

## Case Report

# Temporomandibular joint dysfunction and physiotherapy: direction through a case report

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### ABSTRACT

Temporomandibular joint (TMJ) dislocation is an uncommon but debilitating condition of the facial skeleton. The condition may be acute or chronic. Acute TMJ dislocation is common in clinical practice and has been managed easily with manual reduction. Chronic recurrent TMJ dislocation is a challenging situation to manage. In this article, we discuss a case referred by the department of oral medicine for conservative management of the recurrent dislocating TMJ. This case was managed conservatively using physical therapy as the first line of management. At the end of the intervention the patient was pain free and had achieved normal function of the TMJ.

**Keywords:** Temporomandibular joint, Physiotherapy, Oral medicine, Kinesio taping, Pain

### INTRODUCTION

The Temporomandibular joint (TMJ) accounts to 3 % of the total dislocations reported in the body.<sup>1</sup> The pain associated with TMJ dysfunction leads to various limitations like joint mobility and functions like eating and speaking.

Early reduction of the dislocated TMJ is essential as a delay leads to further difficulties in reducing the dislocation. It is also known to be a cause for recurrent dislocations.<sup>3-5</sup> TMJ dislocation impacts the quality of life of those affected with the condition.<sup>2</sup> Management of TMJ dislocations is primarily manual reduction but mostly surgical in nature. However, in recent times individuals are looking for alternative conservative ways to manage TMJ dislocations.

Physical therapy plays an important role in conservative management of various musculoskeletal disorders. Approximation of the dislocated TMJ, Pain and muscle

weakness can be managed using several physical therapy strategies. Among the various treatment strategies used to conservatively manage musculoskeletal conditions taping and dry needling have been widely used. Kinesio tape is known to enhance blood circulation to the area, lymphatic drainage from the area, reduce pain, realign joints and change recruitment activity pattern of muscles. Dry needling is known to tap or prick the nerve endings or neural tissue when it is inserted into a trigger point. Literature suggests that dry needling has a short term and long-term effect on pain and improves range of motion. There is however a paucity of literature on the effectiveness of physiotherapy intervention in the management of recurrent TMJ dislocation.

### CASE REPORT

A 26 years old male was referred to the department of physiotherapy by the department of oral medicine with complaints of a clicking sound and difficulty in approximating the left side of the mouth. The patient was

apparently well when he suddenly developed excruciating pain in his ears that originated from the temporomandibular joint. He approached the department of ENT and was then referred to the department of oral medicine for the same. The oral medicine department reported a mouth opening of 29 mm and found the pterygoid, temporalis, masseter, sternocleidomastoid (SCM) and

Trapezius to be tender on palpation. He was then referred to the department of physiotherapy for conservative management of the dislocating TMJ. Pre-treatment radiograph showed illustrated bilateral anterior dislocations of the patient's TMJs. There was anterior displacement of both condyles (Figure 1).

**Table 1: Results pre and post treatment.**

Assessment date	02-12-2018	07-12-2018	08-12-2018	10-12-2018	13-12-2018
<b>Mouth opening</b>	-	-	-	-	45 mm
<b>Numerical pain rating scale</b>	5/10	3/10	1/10	1/10	0/10
<b>Palpatory findings</b>					
<b>clicking</b>	++	+	-	-	-
<b>Tenderness</b>	++	+	-	-	-
<b>Pain pressure threshold</b>	Not evaluated	L 1.5 kgs R 2.0 kgs	L 1.9 kgs R 2.4 kgs	L 4 kgs R 5 kgs	L 5 kgs R 4.6 kgs
<b>Activity limitation</b>	Difficulty in eating solid food difficulty in speaking	-	-	-	-
<b>Management</b>	Rigid taping exercises for pterygoid and masseter	Rigid taping exercises	Pulsed therapeutic ultrasound rigid taping exercises	Pulsed therapeutic ultrasound kinesio taping exercises	Pulsed therapeutic ultrasound dry needling kinesio taping exercises
<b>Post-intervention findings</b>	VAS 3/10 clicking + deviation to R reduced	VAS 1/10	VAS 0/10 deviation to R reduced	VAS 0/10 deviation to R minimal	VAS 0/10 deviation to R minimal

VAS - visual analog score, L - left, R - right.

On further evaluation at the department of physiotherapy it was noted that the pain was constant in nature, which increased at night and early morning, aggravated during mouth opening and was reported to be 9 on the visual analog scale. Irritability was high and the patient had no history of contributing factors like chewing of gum or tobacco that could probably lead to recurrent dislocation of the TMJ. Movement examination revealed a deviation of the mouth to right with a bilateral clicking of the TMJ. It was associated with excruciating pain and minimal mouth opening. The other objective examination findings include mouth opening that was assessed with a divider & pain pressure threshold which was examined using a pain pressure algometer.

The short-term goals of management were aimed at reducing pain at the TMJ and to enhance mouth opening. The long-term goal was to prevent recurrent dislocation of the TMJ and improve the activity limitation of the individual.

### Management

The management aimed at reduction in pain, mobility at the TMJ, reduction of dislocation and strengthening of

the jaw muscles. The first two sessions focused on reduction of pain and recurrence of dislocation. Rigid taping was the method of approximating the easily dislocating TMJ. An under-wrap tape was applied and followed by a rigid tape. The tape extended from the chin to both sides of the ear with mouth closed. It was superimposed with another tape with a pull to the left from right. This method of taping was used to reduce the dislocation. Limited mouth opening was advised. Patient was advised to use a spoon to eat and avoid excessive mouth opening. He was also advised a soft diet. Exercises to strengthen the pterygoid and masseter were taught to the patient.

The patient then underwent pulsed ultrasonic therapy and was taped using a Kinesio tape for 2 sessions. The anchor was placed on the side of recurrent dislocation to maintain the direction of pull to approximate the joint. The last 2 sessions consisted of pulsed ultrasonic therapy followed by dry needling of the masseter muscle and kinesio taping (Table 1).

There was a significant difference between the pre-treatment and post-treatment (Figure 2) scores as described in the table above.



**Figures 1: Pre-treatment X-ray.**



**Figure 2: Post-treatment X-ray.**

## DISCUSSION

Dislocation of the TMJ is attributed to either a structural deficit or neuromuscular function. Laxity of the articular disc and the capsular ligament, long-standing internal derangement, and spasm of the lateral pterygoid muscles leads to an altered neuromuscular function.<sup>6</sup> The management of TMJ dysfunction is widely done using minimal invasive and open surgeries.<sup>7</sup>

Taping is widely used to manage musculoskeletal dysfunctions. Reduction of TMJ using rigid tape helps align the joint. It restricts the ROM and aids healing. Kinesio taping is known to activate mechanoreceptors leading to a reduction in pain, activation of muscles and efficient drainage of lymphatic fluid.<sup>8</sup> Literature suggests dry needling targets trigger points and has short term and immediate improvement in pain.<sup>6</sup> Exercises suggested during the treatment aimed at improving the ROM and strength of the masseter and pterygoid muscles. The resistance provided was to tolerance and given manually by the individual himself.

## CONCLUSION

The current case report suggests that a conservative management approach that involves strategies of pain

management along with muscle strengthening, taping and trigger point release could benefit individuals suffering from recurrent TMJ dislocation.

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