EPISODE 17 - PREGNANCY RELATED LOWER BACK PAIN

WORKSHEET

1. The Case

Sarah is 40-years-old and pregnant with her second child. She is currently 30 weeks gestation and began to suffer lower back pain around the middle of her first trimester. She described a deep aching pain around the sacroiliac region bilaterally that refers further into the gluteal area. This can also involve pain in either posterior thigh at various times. Sarah's pain has gradually worsened over the past 4 to 6 weeks, to the point that she finds it difficult to roll over in bed and get out of a chair without sharp stabbing pain. She denied any radiating pain below the knee, nor neurological symptoms such as numbness or paraesthesia. However, over the past few weeks she has been troubled at night by aching in the calves and mild cramping. Sarah denied any recent abdominal pain, bleeding, pain on urination or fever. She has a history of lower back pain that radiates into the right buttock and thigh, which was successfully treated last year and she also suffered pain around the right sacroiliac region during her first pregnancy.

2. Clinical Challenges

1. What non-musculoskeletal conditions should you think about excluding with Sarah?

2. What does the clinical information available so far tell you about how likely Sarah is to respond well to treatment and how likely she is to suffer ongoing pain postpartum?

3. What clinical tests would yield the most important information for diagnosing Sarah's pelvic girdle pain?

4. Sarah asks about a pelvic support belt. How would you advise her?

Learning Objectives

1. **Review the hormonal and biomechanical changes of pregnancy in relation to the tendency for musculoskeletal pain and dysfunction**
2. **Differentially diagnose lumbopelvic pain related to pregnancy**
3. **Skilfully assess the pregnant woman with lumbopelvic pain**
4. **Make evidence-based recommendations regarding the management of pregnancy-related lumbopelvic pain**
5. **Effectively communicate your management of the pregnant woman to her family doctor and obstetrician**

3. Clinical Clarity

A 3-Question Decision Rule:

1. Are the symptoms that Sarah is presenting with suggestive of a non-musculoskeletal cause? In other words, do they raise suspicion regarding a visceral disorder, or serious or potentially life threatening condition?

2. From where is the Sarah's pain arising? What structures are involved and what is the mechanism driving it?

3. What global factors could be making Sarah vulnerable to a pain experience developing and persisting?

Excluding Non-Musculoskeletal Causes

Distinguishing Between Lower Back Pain and Pelvic Girdle Pain Associated With Pregnancy

Lower back pain and pelvic girdle pain associated with pregnancy are considered to be two distinct entities, and have been subcategorised further to aid management.

Five patterns of pelvic girdle pain are recognised:

1. Anterior distribution only at the symphysis pubis (best prognosis)

2. Posterior distribution only involving pain over both SI joints

3. Unilateral posterior distribution involving pain over one SI joint

4. Full pelvic girdle syndrome with pain anteriorly and over both SI joints posteriorly

5. Miscellaneous - whereby pain location varies constantly between the 3 locations

Musculoskeletal Changes Associated With Pregnancy

1. Ligamentous laxity

   - Relaxin hormone - peaks between 10 and 12 weeks gestation and remains constant until birth. But is relaxin it directly related to pelvic girdle pain?

The Beighton Scale for joint hypermobility - 5 screening movements

- Abduct thumb to the forearm
- Place palms flat on the floor with knees straight
- Extend 5th fingers beyond 90 degrees
- Hyperextend elbows greater than 10 degrees
- Hyperextend knees greater than 10 degrees

Featured Articles

Van Benten, E., Pool, J., Mens, J., & Pool-Goudzwaard, A. (2014). Recommendations for Physical Therapists on the Treatment of Lumbopelvic Pain During Pregnancy: A Systematic Review. The Journal of Orthopaedic and Sports Physical Therapy, 44(7), 464–A15.

Aldabe, D., Ribeiro, D. C., Milosavljevic, S., & Dawn Bussey, M. (2012). Pregnancy-related pelvic girdle pain and its relationship with relaxin levels during pregnancy: a systematic review. European Spine Journal, 21(9), 1769–1776. doi:10.1007/s00586-012-2162-x

Al-Sayegh, N. A., George, S. E., Boninger, M. L., Rogers, J. C., Whitney, S. L., & Delitto, A. (2010). Spinal Mobilization of Postpartum Low Back and Pelvic Girdle Pain: An Evidence-Based Clinical Rule for Predicting Responders and Nonresponders. PM & R, 2(11), 995–1005.

Damen, L., Buyruk, H. M., Güler-Uysal, F., Lotgering, F. K., Snijders, C. J., & Stam, H. J. (2002). The prognostic value of asymmetric laxity of the sacroiliac joints in pregnancy-related pelvic pain. Spine, 27(24), 2820–2824.

Gutke, A., Kjellby-Wendt, G., & Oberg, B. (2010). The inter-rater reliability of a standardised classification system for pregnancy-related lumbopelvic pain. Man Ther, 15(1), 13–18. doi:10.1016/j.math.2009.05.005

Jung, H.-S., Jeon, H.-S., Oh, D.-W., & Kwon, O.-Y. (2013). Effect of the pelvic compression belt on the hip extensor activation patterns of sacroiliac joint pain patients during one-leg standing: a pilot study. Man Ther, 18(2), 143–148. doi:10.1016/j.math.2012.09.003

Kanakaris, N. K., Roberts, C. S., & Giannoudis, P. V. (2011). Pregnancy-related pelvic girdle pain: an update. BMC Medicine, 9(1), 15. doi: 10.1186/1741-7015-9-15

Kovacs, F. M., Garcia, E., Royuela, A., González, L., & Abraira, V. (2012). Prevalence and Factors Associated With Low Back Pain and Pelvic Girdle Pain During Pregnancy. Spine, 37(17), 1516–1533.

Murphy, D. R., Hurwitz, E. L., & McGovern, E. E. (2009). Outcome of pregnancy-related lumbopelvic pain treated according to a diagnosis-based decision rule: a prospective observational cohort study. Journal of Manipulative and Physiological Therapeutics, 32(8), 616–624.

Key principles of sacroiliac joint stability:

- Form closure is a produce of bony architecture and passive structures such as the interosseous ligaments
- Force closure is a produce of muscular stabilisation

2. Hyperlordosis

- 20% weight gain has been reported to increase loading on the posterior joints by 100%

3. Soft tissue oedema

- Nerve entrapment syndromes become more prevalent during pregnancy - the most common ones are meralgia paraesthetica and carpal tunnel syndrome

Differentiating Between Disc, Facet and Sacroiliac Pain Sources

- Pain distribution
- Any sign of antalgia?
- Any signs of neural tension or raised intrathecal pressure?
- Any neurological signs - reflexes, power sensation?

Key Parts of the Clinical Examination

- Palpation for tenderness - long dorsal sacroiliac ligament
- PSIS symmetry test
- PSIS seated flexion test
- Posterior Pelvic Pain Provocation Test (P4)
- FABER test
- Active Straight Leg Raise (without and with assisted pelvic stabilisation)

Featured Articles

Stefan Malmqvist DC, M., MSChir, I. K., DC, K. A., MD, I. Ø., PhD, K. B., & PhD, J. P. L. M. (2012). Prevalence of Low Back and Pelvic Pain During Pregnancy in a Norwegian Population. Journal of Manipulative and Physiological Therapeutics, 35(4), 272–278.

Van Benten, E., Pool, J., Mens, J., & Pool-Goudzwaard, A. (2014). Recommendations for Physical Therapists on the Treatment of Lumbopelvic Pain During Pregnancy: A Systematic Review. The Journal of Orthopaedic and Sports Physical Therapy, 44(7), 464–A15.

Vermani, E., Mittal, R., & Weeks, A. (2010). Pelvic girdle pain and low back pain in pregnancy: a review. Pain Practice : the Official Journal of World Institute of Pain, 10(1), 60–71. doi: 10.1111/j.1533-2500.2009.00327.x

Vøllestad, N. K., Torjesen, P. A., & Robinson, H. S. (2012). Association between the serum levels of relaxin and responses to the active straight leg raise test in pregnancy. Manual Therapy, 17(3), 225–230.

Wu, W. H., Meijer, O. G., Uegaki, K., Mens, J. M. A., van Dieën, J. H., Wuisman, P. I. J. M., & Östgaard, H. C. (2004). Pregnancy-related pelvic girdle pain (PPP), I: Terminology, clinical presentation, and prevalence. European Spine Journal, 13(7), 575–589.

de Groot, M., Pool-Goudzwaard, A. L., Spoor, C. W., & Snijders, C. J. (2008). The active straight leg raising test (ASLR) in pregnant women: differences in muscle activity and force between patients and healthy subjects. Manual Therapy, 13(1), 68–74. doi:10.1016/j.math.2006.08.006

Thinking Point

How do you think manual treatment would improve an unstable sacroiliac joint?

Management Considerations

Exercise recommendations?

Do material supports (such as pelvic belts) work?

How could we predict the likelihood of success of manual treatment based upon the clinical features?

An evidence-based clinical rule has been published in Physical Medicine and Rehabilitation

Features predictive of successful outcome:

- Pain not extending below the knee
- Negative PSIS symmetry test in sitting position
- Positive seated flexion test
- Positive prone knee bend test

Features predictive of an unsuccessful outcome:

- Age of 35 years or more
- Best pain score of greater than 3/10 in preceding 24 hours
- Negative prone knee bend test

4. Professional Communication

Sarah has been troubled by increasing levels of pelvic girdle pain and muscular irritability that began during the first trimester of her pregnancy. While there are clearly mechanical factors at play, the question of a hormonal contribution to pregnancy-related pelvic pain has always lingered. Interestingly, researchers have been unable to establish a direct link between relaxin levels and pain vulnerability from pelvic instability. As such, it now seems more likely that gestational pain is the result of other aspects of musculoskeletal deficiency. Indeed, it is probable that pregnancy serves to highlight pre-existing functional impairments in muscular stabilisation. With this in mind there are often clear avenues of treatment that can provide reasonable relief to patients such as Sarah. A gentle manual approach is considered to be both safe and effective, particularly when combined with ergonomic advice and appropriate exercise. I have discussed all of the above with Sarah and she was keen to pursue a short trial.

Take the Online Quiz

Now complete the online quiz to test your knowledge and reasoning.