Hyperinflation

Initial Visit

Subjective:
Patient is a 46 year old female who presents to physical therapy with upper back, chest and neck pain. She also reports episodes of lightheadedness and shortness of breath which leads to feelings of anxiety. These symptoms only seem to occur when in a seated position, especially in a car or at her desk. The patient reports her onset of symptoms occurred a little over a month ago while driving. She ended up going to the emergency room and was cleared for all heart related conditions.

Past Medical History:
Patient reports no significant past medical history. She has received physical therapy from other health care professionals but has had no success.

Objective:

	Left	Right
Adduction Drop Test	+	+
SLR	90°	100°
FA IR	33°	38°
FA ER	47°	42°
Hruska Adduction Lift Test	3/5	2/5
Apical Expansion with Contralateral Opposition	Limited	Limited
Horizontal Abduction	10°	10°
Shoulder Flexion	160°	160°
HG IR	45°	10°

Assessment:
Patient demonstrates a PEC pattern with an underlying Left AIC pattern and is experiencing shortness of breath and lightheadedness secondary to lack of a zone of apposition (ZOA). The patient's inability to establish a ZOA has led her to become an active scalene breather, resulting in neck pain. This position is a result of compensating for an initial Left AIC pattern. The key to early treatment is achieving pelvic neutrality because the anteriorly tilted pelvis is contributing to the extension through her back and consequently the excessive lordotic posture.

Treatment:
1. *Right Sidelying Adductor Pull Back (2nd Edition CD: Left Adduction – Sidelying #2)*
    - Emphasis was placed on "shifting the femur into the socket" during inhalation phase to help activate the left adductor.

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2. *Left Sidelying Right Glute Max (2nd Edition CD: Right Gluteus Maximus – Sidelying #3)*
    - Emphasis was placed on stabilizing the pelvis by pushing the left foot into the wall followed by keeping the right knee shifted forward while rotating the right leg into FA ER to activate the right glute max.

3. *90-90 Hip Lift with Hemibridge (2nd Edition CD: Repositioning - Supine #1)*
    - Emphasis was placed on keeping the back flat on the table while performing a posterior pelvic tilt. Also, it is of key importance to dig the heels down, not push the feet into the wall. This helps to engage the left hamstring, especially when the right foot is off the wall.

4. *90-90 Hip Lift with Balloon (2nd Edition CD: Repositioning – Supine #1)*
    - Emphasis was placed on activating the left leaflet of the diaphragm to pull the left ribs down and promote right apical expansion.

5. *Wall Short Seated Reach (2nd Edition CD: Integration – Short Seated #1)*
    - Emphasis was placed on trunk flexion to keep the ribs down and increase posterior mediastinal flexion.

Second Visit (2 weeks later)

Subjective:
Patient reports that her back, neck and chest pain have decreased. She also states that her anxiety has diminished since her initial visit. She reports one day of not being able to perform her home exercise program (HEP) which resulted in an increase of symptoms.

Objective:

	Left	Right
Adduction Drop Test	-	-
FA IR Strength	4/5	4/5
FA ER Strength	4/5	4/5
Hruska Adduction Lift Test	3+/5	2+/5
HG IR	60°	25°
Spirometer	Trial #1: 2000cc Trial #2: 2250cc Trial #3: 2050cc	Normal Range: 2250cc

Assessment:
Patient still demonstrates lack of a ZOA resulting in hyperinflation. Patient needs a combination of integrative opposing muscle to achieve a ZOA in addition to improving apical expansion.

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Treatment:
Manual restorative techniques:

- Left AIC
- Right Superior T4
- Right Intercostal Stretch

1. *Left Sidelying Knee Toward Knee (2nd Edition CD: Left Adduction – Sidelying #5)*
    - Emphasis was placed on maintaining neutrality through her AIC and BC chain after it was achieved through manual restoration techniques.

2. *Standing Resisted Wall Reach (2nd Edition CD: Integration – Standing #12)*
    - Emphasis was placed on flexion of the thorax to maintain a ZOA while activating the abdominals.

3. *Latissimus Hang Stretch (3rd Edition CD: Frontal Latissimus Inhibition)*
    - Next two activities listed were chosen for inhibition of the lats, right intercostals, and left pectorals.

4. *Standing Quadratus Lumborum and Intercostal Stretch (3rd Edition CD: Frontal Right Intercostal Inhibition)*

5. *Supported Pectoralis Stretch (3rd Edition CD: Transverse Left Pectoral Inhibition)*

Third Visit (2 weeks later)

Subjective:
Patient denies having any recent panic attacks. She states that she feels best if she performs her HEP regularly and notices an increase in her symptoms if she misses a day.

Objective:

	Left	**Right**
Adduction Drop Test	–	–
Hruska Adduction Lift Test	3+/5	3+/5
HG IR	90°	90°
Apical Expansion with Contralateral Opposition	Limited	Limited

Assessment:
Patient is neutral through her pelvis and has full HG IR bilaterally. She still lacks a complete ZOA which reflects poor apical expansion bilaterally. Patient requires manual restorative techniques to compliment her HEP.

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Treatment:
Manual restorative techniques:
- Left AIC
- Right Superior T4
- Right Subclavius
- Right Sibson

No changes were made to her HEP.

Following treatment her apical expansion increased bilaterally but her HG IR values decreased to 60° bilaterally. This change in right HG IR values is indicative of a right superior T4 syndrome. Once apical expansion had been restored the scapula remained in a mal-aligned position on the rib cage.

Fourth Visit (2 weeks later)

Subjective:
Patient states that her pain is at 0/10. She hasn't had any anxiety attacks since she started PT, however, she did experience a feeling of anxiety during travel recently. This did resolve after completion of her HEP. She has an appointment with her doctor to re-evaluate her and doesn't feel like she needs further PT.

Objective:

	Left	**Right**
Adduction Drop Test	–	–
Hruska Adduction Lift Test	3+/5	3/5
HG IR	90°	90°
Apical Expansion with Contralateral Opposition	Normal	Normal

Assessment:
Patient could benefit from continued reaching activity to maintain her ZOA. She also needs to continue lower quadrant activity to maintain pelvic neutrality.

Treatment:
1. *Retro Stairs (2nd Edition CD: Left Gluteus Medius – Standing #5)*
    - Emphasis was placed on increasing left AF IR so patient can establish left AF IR before starting left reaching activity for right trunk rotation.

2. *Sidelying Posterior Mediastinal Opening with Ipsilateral Iliacus and Psoas Inhibition (3rd Edition CD: Frontal Left Posterior Mediastinum Inhibition)*
    - Emphasis was placed on keeping the back rounded and expansion of the posterior mediastinum to increase trunk flexion.

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3. *Standing Right Step Around with Right Quadratus Lumborum Stretch and Right Apical Expansion (3rd Edition CD: Transverse Left Posterior Capsule Inhibition)*
    - Emphasis was placed on shifting into left AF IR while promoting right trunk rotation for right apical expansion.

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