Musculoskeletal (MSK) complaints, particularly low back pain, during pregnancy are very common. The frequency has been reported at ranges of 24% to 90% for different population samples. Of the women experiencing low back pain during pregnancy, as many as 50% reported having radiating pain down one leg. Due to the variable clinical presentations of pregnancy related back pain, a multifaceted etiology can be expected. The main three etiological aspects to consider are MSK, hormonal, and vascular. During the typical nine month pregnancy, hormones are constantly changing with an increase in estrogen, progesterone, cortisol and relaxin. Relaxin is the most clinically significant hormone in MSK complaints as it increases joint laxity throughout the body.

The MSK component is aggravated by the change in center of gravity that occurs during pregnancy, causing an increased lumbar lordosis and additional stress to the low back region. The vascular component can be attributed to the growth of the gravid uterus putting pressure on the abdominal aorta and inferior vena cava, disturbing blood flow to and from the lower extremities. Special considerations must be made when rendering care to a pregnant patient and knowledge of possible complications is imperative for a chiropractor.

Abstract

Objective: To review and discuss a case of an atypical presentation of deep vein thrombosis (DVT) in pregnancy.

Clinical Features: A 38-year-old multi-gravid female was referred by her OBGYN to a chiropractic office for management of radicular leg pain imitating sciatic neuropathy.

Intervention and Outcomes: The patient presented with progressively worsening pain of two days duration. The pain began in her right hip and traveled down the back of the right leg into the plantar aspect of the foot. The leg pain was severe enough to limit ambulation. It was worse with coughing and moving and relieved with rest. Physical exam revealed a positive Homan’s sign. She was immediately transported to a vascular diagnostics center which revealed the presence of a mixed age thrombosis that extended from the common femoral vein into the calf veins. This diagnosis resulted in direct hospitalization for treatment of the life threatening condition.

Conclusions: Many serious conditions may mimic common musculoskeletal problems. This case highlights an uncommon cause of radiating leg pain in pregnancy which practitioners must be aware of.

Key Words: Pregnancy; chiropractic; Deep Vein Thrombosis; venous thrombosis; thrombophlebitis
When determining the etiology of pregnancy related back pain, all differential diagnoses must be considered. Differential diagnostic considerations include but are not limited to sciatica, piriformis syndrome, posterior facet syndrome, sacroiliitis, disc herniation, meralgia paresthetica, spondylolysthesis, uterine contractions, thrombosis, coccodynia, spontaneous abortion, pyelonephritis, hydronephrosis, renal calculi, and metastatic cancer.\textsuperscript{13-15} This paper discusses a patient presenting with a chief complaint of radiating leg pain.

Case Report

History & Examination

A 38 year old multigravid female was referred by her OBGYN to a chiropractic office for management of “sciatic pain” which began two days earlier. The patient described a radiating pain that began at the top of the posterior hip on the right side which traveled down her posterior right leg to the plantar aspect of the foot. She reported currently experiencing right leg pain which was so severe she could not bear full weight on the limb. The patient reported that the pain was relieved when she rested with her leg “propped up.”

The current pregnancy had no reported complications. Her first child was 7 years old at the time of examination. She reported that the possible etiology of this pain might be from an injury to the right ankle, when she “twisted” it approximately one month previously. Orthopedic evaluation of the patient resulted in a negative Straight Leg Raiser, Braggard’s Tests, Well Leg Raise, and Becterew’s Test. Kems and Valsalva’s Test was also negative.

Severe pain was reproduced with a soleus muscle stretch. The pain was reported as an 8/10 on a pain scale of 0 to 10 with 10 being the most severe pain. Homan’s Sign was mildly positive on the right. Observation of the leg did not show any signs of redness or swelling. There was no heat difference between the right and left leg noted. However, the right calf was tighter compared to the left. The patient was immediately transported to a local vascular diagnostic center to rule out thrombosis.

The diagnostic procedure utilized was venous duplex imaging, using the 7.5 MHz Doppler ultrasound unit the femoral, popliteal, tibial, and saphenous veins of both lower extremities were interrogated. Longitudinal and transverse views were used in all veins examined. Respiratory variation was normal at the left common femoral, left superficial femoral, and left popliteal veins and responses to augmentation and compression maneuvers were normal.

Right lower extremity demonstrated mixed echogenic intraluminal thrombus. The diagnosis made by the interpreting physician of the ultrasound was a mixed aged thrombus of the right lower extremity, including possible acute deep vein thrombosis from the common femoral vein into the calf veins. Upon diagnosis the patient was immediately admitted into the hospital for emergency intervention. The patient went on to have a successful delivery without complications at 40 weeks gestation.

Discussion

Epidemiology

Deep vein thrombosis of the lower extremities occurs in 0.13 to 0.61 per 1000 pregnancies.\textsuperscript{19} Although this condition may seem relatively rare, the result of a deep vein thrombosis can be deadly. According to Koonin et al, pulmonary embolism from thrombosis is the second leading cause of pregnancy-related deaths in the United States at 19.9%.\textsuperscript{20}

Studies have shown that thrombosis can occur equally during all trimesters of pregnancy.\textsuperscript{21} The physiological changes that happen during pregnancy increase the risk for developing a DVT. A pregnant female is five times more likely to develop a DVT than a non-pregnant female of the same age.\textsuperscript{22}

Pathophysiology and Risk Factors

Virchow categorized the risk factors for developing venous thrombosis into three components – blood hypercoagulation, hemostasis and endothelial injury.\textsuperscript{23} Common risk factors for the development of DVT include but are not limited to pregnancy, instrument-assisted or cesarean delivery, hemorrhage, multiparity, advanced maternal age, inherited blood coagulation disorders, nephritic syndrome, cancer, venous stasis, advancing age, estrogen therapy, immobilization (prolonged bed rest or travel), stroke, obesity, previous thrombosis, recent trauma and recent surgery.\textsuperscript{24}

Signs and Symptoms

The physiological and mechanical adaptations occurring during pregnancy may often mimic signs and symptoms of DVT, such as shortness of breath, swelling in the lower extremities, aching legs and feet, low back pain and radiating pain in the posterior leg. Most DVT occur in the lower extremity and more commonly found in the left leg during pregnancy.\textsuperscript{25,26} When a thrombosis completely blocks venous blood flow it often results in venous congestion, edema and cyanosis of the affected area.

Typically, the patient with a DVT will present with fever and dyspnea, along with severe pain, warmth, distended veins and swelling in the affected area, however, a DVT can also present with a silent or abnormal presentation.\textsuperscript{27,28} Due to the complex nature of this condition, a diagnosis of DVT cannot be made without advanced imaging. The most commonly used diagnostic tool is doppler ultrasound.\textsuperscript{29}

Due to the complications of DVT treatment during pregnancy, a definitive diagnosis is required before treatment begins.\textsuperscript{30} Venography, which is a sensitive and accurate gold standard test, is often used when other less invasive tests are negative and the clinical indication of DVT is high.\textsuperscript{31} Management of DVT usually involves anticoagulant therapy which puts mother and fetus at risk for future hemorrhagic problems.\textsuperscript{32,33}

Conclusion

In pregnancy, the body undergoes many physiological and anatomical changes, which often results in musculoskeletal complaints. When providing chiropractic care to the pregnant patient, it is important to consider potential comorbidities such as DVT.
patient, special precautions must be taken by the chiropractor to ensure safety for the mother and developing fetus. The etiology of these musculoskeletal complaints must first be defined before initiating care. It is important for the chiropractor to remember that a patient may present with concurrent conditions and emergency situations must first be ruled out. This unusual case shows the importance of clinical diligence when evaluating and caring for pregnant patients.

References