

Thoracic Hyper-Kyphosis
&
Thoracic Stiffness/Segmental
Hypomobility

Contents

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Chapter 1

INTRODUCTION OF THE THORACIC SPINE

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INTRODUCTION OF THE THORACIC SPINE

- MRI through the region of the T12-L1 demonstrates marked asymmetry of the facet joints compared bilat, this is a common feature of these transitional joints
- MRI through the region of the T12-L1 also demonstrates that some of these facet joints are morphology asymmetrical bilat leading to decreased ROM

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INTRODUCTION OF THE THORACIC SPINE

Thoracic Skeletal Changes With Age

- Costal cartilages ossify and allow less movement
- The ligaments and joint capsules stiffen
- The thoracic spine loses mobility

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INTRODUCTION OF THE THORACIC SPINE

- Bone mass starts to deteriorate after the third decade
- Osteoporosis

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INTRODUCTION OF THE THORACIC SPINE

An increase in Thoracic kyphosis can lead to

- Thoracic spinal stiffness & decreased ROM
- Thoracic facet joint pain
- Thoracic pain referred from the rib articulation (CTJ)
- Breathing complications

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Chapter 2

STRUCTURAL CAUSES OF THORACIC PAIN

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STRUCTURAL CAUSES OF THORACIC PAIN

- Intervertebral joint sprain
- Costotransverse joint sprain (CTJ)
- Costotransverse joint syndrome (CTJ)
- Facet joint syndrome/irritation

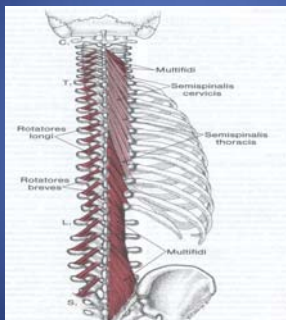
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STRUCTURAL CAUSES OF THORACIC PAIN

- Articulating capsule
- Disk
- Vertebral endplates
- Postural overload

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STRUCTURAL CAUSES OF THORACIC PAIN



(Travel, JG, Simons, DG, 1999)

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Chapter 3

MYOFASCIAL CAUSES OF THORACIC PAIN

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MYOFASCIAL CAUSES OF THORACIC PAIN

- Paraspinal muscular TrP's
- Paraspinal muscle strain
- Paraspinal hypertonicity

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MYOFASCIAL CAUSES OF THORACIC PAIN

- Rhomboids TrP's
- Multifidus TrP's
- Postural overload

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Chapter 4

STRUCTURES THAT CAN CAUSE ALTERED SENSATION

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STRUCTURES THAT CAN CAUSE ALTERED SENSATION

T4 (Upper Thoracic Syndrome)

- T4 syndrome refers to (not necessarily from T4) altered sensation & pain referred to the upper Tx region, posterior shoulder region, upper arm & into the dorsal forearm region.
- The sympathetic trunk (ANS) has also been indicated as a source of altered sensation & pain. This has been classified as a non neurological paraesthesia .

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Chapter 5

- ASSOCIATED ALTERED BIOMECHANICS

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Altered Biomechanics

- Cx Spine (AHT)
- C7/T1 Junction (CxTx Articulation)
- Tx Spine (Hyper-kyphotic/scoliosis)

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Altered Biomechanics

- T12/L1 Junction (TxLx Articulation)
- Scapulae Thoracic Rhythm
- GHJ Rhythm

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Chapter 6

DIFFERENTIAL DIAGNOSIS

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DIFFERENTIAL DIAGNOSIS

- Scheuermann's Disease also known as Scheuermann's Kyphosis
- Schmorl's Nodes (typical of Scheuermann's)
- Disk Prolapse
- Posterior Rib Fracture

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Chapter 7

EXAMINATION OF THE THORACIC SPINE

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EXAMINATION OF THE THORACIC SPINE

- Active Flex 20-45°
- Active Ext 20-45 °
- Active Rot 60-90 °

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EXAMINATION OF THE THORACIC SPINE

- Active Lat/Flex 20-40 °
- Active Combined Movement Testing
- Repeated Combined Movement Testing if necessary

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EXAMINATION OF THE THORACIC SPINE

- Passive ROM
- Rib Spring Test
- Palpation of SP's

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EXAMINATION OF THE THORACIC SPINE

- Palpation of CTJ
- Palpation of Facet Joints
- Palpation of the associated soft tissue

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Chapter 8

TREATMENT OF THE THORACIC SPINE

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TREATMENT OF THE THORACIC SPINE

- DNT paraspinal muscles, Pec's, lats & QL bilat
- MFR paraspinal muscles, QL, Rhomboids, Pec's, lats bilat
- Vacuum cupping paraspinal muscles, rhomboids, Pec's & lats
- Mobs scapulae

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TREATMENT OF THE THORACIC SPINE

- Central Tx mobs
- Unilateral mobs to facet joints
- Unilateral mobs to CTJ

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Chapter 9

CORRECTIVE EXERCISES

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CORRECTIVE EXERCISES

- Correct sitting posture
- Sitting rotational exercises
- Functional wall stretch
- Foam roller focusing on vertical posture correction, segmental horizontal mobs, segmental hinging mobs & segmental horizontal mobs combined with segmental hinging mobs (the 1 day prac workshop will cover this in detail)

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CORRECTIVE EXERCISES

- Kneeling rotational exercises to mobilise the Tx spine & associated fascia. A thera band, rubber tubing or a cable machine is ideal
- The Book – side lying rotational exercise with no resistance focusing on mobilising the Tx spine & associated fascia

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REFERENCES

- Brukner and Khan 2006, *Clinical sports medicine*, 3rd edn, McGrawHill, Sydney.
- Sahrmann, S 2002, *Diagnostics and Treatment of Movement Impairment Syndromes*, Mosby, Missouri, America.
- Travel, JG, Simons, DG, 1999, *Myofascial Pain and Dysfunction*, 2nd edition, Williams & Wilkins, Baltimore

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QUIZ TIME

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QUIZ QUESTIONS

Q1

The Tx spine can refer pain into the chest region

Q2

The Tx spine can cause altered sensation into the upper arm & forearm region

Q3

The Tx spine can cause altered sensation & pain into the posterior shoulder region

Q4

The sympathetic trunk has also been indicated as a cause of these symptoms

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QUIZ QUESTIONS – T/F

Q5

The involvement of the sympathetic trunk has been classified as non neurological paraesthesia

Q6

MRI of T12-L1 demonstrates marked asymmetry of the facet joints compared bilat

Q7

MRI of the T12-L1 demonstrates that some of these facet joints are morphology asymmetrical bilat leading to decreased ROM

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QUIZ QUESTIONS

Q8

Postural overload plays a significant role in Tx musculoskeletal conditions

Q9

Corrective exercises & stretching play a significant role in the management long term

Q10

Left sided or central chest pain needs to be cleared first by GP or hospital

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