OPP3 Intro to Balanced Ligamentous Tension (BLT) and BLT of the Spine
Wednesday August 13th 2025
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Lab Sequence
1. Intro//clinical pearls/BLT and short vs long lever
2. Segmental diagnoses for C/T/L spines
3. Short lever BLT of the Tibiofemoral joint diagnosis and treatment
4. Short lever BLT of Cervical spine
5. Short lever BLT of the Thoracic and Lumbar spine
6. Long lever BLT of Cervical, Thoracic and Lumbar spines
7. Review, wrap-up, assess possible need for post-lab treatment

Objectives:

1. Discuss balanced ligamentous tension including indications, targeted tissues, and sequence of technique
2. Perform successful diagnoses in each region as indicated
3. Understand the difference between short and long lever application of treatment
4. Students should be able to perform short-lever segmental diagnosis of cervical, thoracic and lumbar spine.
5. Practice and demonstrate short lever BLTof the:
    a) Tibiofemoral joint
    b) Cervical spine
    c) Thoracic spine
    d) Lumbar spine

Pearls:

1. BLT – treating ligamentous structures; finding a balance point and then waiting for a release. Not technically direct or indirect, however can move tissues in either direction to get to the balance point. You will explore this further in later OCMM labs as Balanced Membranous Tension (BMT).
2. Discuss the LAS cardinal principles of disengagement, exaggeration, and balance from the lecture as being part of the motion options available for treatment.

3. Please work with your preceptors to get hand-over-hand experience with each technique so you can appreciate the point of balanced tension and release
4. Discuss what releases feel like – here is some possible language:
   BLT – softening, warmth, change in tension needed to maintain the position, change in Primary Respiratory Mechanism (PRM).

Short Lever Diagnosis and BLT Treatment of Tibiofemoral Joint

Possible Clinical Indications: Knee pain.
Possible TART Findings: TART changes, such as swelling, tenderness at the knee, and instability.

Diagnosis:
Patient position: Seated
Physician position: Seated facing the patient

1. The physician uses their cephalad hand to monitor the tibiofemoral joint line and their caudad hand to support the patient's heel, keeping the ankle at 90 degrees, and utilizes Internal and external rotation of the tibia to compare side to side.
2. The physician then places their thumbs on the anterior tibia, just below the joint line, and their fingers in the posterior popliteal fossa and assesses the anterior/posterior and medial/lateral gliding motions of the joint.
3. Lateralize to the side of greatest restriction.
4. Chart the motions of ease, ie. Right tibial, anterior medial glide, external rotation.

Treatment of Tibiofemoral Joint SD- BLT
Patient position: Seated
Physician position: Standing at the ipsilateral side of the dysfunction knee.
Example Diagnosis: Right tibial anterior, medial glide with external rotation SD.

1. The physician's cephalad hand engages the right distal femur posteriorly, and the caudad hand engages the proximal tibia anteriorly, re-assessing anterior/posterior, Internal/external rotation, and medial lateral motions available.
2. Using either compression or distraction achieve some joint play in the articulation.
3. Next, engage each of the planes of motion to achieve a condition of balanced ligamentous tension at the articulation.
4. Once the balance point is reached, it will be held until a release is appreciated, allowing the ligaments to "unwind." Once a release has been completed, the physician returns the joint to neutral.
5. Reassess.

Short lever Diagnosis and BLT treatment of the Cervical spine

Possible Clinical Indications: Cervicalgia
Possible TART Findings/Diagnosis: Hypertonicity of Cervical Muscles, Tri-Planar vertebral finding.

Diagnosis:
Patient Position: Supine
Physician Position: Seated at the head of the table, allowing their forearms to rest on the table.

1. The physician identifies the most restricted cervical segment by individually contacting the articular pillars of each segment with their finger pads and performing a motion test for rotation by pressing the articular pillars anteriorly, one side at a time, with a vector towards the opposite eye. Sidebending may be determined by translating the vertebra with lateral to medial pressure in either direction. Test for flexion and extension by rolling their fingers superiorly on the articular pillars to test flexion and inferiorly to test extension.
2. Name for position of ease.

Treatment:
Example Diagnosis: C3 RrSr
Patient Position: Supine
Physician Position: Seated at the head of the table, allowing their forearms to rest on the table.

1. Once the physician has determined the most restricted segment, in this case C3 RrSr, they place their second digit on the articular pillars of C4 bilaterally and their third digit on the articular pillars of C3 bilaterally.
2. Using either compression or distraction at C3 on C4 , achieve some joint play in the articulation.
3. Next, engage each of the planes of motion to achieve a condition of balanced ligamentous tension at the articulation.
4. Once the balance point is reached, it will be held until a release is appreciated, allowing the ligaments to “unwind.” Once a release has been completed, the physician returns the joint to neutral.
5. Reassess.

Short lever Diagnosis and BLT treatment of the Thoracic and Lumbar Spine

Possible Clinical Indications: Thoracic or Lumbar Pain
Possible TART Findings/Diagnosis: Hypertonicity of Thoracolumbar Muscles, Tri-Planar vertebral finding

Diagnosis:
Patient Position: Supine.
Physician Position: Seated at the side of the table.

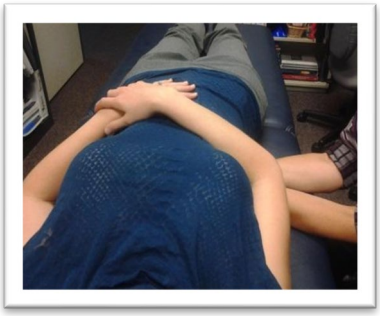
1. The physician identifies the most restricted thoracic or lumbar segment by individually contacting the spinous process of each segment and motion testing while stabilizing the segment below.
2. To diagnose rotation, the physician moves the spinous process of the chosen vertebrae towards them or pushes it away. Pulling it towards induces rotation away, and pushing it away induces rotation towards.
3. To diagnose sidebending, the physician contacts the transverse process of the chosen vertebra and then gently pulls the segment towards them while stabilizing the vertebra below for contralateral sidebending, or away from them for ipsilateral sidebending
4. To diagnose flexion, push anteriorly on the superior aspect of the chosen vertebra while stabilizing the vertebra below.
5. To diagnose extension, push anteriorly on the inferior aspect of the dysfunctional vertebra while stabilizing the inferior vertebra.
6. Name for the position of ease.

Treatment:

Example Diagnosis: L3 (T3) RlSl

Patient Position: Supine.

Physician Position: Seated at the contralateral side of the table.



1. Once the physician has determined the most restricted segment, in this case L3 RlSl, they place their cephalad hand second digit on the contralateral transverse process of L3 and their caudad hand second digit on the contralateral transverse process of L4.
2. Using their third digit, they place their cephalad hand third digit on the ipsilateral transverse process of L3 and their caudad hand third digit on the ipsilateral transverse process of L4.
3. Using either compression or distraction at L3 on L4 , achieve some joint play in the articulation.
4. Next, engage each of the planes of motion to achieve a condition of balanced ligamentous tension at the articulation.
5. Once the balance point is reached, it will be held until a release is appreciated, allowing the ligaments to “unwind.” Once a release has been completed, the physician returns the joint to neutral.
6. Reassess.

   Note: The physician can adjust hand position for comfort as needed.

Long lever BLT treatment of the Cervical spine

Possible Clinical Indications: Cervicalgia

Possible TART Findings/Diagnosis: Hypertonicity of Cervical Muscles, Tri-Planar vertebral finding.

Treatment:

Example Diagnosis: C3 RrSr

Patient Position: Supine

Physician Position: Seated at the head of the table, allowing their forearms to rest on the table.

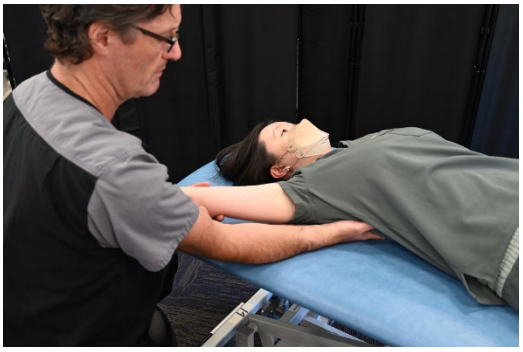
1. Once the physician has determined the most restricted segment, in this case C3 RrSr, they place their thumb and first finger of one hand on the articular pillars of C4, and the other hand contacts the patient's parietal/frontal region.
2. Using either compression or distraction at the head at C3 on C4 to achieve some joint play in the articulation.
3. Next, engage each of the planes of motion to achieve a condition of balanced ligamentous tension at the articulation.
4. Once the balance point is reached, it will be held until a release is appreciated, allowing the ligaments to “unwind.” Once a release has been completed, the physician returns the joint to neutral.
5. Reassess.

Long lever BLT treatment of the Thoracic spine

Example Diagnosis: T3 RlSl

Patient Position: Supine.

Physician Position: Seated at the contralateral side of the table.



1. Once the physician has determined the most restricted segment, in this case T3 RlSl, they place their caudad hand second digit on the contralateral transverse process of TT and their caudad hand second digit on the ipsilateral transverse process of T4.
2. Using their cephalad hand, they contact the patient's ipsilateral upper arm and, using either compression or distraction at T3 on T4 , achieve some joint play in the articulation.
3. Next, engage each of the planes of motion to achieve a condition of balanced ligamentous tension at the articulation using the long lever created by the forearm contact.
4. Once the balance point is reached, it will be held until a release is appreciated, allowing the ligaments to “unwind.” Once a release has been completed, the physician returns the joint to neutral.
5. Reassess.

   Note: The physician can adjust their hand position by trapping the patient's arm with their arm and moving the physician's torso to achieve the balanced tension required. Also, as the lower thoracic vertebrae, eg, T11, T12, the Lumbar long lever technique may be more appropriate.

Long lever BLT treatment of the Lumbar spine

Example Diagnosis: L3 RlSl

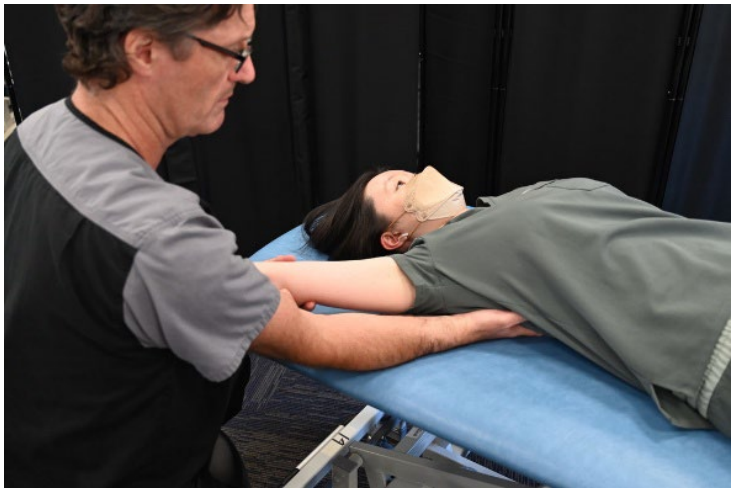
Patient Position: Supine.

Physician Position: Seated at the contralateral side of the table.

1. Once the physician has determined the most restricted segment, in this case L3 RlSl, they place their cephalad hand second digit on the ipsilateral transverse process of L3 and their third digit on the contralateral transverse process of L3 .
2. Using their caudad hand, they contact the patient's ipsilateral upper leg at or above the knee on the posterior side. Using either compression or distraction at L3, achieve some joint play in the articulation.
3. Next, engage each of the planes of motion to achieve a condition of balanced ligamentous tension at the articulation using the long lever created by the upper leg contact.
4. Once the balance point is reached, it will be held until a release is appreciated, allowing the ligaments to “unwind.” Once a release has been completed, the physician returns the joint to neutral.
5. Reassess.

   Note: The physician can adjust their hand position by trapping the patient's arm with their arm and moving the physician's torso to achieve the balanced tension required.

Long lever BLT treatment of the Cervical spine



Long lever BLT treatment of the Thoracic spine

Long lever BLT treatment of the Lumbar spine