this region can relieve pain and discomfort.
- Increase in total body water leads to edema – myofascial release techniques to remove restriction at various diaphragms (thoracoabdominal, pelvic, popliteal fossa), followed by a sequential course of lymphatic techniques to help mobilize fluid out of the interstitium.
- Increase in relaxin – this allows for excess motion beyond the normal physiologic barriers of motion. Excess motion can, over time, lead to chronic instability. While OMT is not aimed at lowering relaxin levels, it does act to help to prevent and treat dysfunctions that involve excess motion beyond the physiologic barrier, particularly in vertebral segments. Muscle energy, articulatory, facilitated positional release and direct myofascial release can help maintain proper alignment to prevent excess motion.
- Decrease in diaphragmatic motion – a growing uterus and fetus causes superior displacement of the intraabdominal organs. As a result, this will limit diaphragmatic excursion. Treatment of the thoracic rib cage using muscle energy techniques, as well as guided motion of the thoracoabdominal diaphragm using balanced ligamentous tension and myofascial release techniques.
- Numbness in the lateral thigh – a growing uterus with a developing fetus creates congestion in the pelvis. This can cause an impingement of the lateral femoral cutaneous nerve as it passes inferior to the inguinal ligament at its attachment near the ASIS. Directed muscle energy or articulatory techniques of the innominates and pubic bones can help alleviate some of the congestion. Lymphatic techniques can also help alleviate some congestion.
- It is important to remember that these techniques are targeted at a very sensitive region of the female anatomy. Manipulation should therefore not be taken lightly. It is of the utmost importance that, regardless of area being treated or technique being performed, that the patient feel she is comfortable, secure, safe and being treated with respect and dignity. Consider having a chaperone present for the structural examination and treatment techniques that are to be performed on the pregnant patient.

**Key Teaching Point:**
It is imperative to understand the physiologic and structural changes that are a part of the antenatal period in order to discern what is normal and what is pathologic.

4. What are the underlying causes of the patient’s acute pain syndromes and how would you diagnose and treat them using Osteopathic techniques?
• Round Ligament pain – as the uterus enlarges during pregnancy and the abdomen becomes more protuberant, excess pressure and strain can be placed on the ligaments supporting the uterus, especially the round ligament. Muscle energy techniques directed at treating the innominates and pubic bones can help alleviate the pain. Myofascial techniques (direct or indirect) overlying the uterus and pelvis can also help.

• Carpal Tunnel Syndrome – as the total body volume of fluid increases during pregnancy, the balance of oncotic and hydrostatic forces will drive fluid from the vasculature into the interstitium. This excess volume, when in an enclosed space, can cause an entrapment of the structures in the area. In the case of carpal tunnel, the median nerve is impinged between the carpal bones and the flexor retinaculum. Directed muscle energy, articulatory, and high velocity low amplitude techniques can correct dysfunction of the carpal bones while myofascial release techniques can help stretch the retinaculum. Together, these techniques will help optimize the space in the carpal tunnel. Additionally, lymphatic drainage techniques can help mobilize extra fluid out of the carpal tunnel so that there is less pressure applied to the median nerve.

• Lower Back Pain – low back pain during pregnancy arises from a number of factors. First, as the uterus and fetus grow, the abdomen becomes more protuberant and the center of gravity shifts anteriorly, causing posterior rotations of the innominates and bilateral sacral base extension. This can be addressed with directed muscle energy techniques, articulatory techniques and, in the case of the sacrum, respiratory-guided balanced ligamentous tension techniques. This will allow for better motion of the pelvic bones and sacrum during ambulation and respiration. Pain can also arise from an accentuated lumbar lordosis, causing multilevel extension somatic dysfunctions of the lumbar and lower thoracic vertebral segments. These can be addressed by muscle energy, articulatory and myofascial release techniques. Soft tissue techniques to the lower thoracic and lumbar paraspinal musculature can also help alleviate some lower back pain by relaxing hypertonic muscles.

• OMT can also be used in preparation for the process of labor. Regular treatments during pregnancy can help decrease labor times, reduce the incidence of cesarean sections and decrease postpartum pain.

5. Describe the common somatic dysfunctions that occur in the post-partum period and propose OMT techniques to alleviate them.

• Post-partum patients suffer from some of the same dysfunctions as pregnant patients. Symphysis diaphysis results when the two innominate bones dislocate anteriorly without fracture, which can happen during the childbirth process. OMT can be useful in keeping the innominates aligned and allowing the cartilaginous symphysis pubis to heal correctly.

• Sacroiliac dysfunctions are a common finding in the postpartum period, especially following vaginal deliveries. These can be responsible for unilateral lower back/gluteal pain, but are easily addressed with some muscle energy, respiratory guided articulatory, myofascial release and balanced ligamentous tension techniques

• Pubic shears are another pelvic dysfunction that arises during pregnancy but can remain present after delivery. Like innominate dysfunctions, these can be treated with directed muscle energy.

• Lower back pain, a common complaint during pregnancy, can linger into the postpartum period as some of the biomechanical changes of pregnancy begin to revert to their antepartum state, and some of the extraneous forces are no longer present. Addressing dysfunctions of the innominates, pubic bones, sacrum, lumbar and thoracic vertebral segments with a combination of techniques will help to alleviate some of the complaints of low back pain that persist following delivery.

Key Teaching Point:
Osteopathic manipulative therapy is very useful in both the pregnant and post-partum patient. There are many common somatic dysfunctions that arise from pregnancy and parturition that can be quickly alleviated without the use of medications, expensive equipment, and time-consuming physical therapy.

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REFERENCES


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