Connection of hip pain and bladder function in postpartum woman

Introduction

A 27 year old woman presented with stress urinary incontinence, both hip pain (R>L), and right shoulder pain. Client is 7 weeks postpartum. Client had a quick birth within 30 min at home in January, 2022. Client was seen during her pregnancy from 37 weeks to 41 weeks. Client had a baby at 41 weeks. Client had 2 children prior to this birth. Client is an OB nurse and is on maternity leave at this time. Client is breast feeding her baby on demand.

CLIENT CHARACTERISTICS

The client had 3 natural births (9 year old, 3 year old, a newborn) with min to no tearing. The client had % pubic symphysis pain since her second pregnancy. The client also have % urinary incontinence with running after her second pregnancy. The client stated she pinched her ulnar nerve from the arm positioning while breastfeeding after her second child leading to ulnar nerve dysfunction. The symptoms have resolved now. The client had % pelvic pain, hip pain (L>R), and stress urinary incontinence with transfers, coughing, laughing during her third pregnancy and she was referred for Physical Therapy.

The client is a runner and she wanted to be able to run without % pain and urinary incontinence. The client stated she always struggled with breathing while running since she was in her teens.

The current complaints of client are both hip pain (R>L), right knee pain, right shoulder pain, urinary incontinence with sitting/standing/transfer/picking her baby, lifting, carrying, squatting, coughing/sneezing, and she has difficulty with functional activities. The client had c/o pain and pinching in right shoulder while trying to raise her arm overhead. The client c/o both hip and right knee pain with standing, sit to stand transfer, walking, and stairs. The client also have % pain with sexual intercourse with a deep peentration.

EXAMINATION FINDING

PAIN
Pain scale for both hip pain- 6/10 mostly dull ache
Right shoulder 6/10 mostly dull ache with intermittent % sharp pain/pinching with reaching overhead

POSTURE
Increased rib cage angle wide:100, rib flare present
Increased arch at thoracolumbar junction. The client presented with forward head, right shoulder elevated/protracted and slightly internally rotated. The client stands with hips shifted forward.

BREATHING MECHANICS
Decreased lateral and posterior expansion of ribs, upper back tightness present

ROM

Right shoulder flexion: 0-150
Abduction: 0-140
External rotation: 0-50
Internal rotation: 0-70
Cervical spine retraction: major loss, extension: major loss
Rotation to right: 0-70
Rotation to left:0-80

Thoracic spine Rotation to right: mod loss
Rotation to left: min loss
Extension: major loss

Right hip flexion: 0-80 Left hip flexion: 0-80
Abduction: 0-40 abduction: 0-40
ER: 0-40 ER: 0-40
Pain and tightness present at the end range of motion of both hips.

Right knee flexion: 130 extension: 0

MUSCLE STRENGTH

Right shoulder flexion: 3+/5
Abduction: 3/5
ER: 3+/5
IR: 3+/5

Right hip flexion: 3+/5 Left hip flexion: 3+/5
Abduction: 3+/5 abduction: 3+/5
Extension: ⅗ extension: 3/5
ER: ⅗ ER: ⅗

Right knee flexion: ⅘ left knee flexion: ⅘
Extension: ⅘ extension: ⅘

Pelvic floor muscle strength

On internal examination- client is able to contract and lift pelvic floor but not able to hold it and have difficulty with eccentric lengthening. Client presented with poor coordination of diaphragm and pelvic floor.

BALANCE/PROPRIOCEPTION:

U/L stance test: Patient presented with poor load transfer while standing on one leg.
The client was able to stand for 2 second hold on the right leg without assistance with poor proximal stability. The client was able to stand for 5-6 second hold on the left leg without assistance with poor proximal stability.
PALPATION:

External palpation:
Tightness present on both psoas/right hip adductor/quadratus lumborum, hamstring. The abdominal fascial mobility is limited (R>L), fascia around the cecum tightness present, bladder fascia mobility is limited on right, right OI (Obturator internus) fascia tightness present. Left sacrospinous ligament tightness present, gluteus fascia and fascia around sacrum is tight on left side. Uracher ligament mobility is also limited on the right.

Internal palpation:

Tenderness and tightness present on both OI and levator ani, urethra mobility is limited on the right.

Based on the assessment, the treatment was focused on

1) Myofascial release of abdominal fascia/visceral mobilization of bladder fascia/uracher ligament and OI foramen fascia
2) Rib cage/thoracic spine mobility
3) Hip joint/Sacroiliac joint mobility on both sides to improve symmetry
4) Breathing mechanics
5) Strengthening of hip/core/pelvic floor/diaphragm
6) proprioception/balance exercise to improve stability during the load transfer

TREATMENT

The client's goals were to be able to do functional activities such as sitting/standing/walking/transfers/picking her baby without pain/leak and with improved strength/stability/and breathing mechanics. The client also wants to be able to run without leak.

The goals we created together

1) Improve rib mobility/thoracic spine mobility to improve breathing mechanics and diaphragm/pelvic floor coordination to improve function of pelvic floor
2) Improve abdominal fascia/sacral fascia, and bladder fascial mobility to improve both hip mobility/stability to provide the stable base for pelvic floor
3) Improve concentric and eccentric strength of hip/pelvic muscles to improve control
4) Improve balance/proprioception to improve load transfer while running

Client was seen 1x/week for 6 weeks initially with focus on

1) Bladder fascia mobilization,uracher ligament release, pubovesical ligament release and OI release along with hip movements. Anatomically the bladder is connected to the obturator foramen through fascia, so bladder fascia is connected to OI fascia. OI is the hip muscle which rotates the hip externally. OI shares the fascia with the pelvic floor. Uracher ligament starts from the umbilicus (3 heads 2 medial and 1 median) and attaches to the bladder. Any deviation in abdominal muscle tone can affect the position of umbilicus, so the position of uracher ligament which can affect the bladder positioning and so hip and pelvic floor muscle function. Pubovesical ligament is between the pubic symphysis and bladder and any change in the ligament length or function can affect the pubic symphysis alignment and function of the pelvis and also the hip.

2) Myofascial release of abdominal fascia, ribcage fascia, parasternal fascia/right hip adductors/left hip gluteal fascia/fascia around the sacrum/sacrospinous ligament, U.T./SCM/scapular muscle. Internal pelvic floor muscle release was performed 4 times with focus on bladder fascia release with OI muscle/levator ani release on both sides with breathing.

3) Mobility exercises – cat cow, cobra-spine extension, side lying thoracic rotation, hip mobility – flexion/abduction/ER. Foam rolling of gluteus fascia, upper back for HEP.

4) Breathing mechanics using the foam roller (MELT rebalance which helps a lot with lateral and posterior expansion), and in child's pose which also help to improve posterior and lateral expansion.

5) Strengthening exercise with focus on hip muscles- seated hip adduction with ball, hamstring curl with theraband, side lying hip abduction, side lying reverse clam (helps with eccentric lengthening of OI), quadruped bridge, quadruped hip extension, supine tuck and tilt, and standing hip flexion.

During the course of the first 6 weeks, the client declined any right shoulder and hip pain/knee pain, improved right shoulder and hip mobility, improved pelvic alignment, improved breathing mechanics, improved rib cage/thoracic spine mobility, and improved muscle strength. The client declined any urinary incontinence with regular functional

activities such as sit to stand, picking her baby up, or lifting a laundry basket. The client still struggled with urinary incontinence with running or jumping.

Based on further evaluation for running and high activity, the client was not moving her left shoulder while running, it was locked on the side. That was affecting the left shoulder and right hip cross chain muscles (anterior and posterior chain muscle) while walking, running, going up and down stairs. Anterior chain muscles consist of obliques on left side and right hip adductors and posterior chain muscle consists of latissimus dorsi on left side and right gluteus maximus muscle. Now with her history of right OI tightness causing hip to slide forward in the socket causing psoas overactivity, gluteus maximus firing can be compromised. That can impact the posterior chain muscle work. Also if the rib flare can affect the oblique muscle work, which can affect the hip adductors on the opposite side affecting the anterior chain muscle work. Hip adductors are fascially connected to the pelvic floor and help with lifting the pelvic floor up. Also the attachment of the hip adductor on pubic symphysis connects it to the bladder fascia via pubovesical ligament. Any change in the tone of hip adductors can affect the alignment of pubic symphysis and function of the bladder (urgency is more related here). The client was seen for 12 more weeks with focus on anterior and posterior chain muscle work, eccentric muscle work, diaphragm strengthening with balloon, and balance training. The client was able to run/jump without leak.

SUMMARY

The whole body is connected through fascia. Fascia connects the muscles to muscles, muscles to organs. During pregnancy, the position of the fetus causes the organs to move on side or up. For example, the small intestine moves up, the bladder moves on the side. The movement of the organ along with weight of the fetus can affect the mobility of the fascia around the organs and muscles during the postpartum period. The postural changes during pregnancy can also affect the muscles and myofascial chain function. The breathing mechanics can also be affected by the position of the fetus and rib mobility. Now once the baby is born, the muscles and organs get confused in the body, they try to come back as much as possible. As every human is different, some women might have tightness of abdominal fascia/fascia around the viscera based on her postural changes before and during the pregnancy, childbirth position, stress levels, breathing mechanics, and even strength level. The bladder fascia is connected to the umbilicus via uracher ligament, hip muscles via OI foramen fascia, and pelvic floor. Many women with idiopathic hip bursitis, gluteus medius tear, hip enthesopathy during the first 2 years postpartum period have some connection with bladder fascia restrictions. They have some urinary urgency/frequency or incontinence symptoms going on, which they just blame it on childbirth or joke on social media how they cross their legs while sneezing/coughing or use the pads while jumping on a trampoline. These women tried to find answers, what did they do to hurt their hips? Or just minor activity aggravated pain. They cannot connect the bladder fascia restrictions to the contribution of the hip condition. Many of them go through a series of physical therapy without any relief if the bladder fascia is not addressed. They end up getting hip injections with some temporary relief and eventually accept that pain is common or I have h/o chronic hip pain. As much as hip mobility and strength are important for pelvic floor muscle

function, bladder fascia mobility/pelvic floor length is equally important for hip function.