

Reduction of Tempero Mandibular Dislocation: A Case Report

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Abstract

Question: Can Temporal-Mandibular Joint (TMJ) dislocation will be reduced with external support (taping technique)?

Participant: A healthy adult with grade 1 TMJ anterior dislocation left side.

Intervention: Treatment which Taping to the TMJ and followed with jaw strengthening exercises.

Outcome: The primary outcome is reduction in pain and secondary is to increase the mobility.

Conclusion: The people with TMJ dislocation with various reasons will be benefitted with this approach in which we can aim to treat the cause at local level, anxiety and distress at the psychological level.

Keywords: Temporal-mandibular joint; Dislocation; Taping; Exercises

Case History

Introduction

The facial area is one of the most frequently injured areas of the body, and the mandible is one of the most common maxillofacial bones dislocates because of its prominent position on the face, the powerful muscle attachments and the lack of support [1].

Dislocations occur when two bones that originally met at the joint detaches. Dislocations should not be confused with Subluxation. Subluxation is when the joint is still partially attached to the bone [1]. When a person has a dislocated jaw, it is difficult to open and close the mouth. Dislocation can occur if the jaw locks when the mouth is widely opened. If the jaw is dislocated, it may cause severe headache, inability to concentrate apart from pain and incomplete opening of the mouth [2]. Dislocation results in wrong alignment of the jaw muscles that leads to unwanted rotation movements of jaw while opening and closing the mouth that adds to the pain [2].

Taping has become a very popular treatment for several health conditions over the last decade. This method of taping was created by a Japanese chiropractor in the 1970s [3]. Kinesio Tape is thinner and more elastic than conventional tape, which is hypothesised to allow greater mobility and skin traction [4,5].

Other proposed benefits include improved blood and lymphatic circulation, reduced pain intensity, realignment of joints and change in the recruitment activity patterns of the treated muscles [3].

History

A male participant aged 35 years was admitted to arogyadhama in the month of June 2014 with pain in the face and inability to open his mouth from past 6 months. He complained of constant mild pain in the face in front of the left ear that would get aggravated after eating solid food. He also complained of inability to open the mouth completely and chew hard foods. Other complaints included a feeling of obstruction in the right side of the throat before this complaint started and frequent episodes of cough and cold with dust allergy.

This participant had presented initially to a dentist with mild pain in front of the ear and inability to open the mouth completely as he thought this may be a dental problem.

The dentist opened his mouth wide to examine and advised treatment. As he had no relief after several visits to the dentist he started consulting other doctors. As the problem continued he wanted to try holistic therapy and contacted VYASA arogyadhama.

Assessment on admission

On examination to check the range of motion (ROM) of jaw by asking him to open his mouth, he complained of pain in front of the left ear and the ROM was limited.

We suspected Jaw dislocation and got an X-ray of the jaw and that showed grade 1 anterior dislocation (Figure 1).



Management

Along with the practices of integrated approach of yoga therapy to work holistically at mind body level to correct all imbalances, we planned physiotherapy treatment aimed at pain relief, reduction of the dislocation and strengthening the jaw muscles.

For pain relief we planned for daily Ultrasound Therapy at an Intensity of 1.5 MHz for 8 minutes [6], around the jaw in front of the left ear. Care was taken not touch the ear and sub mandibular lymph nodes.

For reduction of dislocation taping technique was chosen [3,7].

We supported the jaw with a micro pore sticking plaster tape and the sequence of taping procedure was followed as shown in (Figure 2).



After this a bandage with five inches wide thick gauze was tied around the head [7,8] to strengthen the taping (Figure 3).



He was given soft holistic diet and advised not to open his mouth wide [9].

Strengthening of muscles

We showed him jaw strengthening exercises and asked him to do those at least 10 reputations of each [10].

Just before get up or go to bed. Sit upright in a chair to perform all the following manoeuvres.

Close mouth and make sure your teeth are touching but do not 'clench' you teeth, resting the tip of your tongue on your palate just behind the upper front teeth and move the teeth forwards and backwards (Figure 4).



Relax shoulder blades and let lower jaw relax. Proper posture ensures a better jaw workout (Figure 5).

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exercise; B: put the front one-third of tongue on the roof of mouth and apply a light force to the tip of the tongue while the tip of the tongue doesn't touch the teeth; C: during exercise and advised to maintain this position as long as can.

Relax tongue and make the "M" sound. Keep jaw relaxed, and make sure teeth don't touch. Move lower jaw up and down and side to side to warm up the muscles.

Open mouth as wide as possible without inducing pain and move jaw back and forth. Repeat this action at least 10 times and then relax jaw muscles [11].

Alignment

Do this one in front of a mirror. Open mouth slowly, taking notice in any lateral (sideways) movement of teeth. Once open it to the largest can without any strain, close it, looking for the same lateral movements. If there are any, do the exercise slower. The goal is for both of jaw joints to have equal control over mouth, which usually isn't the case in TMJ disorders (Figure 6).



Joint strength

Use fist and slowly push on one side of jaw. The bottom of hand should be pressuring chin. Push back with jaw, but make sure teeth are aligned. Start off slowly (no jerky movements) with a small amount of pressure, and if it doesn't hurt, push a bit harder. Do both sides; the point of this is to generally increase the strength and control of the joint (Figure 7).



exercise.

More joint strength

Push down on bottom teeth with fingers, and push up with jaw. It helps strengthen the vertical muscles around the TMJ. If one hand isn't enough, use both hands-just doesn't bite down (Figure 8).



Follow-up

After 14 days of this therapy check X-ray of the jaw was taken which showed correction of the dislocation with normal appearance of the TMJ. The participant felt better, the pain has decreased and was able to open the mouth wider than before (Figure 9).



Figure 9: Post treatment X-ray showing the reduction of dislocation.

Discussion

The dislocation of the temporomandibular joint has been suggested to be the result of imbalance in the jaw-opening muscles, or the spasm of the jaw-opening muscles on the side opposite to the deviation [12]. Dislocations usually treated by open reduction and immobilizing of the joint after the procedure. Evidence suggests that immobilizing the joint after any surgical procedure will result in fibrosis, which may make assessment of efficacy of the actual surgical procedure difficult [13]. The most common complication was a neurosensory deficit in the region innervated by the inferior alveolar nerve [14] is a branch of the mandibular nerve, which is itself the third branch (V3) of the trigeminal nerve (cranial nerve V) leads to significant reduction in quality of life for the patient with functional difficulties and psychological impact. The use of high concentrations of volatile anesthetic agents in combination with morphine to achieve hypotensive conditions [15] has been recognized for over 30 years [16,17], but rates of postoperative nausea and vomiting can be high [18,19].

Taping can be used to manage muscle strength, and its cutaneous afferent stimulation is said to be correlated with motor unit firing [20]. It is a method that can be easily used to improve proprioception by increasing stimulation of the mechanoreceptors of the skin [21], relive pain, and recover muscle functions to a normal level by strengthening weakened muscles [22]. In addition, Kinesio taping is said to be capable of affecting the fascia and lymph fluid flow [23].

The active and muscle relaxation exercises reduce pain and increase ROM up to the normal range [24-26]. The increase in ROM can be explained by the active exercise and the masticatory muscle relaxation exercise, which involve opening and closing movements, being effective at pain reduction.

Conclusion

The people with TMJ dislocation with various reasons will be benefitted with this approach in which we can aim to treat the cause at local level, anxiety and distress at the psychological level.

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