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Case Report

Management of a Case with Postpartum Pelvic Floor Muscle Dysfunction through Different Clinical Reasoning Process

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ABSTRACT

Background: In today's world, back pain is commonplace, especially during and after pregnancy. Numerous factors can contribute to these symptoms. Women are more vulnerable to postpartum pelvic floor dysfunctions following vaginal delivery due to changes in bone structure and ligamentous laxity. These dysfunctions can cause excruciating discomfort. The bladder, uterus, and colon are supported by the muscles, ligaments, and tissues that make up the pelvic floor. The pelvic floor is the passageway for the openings in each organ. These organs are supported by the pelvic floor, which functions as a hammock. Nevertheless, a variety of issues may occur if the muscles are weak or if the ligaments and tissues are torn or stretched.

Aim: The paper's aim is to incorporate the Clinical Reasoning Cycle into the Management of a case with postpartum pelvic floor muscle dysfunction

Methods: A solitary case study utilizing the clinical reasoning method. The purpose of this study was to explore the management strategies of a postpartum low back pain with pelvic floor dysfunction through clinical reasoning process. It has performed through knowledge, cognition and meta cognition.

Results: At first Hypothetico Deductive reasoning was used but at last three track reasoning helped me to solve the condition.

Conclusion: This paper presents a case study in managing a case with postpartum pelvic floor muscle dysfunction through different clinical reasoning process. In this study there is a discussion of patient-centered, and evidence-based care provisions through a theoretical examination to manage postpartum pelvic floor muscle dysfunction and it will be helpful for the novice and expert physiotherapy professionals.

Keywords: Pain status; Kegel exercise; Family situation

Introduction

In primary care, low back pain is a highly prevalent painful condition. Generally speaking, 60% of patient's experience recurrences of this pain, which affects 80% of people at least once in their lifetime. In 85% of cases, the disorder's symptoms are unrelated to any specific neurological or etiological causes, and it appears that 23% of patients have chronic conditions and experience pain that lasts longer than 12 weeks[1].

The physical, emotional, and social health of a woman undergoes numerous changes after giving birth. Laxity of muscles and ligaments is brought on by elevated sex hormone levels, preparing a woman's body for childbearing and child growth. Certain physical tasks and movements become challenging and uncomfortable due to this laxity. Pregnancy brings about significant hormonal and social origin changes that last into the postnatal phase[2].

Pelvic pain may worsen during pregnancy, but lumbar pain is typically stable during this time. Back pain poses a serious concern for one-third of pregnant women, and pelvic pain symptoms impede most daily activities. The cause of low birth pressure during pregnancy is still largely unknown. Despite inconsistent findings, some pathophysiological mechanisms have been explained[3].

It is common to experience low back pain (LBP) both during and after pregnancy. The majority of studies indicate that the condition affects at least half of pregnant women. (Schoultz, Svardsudd, & Kristiansson, 1996). It has been reported that 5% to 40% of patients experience persistent lower back pain six months after giving birth[4].

The location and timing of the worst pain have been linked to pregnancy-related low back pain (LBP). Pregnancy-related and non-pregnancy-related LBP have different characteristics. One third of pregnant women report experiencing severe LBP at some point during their pregnancy, compared to 23.6% of the general population who experience severe LBP. Back pain is most common in the second and early third trimesters of pregnancy[5].

Pregnancy-related low back pain is a highly common syndrome whose etiology is unknown. It is distinguished by symptoms like back and pelvic pain and disability during pregnancy and the postpartum period. According to studies done on expectant mothers between 1980 and 1990, 78% of them reported having low back pain at some point during their pregnancies, which is more than half of them. As the pregnancy goes on, the pain gets worse and gets in the way of everyday tasks like carrying, wiping down furniture, sitting, and walking. Eventually, the woman has to miss work due to this pain. It can occasionally also interfere with sleep. However, the consequences of it include joint and tendon damage, increased dysfunction, and disability[6]. It is not regarded as a serious health issue. Many expectant mothers view back pain as a typical aspect of pregnancy and believe it will go away on its own after giving birth; as a result, they rarely seek medical attention[7]. According to reports, between 30 and 45 percent of women have low back pain during the postpartum phase[8]. Rehabilitation services support the full physical, mental, social, and intellectual independence of disabled individuals and guarantee their participation in all facets of life[9]. While clinical knowledge is derived from the experience and practice of clinicians, biomedical knowledge is derived from various theories. The process of critical thinking used to synthesize, analyze, and interpret data collected by clinicians from patients or participants, documentation, observations, etc., and apply it to already-existing knowledge is known as cognition[10].

Literature Review

The processes of reasoning and judgment connected to professional practice Because it is cognitive, interactive, largely unobservable, occasionally automatic and subconscious, multifactorial, and context-dependent, clinical reasoning is a complex phenomenon. Decisions made by clinicians are prone to error if they lack specific knowledge of their field of work, which is why clinical reasoning in clinical practice is specific to one's area of work[11].

A fundamental skill for medical practice is clinical reasoning, which is necessary for making diagnoses and managing patients in a secure and effective manner. The cognitive procedures used by clinicians to identify and treat patients' medical issues are referred to as clinical reasoning (CR). It is defined as a "distinctive, multifarious, and exceedingly intricate ability, distinguished by various methods that access particular information stored in long-term memory. "The Range of strategies that clinicians use to generate, test, and verify diagnoses, to assess the benefits and risks of tests and treatments, and to judge the prognostic significance of these cognitive achievements". Clinical reasoning, according to Jones, is an ongoing process that continues throughout the ongoing intervention[12]. The process of clinical reasoning is contingent upon an individual's disposition towards critical thinking[13] and is shaped by their preconceptions, attitude, and philosophical perspective. Clinical reasoning can be thought of as a sequence or spiral of connected, ongoing clinical encounters rather than a linear process. Among these are the Rehabilitation Problem Solving (RPS) model for clinical reasoning, three track reasoning, narrative reasoning, pattern recognition, inductive, deductive, and hypothetico-deductive reasoning, as well as the International Classification of Functioning, Disability, and Health (ICF). But in our clinical practice, we sometimes use these reasoning processes separately and sometimes in combination to arrive at the hypothesis[14].

Hypothetico Deductive reasoning is a type of cue acquisition in which related clinical information is recognized. The creation of hypotheses was a crucial step in the problem-solving process after cue acquisition[15]. The ability of a clinician to weigh the interpretation of various clinical findings is known as clinical reasoning. In one of the clinical reasoning processes, there are three tracks of reasoning: procedural, interactive, and conditional. These tracks are used to diagnose and guarantee appropriate rehabilitation services based on the needs of the patient and the patient's family. The process of reasoning becomes clearer through examination and interpretation[16].

Case Presentation

Two months after giving birth, a 32-year-old woman with low back and back pain was referred to our clinic. She was gone through normal vaginal delivery. During the time of assessment I found her painful lower back, pain was 8 out of 10 on the verbal numeric scale. Patient reported marked difficulty lifting her child. Every morning she would wake up with significant pain but no numbness or tingling like sensation. The patient reported that the pain started one month before delivery and gradually worsened in the postpartum period. Patient self-prescribed analgesics. Using clinical reasoning for diagnosis, as a novice practitioner, I am not familiar with this type of cases. I listen patient complains carefully and develop a possible hypothesis. Jones (1992) stated that novice as well as expert practitioner would like to go through some steps while they were dealing with unfamiliar cases. Hypothetico deductive reasoning was the term used for this process.

Cue acquisition

Generally cue acquisition in terms of patient management means collecting as much possible sources in order to make a

precise assessment for patients, In fact, cue acquisition means the initial information-gathering stage during the process of clinical reasoning. My patient pain was just only along with the side of injury.

I asked my patient -

1. Which activities of your back provocative pain? Patient said any type of activity.
2. Where is the location of pain or referred pain? Patient said pain occurs in the lower back and thigh.
3. What are the site of pain? Patient said Back of the pain and thigh area.
4. How did pain started? Patient said suddenly onset and gradually increased.
5. What are the aggravating factors of pain? Movement, any activity.

Red flag and Yellow flag-Examiner was asking about vertigo, Radiculopathy, TB spine, Uterus tumorsudden weight loss, Height loss, fever but she does not have anything. Yellow flag was back and thigh pain, activity loss.

The objective assessment (clinical testing) aims to validate or disprove hypotheses generated by the subjective assessment. Posture and gait: Adorable posture, Spinal percussion or palpation: not important Walk on all fours, squat, and stand up. Test for straight leg raising: 80 degrees in both Rt and Lf Tests for motor, sensory, and reflexes are intact.

Hypothesis generation

After cue acquisition of my case therefore little confusion for confirm diagnosis so I have gauzes some other possibilities, this is known as hypothesis generation and these are the as follows may be Postpartum low back pain, PLID, Listhesis.

Cue interpretation

Hypothesis generation was proceeded by cue interpretation[17]. Reported three points scales for cues interpretation. Such as (**Table 1**).

+1 Cue confirms hypothesis

-1 Cue disconfirms hypothesis

0 Cue doesn't contribute to hypothesis evaluation

Table 1: Cue Interpretation

Cues	Post partum low back pain	PLID	Listhesis
Location o f Pain	Lower back and thigh	Pain radiates to right lower limb	Low back pain & radiating to right lower limb
Onset of pain	After delivery	Gradual onset	Gradual onset
ROM	Painful & Restricted all movement	Burning and deep pain in all movements	Painful and restricted
Special Test	Posterior pain provocation test: Negative	SLR test: Negative	SLR test and X-Ray: Negative
Interpretation	+ 1	-1	0

That patient might develop postpartum low back pain. After three session of treatment the pain was not subsided, so there was a bit confusion to me. Again I asked some question and she told that felt that she need to have several bowel movements during a short period of time, could not complete a bowel movement, constipation or straining pain with bowel movements, a frequent need to urinate, painful urination. Then I confirmed her pelvic floor dysfunction and reffered her to a gynocologist she came back to me with diagnosed Pelvic floor dysfunction, MRIs and x-rays were normal (**Table 2**).

Then I was gone through another some special tests, Active straight leg raise test-Positive, Posterior pelvic pain provocation test-Positive, Long dorsal sacroiliac ligament test -Positive, Hip abduction and adduction strength tests-Negative, Quebec Back Pain Disability Scale (QBPDS) - Score was high. During this assessment, pelvic floor muscle strength, endurance, responsiveness, co-ordination, ability to effectively relax, presence of myofascial trigger points, scar tissue or tension in the muscle were some elements investigated to determine the overall health of the muscle.

Table 2: Clinical Reasoning.

Procedural Reasoning	Problem identification-Goal setting-Intervention planning Pain and pressure on vagina area, Painful urination, muscle spasm and feeling of heaviness in pelvic area
Interactive Reasoning	Talk to the patient again and understand the problem from patient view
Conditional Reasoning	Use lumbar corset and use two pillow during feeding the baby

Possible Problem List

Pain and pressure in the vagina, painful urination, cramping in the muscles, and a sensation of weightlessness in the pelvic region. Exercises for the pelvic floor muscles and relaxation methods, information on nutrition, biomechanics, and toileting patterns, soft tissue massage, manual therapy methods, acupuncture, neuromuscular nerve stimulation, and computerized EMG biofeedback were all included in the physiotherapy treatment plan. According to Ryan, physical therapists can also teach moms how to have a bowel movement without straining their pelvic floor muscles or assist them in performing daily tasks in a way that doesn't strain their abdominal muscles. A physical therapist can assess the abdominal wall and pelvic floor muscles to ascertain what has changed during pregnancy, labor, and delivery, as well as assist in identifying impairments in the tissues, muscles, nerves and joints.

Following diagnosis, women receive a customized program to promote muscle healing, enhance bowel, bladder and sexual function and enhance overall pelvic stability, enabling them to perform daily tasks like picking up their infants, according to Prendergast.

Narrative Reasoning

Narrative reasoning is a central mode of clinical reasoning in Physiotherapy. Therapist's reason narrative when they are concerned with disability as an illness experience, that is, with how a physiological condition is affecting a person's life. Therapist creates as well as tell stories. The narrative nature of clinical reasoning manifests itself not only in the work therapists do to understand the effect of a disability in the life story of a particular patient, but also in the therapist's need to structure therapy in anarrative way, as an unfolding story.

Neuromuscular electrical stimulation and biofeedback therapy in the early postpartum period could obviously improve pelvic floor electrical physiological indexes, and is beneficial to prevent the pelvic floor dysfunction[18]. Strengthening exercises: Strengthening exercises, also known as Kegels, involves squeezing and relaxing the pelvic floor muscles, these exercises may improve the symptoms of prolapse. Biofeedback is a non-invasive method that monitors the pelvic floor muscles as the patient tries to contract or relax them using specialized sensors and video. Techniques for relaxation: Encourage methods of relaxation like yoga, meditation and warm baths. Relieving or reducing symptoms is the aim of treatment for pelvic pain syndromes. Sometimes a mix of therapeutic approaches is helpful in easing pain. Dietary adjustments to facilitate easier bowel movements, such as increasing fiber and fluid intake. Outcome Measurement Tools was- Verbal Numerical Scale for pain measurement, Quebec BackPain Disability Scale (QBPDS), Manual Muscle Testing.

Findings & Discussions

I did a thorough assessment of her spine. The neurological assessment is arguably the most significant component of this examination. This entails assessing leg reflexes, muscle strength, and sensation. This is crucial because the results of these tests will reveal whether or not there is any appreciable pressure on any of the low back nerves that supply the muscles, skin, and tissues in the legs. When a person has spinal pain, it is crucial to always perform a neurological assessment, especially if the pain radiates into a limb. We can decide whether additional testing, such as an MRI scan, is required based on the results of this and other tests.

In this case, the neurological examination demonstrated no abnormalities thus indicating that the pain shooting down her leg was not due to compression of a nerve. Additional examination components revealed that one of the nerves was temporarily or mildly compressed, which is common in cases of acute low back pain.

Crucially, when I looked at how she bent down and lifted and assessed her control of movement from the spine, there were obvious problems. Her core muscles were weak and therefore were unable to protect and control the movements of her spine when her activity levels increased.

After analyzing the decisionmaking process, it was identified that it was very difficult to be strict in a single reasoning process. In earliest moment I went through the hypothetico deductive reasoning process after observing the sign, symptoms and cues. After three session of treatment the pain was not subsided, so there was a bit confusion to me.

Many of the physical changes that can cause low back pain during pregnancy may contribute to an achy back now. For example, during pregnancy the expanding uterus stretched and weakened the abdominal muscles and altered the posture, putting strain on back. Extra weight during (and after) pregnancy not only means more work for the muscles, but also increased stress on the joints. Plus, hormonal changes can loosen the joints and ligaments. Unfortunately, all these changes don't necessarily go away as soon as give birth. Pregnancy could potentially be a separate risk factor for PFD development. Pelvic floor dysfunction (PFD) is a general term used to describe conditions that compromise the female continence mechanism (urinary and fecal) and (or) pelvic organ support. Both the epidemiology and pathogenesis of PFn are still poorly understood, although recent work has provided several new insights and suggested opportunities for further research. While trauma to pelvic floor structures during childbirth remains central in discussions regarding the etiology of PFD, other possible factors, including genetics and aging, may also be involved. The exact mechanisms by which racial background influences the prevalence of PFD are not known.

Low back and pelvic pain are common during pregnancy and the postpartum period. Understanding the possible side effects of these treatments can help with early diagnosis, precise treatment, reduced morbidity, and improved chances of a positive result. Also, while giving birth it may have used muscles you don't normally use, so one could feel those effects for some time, especially if it had a long or difficult labor.

The postpartum phase is also influenced by other factors. When nursing, many new mothers unintentionally aggravate their back issues by adopting poor posture. When a person is first learning how to breastfeed, they might hunch over in an attempt to get the baby to latch on correctly, which puts strain on their neck and upper back muscles as they look down. Furthermore, recovering from all postpartum aches and pains, including back pain, can be more difficult due to the general exhaustion and stress of caring for a newborn around-the-clock.

Then I thought that three track reasoning might be suitable for this case because in three track there is interactive, procedural and conditional reasoning. Compiling all of which can help to solve this case. According to consider this case I went through the threetrack reasoning as because, its procedural part is similar to the hypothetico - deductive reasoning which meets a problem with several explanations according to the observation.

We have attempted to demonstrate how the diagnosis and reasoning process can be ascertained from the fundamental idea underlying the reasoning process. Nevertheless, theory and observation have allowed it to function. Additionally, I demonstrated how to apply common sense reasoning to the reasoning process. Nonetheless, it is a component of the three-track clinical reasoning procedure. However, in order to decide on the treatment and the hypothesis, I have also included the patient's family.

Limitations

The study should be considered in light of the following limitations

- The finding of the study was not generalized to the wider population.
- Physiotherapy unit for maternal care is not available in many hospitals in Bangladesh.
- Few researchers had done before on this topic area. So, there was little evidence to support the result of the study.
- As it was a new topic area so it was difficult to collect appropriate information about the topic area especially on the perspective of Bangladesh.
- As she was a newly mom so it was difficult for her to attend the physiotherapy session.She missed some session.

Recommendations

If problems are not treated, they may eventually result in pelvic organ prolapse, a condition in which the bladder,

uterus, or other organs descend into the vagina, low back pain, hip problems, problems with urgency, frequency, burning, constipation, anal pain and infection according to Prendergast.

LBP among pregnant women is likely to be an upcoming burden for Bangladesh, like other countries. for this reason, it is important to develop research based evidence of physiotherapy practice in this area. Physiotherapist's practice which is evidence based in all aspect of health care. Presently, lots of hospitals working on disability are included the services of physiotherapy. But physiotherapy for pregnancy induced LBP is newly introduced in Bangladesh. Developing evidence-based conclusions regarding the prevalence of LBP in expectant mothers is essential. This study can be considered as a ground work for the physiotherapy service provision for the pregnant women with LBP. Proper physiotherapy can reduce pregnancy related LBP and prevents postpartum complications. There are few studies on obstetrics area. These cannot cover all aspect of the vast area. So, it is recommended that the next generation of physiotherapy members continue study regarding this area, this may involve-use of large sample size and participants form different districts of Bangladesh. Conduct research on other maternal health problems where physiotherapist can work. Like common musculoskeletal problems among pregnant women, prevalence of LBP after cesarean section, effectiveness of physiotherapy for the pregnancy induced LBP, prevalence of urinary incontinence ante partum and postpartum period, common physiotherapeutic intervention to reduce the complications of pregnant women are some areas of further studies for future researchers. The Government should aware the people about physiotherapy in obstetrical area, and create post in government hospitals and community hospital. So, that the people can get the physiotherapy service. The NGOs should take proper initiative to promote physiotherapy services for the pregnancy induced LBP.

Conclusions

Many conditions fall under the umbrella of pelvic floor dysfunction, such as chronic pelvic pain and bladder and bowel dysfunction (urinary stress and urge incontinence, fecal incontinence, constipation, and incomplete bowel and bladder emptying). By enhancing pelvic floor muscle awareness and control, physical therapy can help manage symptoms of pelvic floor dysfunction.

Physical therapy may also include exercises for strength, balance and flexibility as they relate to pelvic floor dysfunction. Therapists work with each patient to optimize results for her specific set of symptoms.

By altering their behavior, patients can better control their pelvic floor symptoms. This can include urge and stress suppression techniques, timed voiding and controlled fluid intake, as well as advice on regular exercise, sleep, and nutrition.

Exercises for the pelvic floor muscles are essential during pregnancy. Any muscles that aren't used regularly tend to get slack and weak, and your pelvic floor is no different. A strong pelvic floor can help the process of natural birth and reduce the postpartum low back pain.

The relationship between the therapist and patient is import ant to achieving successful outcomes. Effective documentation will aid the exchange of information and delivery of efficient care. Baker et al. found that therapist seek to involve their p atients in establishing goals and determining outcomes, but do not maximize the existing potential for this involvement. This finding would seem true in this case study, because the patient lack of involvement in establishing goals and a limited understanding of the patient's total needs may have delayed the patient's return to home and hindered the transition of care to another therapist.

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