Effectiveness of facetial joint mobilization in T10 syndrome: A case study

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Abstract
Currently there is limited evidence about T10 syndrome, its pathophysiology and effectiveness of physiotherapy interventions. We describe the effectiveness of facetial joint mobilization and other passive physiotherapy interventions in a 34 year old female patient. After one week of the treatment there was considerable reduction in her symptoms. Hence we propose that facetial joint mobilization may be considered as an adjunct in the management of T10 syndrome.

Keywords: Lower thoracic pain, T 10 syndrome, facetial joint, mobilization, phonophoresis, taping.

Introduction
Treatment-based classification approach to low back pain describes the model whereby physiotherapist can make treatment decisions based on the patient's clinical presentation.1 The primary purpose of the treatment based approach is to identify features at baseline that predict responsiveness to different treatment strategies like manipulation, stabilization or specific exercises.2,3,4,5 However, considering some of the barriers for adopting this classification especially in cases of non-specific low back pain, we felt that customized approach with varied levels of experience could be one of the essential key for favorable outcomes especially for a patient with unusual presentation like T10 syndrome.6

Dr Vladimir Janda is credited for describing various muscle imbalance syndromes. Vladimir Janda was a Czech physician and physiotherapist who became known for his work in the field of skeletal muscle, as well as developing systems to assess and correct movement dysfunction. Janda is known as the father of the Czech rehabilitation method, acknowledged as the method of Janda. He described upper crossed syndrome, lower crossed syndrome, layer syndrome etc. Similar to this, the T4 syndrome was described for the first time by Maitland and McGuckin in 1986.7,8,9,10 It is described as a collection of symptoms resulting from autonomic dysfunction from the upper thoracic spine. However, there is limited information about T10 syndrome involving lower thoracic spine related dysfunction producing lower extremity symptoms.
due to possible sympathetic nervous system (SNS) dysfunction and lower thoracic hypomobility. This case report describes a patient with symptoms that gave suspicion of the presence of manual therapy diagnosis in the form of T10 syndrome.

**Cases Study**

**History:** We describe a 34 year old female patient. Her height was 163 centimeters, weight 52 kilograms and body mass index (BMI) was 19.6. She was a married woman with one child. The patient was seen by a physiotherapist and enrolled for daily treatment. She was referred for physiotherapy by a general practitioner and diagnosed as a case of non-specific low back. She complained of lower back pain and vague pain and sometimes paresthesia or heaviness in both lower legs since two months. She belonged to a middle socio-economic class and fair family and social support. She had no history of similar complaint in the past.

**Physical examination:** Her vital signs were normal. Postural findings included an increased lumbar lordosis. Palpation revealed normal soft tissue and boney contours in the area of symptom. Her New York Posture Rating score indicated no gross abnormality. Local tenderness at tenth and eleventh thoracic vertebrae. Active movements were normal but passive intervertebral movements and passive accessory intervertebral movements were terminally painful with rotations on either side at T10-11 segment.

**Procedure:** Ethical approval was granted from the Institutional Ethical Committee and the patient gave an informed written consent. Her demographic data, physical examination, pressure pain threshold and visual analogue scale score were recorded. She was treated with phonophoresis with piroxicam ointment and aquasonic gel with 0.8W/Cm$^2$ for 5 minutes with 1 MHz pulsed mode ultrasound with 1:1 pulse ratio, facetal joint mobilization (Figure 1) at T9-10 and T10-11 for three sets of 30 seconds and at the end a crossed dynaplast tape was applied at T10 level with a small cross appearance over T10 spinous process. The treatment protocol was continued for one week and final change in form of outcome measures were recorded before she was instructed to continue the home exercises program. (Figure 2) Before the participation in this study her pain was 5.8 and pressure pain threshold was 7.5 Lbs and after one week of the intervention it was 1.8 and 16.5 Lbs respectively.

![Facetal joint Mobilization technique](image1)

![Self Mobilization technique using towel](image2)

**Discussion**

This case provides information about the presence of the T10 syndrome and its management with physiotherapy interventions. Further, it was noted that significant relief in symptoms were noted in the present case. The term T10 syndrome is uncommon and it appears to be a bunch of symptoms including lower back pain, stiffness, heaviness, paresthesia and tingling in both lower extremities with a possible autonomic dysfunction. Facetal joint mobilization may...
have neurophysiological, mechanical, psychological or placebo effect but it appears that mobilization may directly or indirectly work on sympathetic nervous system dysfunction thereby restoring the normal functioning of autonomic nervous system. Passive mobilization may stimulate the sympathetic nervous system and activate the descending pain inhibitory mechanism which increases sympathetic activity and decreases pain due to the release of noradrenaline from the dorsal periaqueductal grey area.\textsuperscript{14, 15}

**Conclusion**

There is lack of studies about the T10 syndrome but this case study support the idea of possible passive and active physiotherapy interventions like mobilization, phonophoresis and taping as part of overall management.

**References**

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