

# Effect of Dry Needling in Myofascial Pain Syndrome: A Case Report

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## ABSTRACT

**Background:** Myofascial pain syndrome is a chronic pain disorder, in which pressure on sensitive points in our muscles (trigger points) causes pain in the muscle and sometimes in seemingly unrelated parts of your body, which is called as referred pain. Trigger point dry needling is an invasive procedure in which a filiform needle is inserted into the skin and muscle. We report a case of 28 years old male with complain of low back pain and bilateral hip pain, along with difficulty in prolong sitting and walking. He had a past history of Covid 2 years back. Since then, he had the complain of pain. He went to a local orthopaedic hospital where he was diagnosed with stage 2 Avascular Necrosis (AVN) of left femoral head and conservative management started. But the pain did not subside. So, he came to our Physiotherapy OPD.

**Purpose:** To study the effectiveness of Dry Needling in Myofascial Pain Syndrome.

**Method:** After physiotherapy assessment, the treatment goals were set - To reduce pain (Dry Needling), To maintain and improve range of motion and muscle strength (Therapeutic Exercises), To improve gait pattern (Gait Training). Application of Dry needling along with therapeutic exercises were given to the patient.

**Result:** We have seen reduction in pain (NPRS 7 to 2), time taken in Timed Up and Go (TUG) Test (11 sec to 7 sec), and improvement in Range of Motion, Muscle Strength and Gait pattern.

**Conclusion:** Dry Needling is an effective non pharmacological treatment primarily reducing pain, leading to secondary improvement in range of motion, muscle strength and gait in patients with myofascial pain syndrome.

**Keywords:** Myofascial Pain Syndrome, Dry Needling.

## INTRODUCTION

According to International Association for the Study of Pain, “An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage” is called as Pain.<sup>[1]</sup> Myofascial Pain is a common

type of musculoskeletal pain that arises from discrete hyperirritable palpable nodules in taut bands of muscle called Myofascial trigger points. It is a regional muscle pain disorder characterized by localized muscle tenderness and pain and is frequently the cause of persistent pain.

Myofascial pain syndrome is a chronic pain disorder, in which pressure on sensitive points in our muscles (trigger points) causes pain in the muscle and sometimes in seemingly unrelated parts of your body, called as referred pain.<sup>[2][3]</sup> 30% to 85% of patients with musculoskeletal pain suffer from Myofascial Pain Syndrome.<sup>[4]</sup> The common etiologies of myofascial pain syndrome may be from direct or indirect trauma, pathologies of spine, exposure to cumulative and repetitive strain, postural dysfunction, and physical deconditioning.<sup>[5][6]</sup> Dry needling is a skilled intervention that uses a thin filiform needle to penetrate the skin and stimulate underlying myofascial trigger points, muscular, and connective tissues for the management of neuromusculoskeletal pain and movement impairments.<sup>[7]</sup>

### **CASE REPORT**

We present a case of 28 years old male who came to our physiotherapy OPD in 2023 with a complain of lower back and bilateral hip pain, along with difficulty in prolong sitting and walking. He had a history of COVID-19 in 2021 for which he was medically treated. In 2022 he gradually started having pain around lower back and hips (Right>Left). He went to a local orthopaedic hospital where MRI was done, which suggested Stage 2 Avascular Necrosis (Ficat and Arlet Classification) of left femoral head, and was managed conservatively. He came to our OPD with a recent X ray, as the pain increased. On examination, multiple trigger points were found on bilateral TFL, gluteus medius and piriformis muscle. NPRS score was 7/10, Timed Up and Go time was 11 sec, Reduced

stance phase on right side while walking, Range of motion of Bilateral Hip Abduction, Internal and External rotation was reduced, Muscle strength of Bilateral Hip abductor and external rotators were grade 3/5.

### **INTERVENTION**

After explaining about the condition, dry needling technique and the benefits of exercises, patient was positioned in side lying. The part to be treated was exposed and sanitised. Trigger points were palpated. 7 filiform needles over TFL, 2 over gluteus medius and 1 over piriformis was inserted, and were kept statically for 10 minutes. Along with that Infrared Radiation was given to improve the local blood circulation, which flushes out the noxious irritants and bring fresh blood to enhance healing. A single session of Dry Needling was followed by exercises in the form of self-stretching of Hip extensors, external rotators and abductors, Straight leg raise in supine, bridging, bird dog, hip thrusts, glute kicks in standing, hip abduction and Sit to Stand on Chair. All the exercises were performed for 10 repetitions, twice a day, for 3 days.

### **RESULT**

After 3 days of physiotherapy treatment, the patient was re-evaluated. The NPRS score improved from 7 to 2, Timed Up and Go test score improved from 11 sec to 7 sec, improvement was seen in Gait Pattern, Range of motion of Bilateral Hip Abduction, Internal and External rotation improved, and Muscle strength of Bilateral Hip abductor and external rotators was improved.

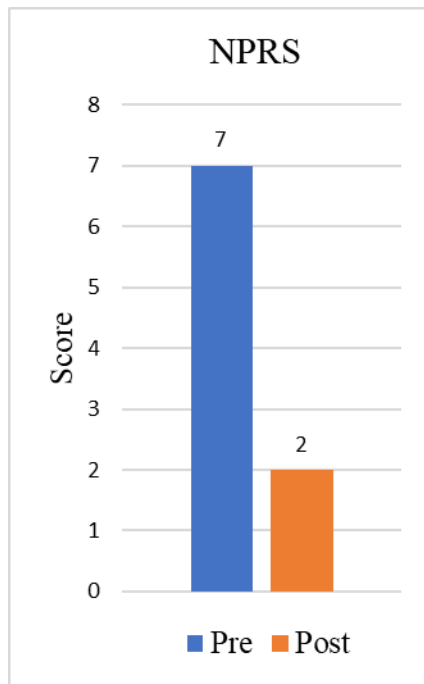


Figure 1: NPRS Score

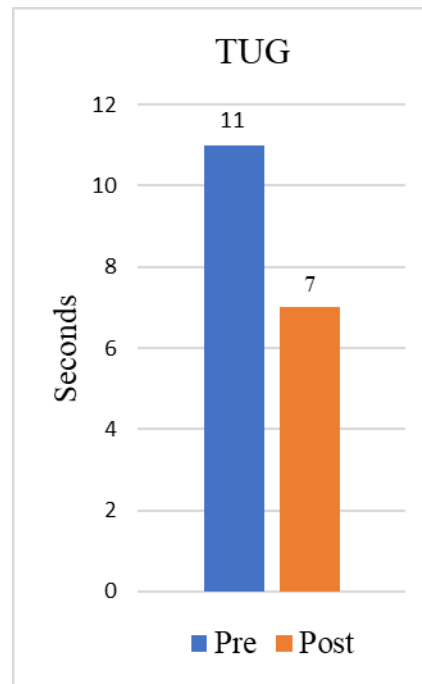


Figure 2: Timed Up and Go Score

	Pre AROM		Post AROM	
	Right	Left	Right	Left
Hip Abduction	0°-35°	0°-30°	0°-40°	0°-40°
Hip Internal Rotation	0°-22°	0°-25°	0°-40°	0°-40°
Hip External Rotation	0°-32°	0°-40°	0°-40°	0°-45°

Table 1: Active Range of Motion

	Pre		Post	
	Right	Left	Right	Left
Hip Abductors	3/5	3/5	4/5	4/5
Hip External Rotators	3/5	3/5	4/5	4/5

Table 2: Manual Muscle Testing

## DISCUSSION

The conventional definition of myofascial pain syndrome is characterized by regional pain originating from hyperirritable spots located within taut bands of skeletal muscle, known as myofascial trigger points.<sup>[8]</sup>

In a study by Lin Liu et al in 2018, 'Evidence for Dry Needling in the Management of Myofascial Trigger Points Associated With Low Back Pain: A Systematic Review and Meta-Analysis', they selected 11 randomized controlled trials (n=802) that used dry needling as the main treatment and included participants diagnosed with low back pain with the presence of myofascial trigger points. The

result suggested that compared with other treatments, dry needling of myofascial trigger point was more effective in reducing the intensity of back pain.<sup>[9]</sup>

Theodorus et al (2018) studied the effects of dry needling on pain relief and functional balance in patients with sub chronic low back pain, and found that dry needling in painful areas, and penetrating all the muscle groups improves pain and functional balance.<sup>[10]</sup>

Choo Aun Neoh et al (2011) treated patients with myofascial pain syndrome for 3 months or longer with dry needling of trigger points and stretching of involved muscles, and concluded that dry needling is

an effective treatment for reducing pain and pain interference. But the long duration and high intensity of pain, poor quality of sleep and repetitive stress were associated with poor outcomes. The outcome of the treatment not only depend on the protocol of dry needling, but also on the characteristics of the disease and demographic profile of the patient.<sup>[11]</sup>

Luis Ceballos-Laita et al (2019) studied the effect of dry needling in hip muscles of hip osteoarthritis patients. They concluded that dry needling reduces pain, improves range of motion and physical function in patients with osteoarthritis of hip joint.<sup>[12]</sup>

Seyed Mansoor Rayegani et al (2013) compared effectiveness of physiotherapy treatment and dry needling in patients with myofascial pain syndrome of upper trapezius. They assessed pain severity and quality of life after one month of treatment. They stated that both physiotherapy treatment and dry needling have equal effect on myofascial pain.<sup>[13]</sup>

Sandra Calvo et al (2021) assessed the effect of single dry needling session on timed up and go test, 10 metre walk test, 6-minute walk test and lower limb muscle tone in patients with parkinson's disease. The results suggested significant improvement in functional mobility of gait and gait speed, as well as changes in the muscle tone in the lower limbs of patients with parkinson's disease.<sup>[14]</sup>

## CONCLUSION

Dry Needling is an effective non pharmacological treatment primarily reducing pain, leading to secondary improvement in range of motion, muscle strength, and gait in patients with Myofascial Pain Syndrome. It is beneficial to apply this technique with therapeutic exercises and electrotherapy modalities to get the desired results.

## FOLLOW-UP

After re-examining the patient, he was adviced for supervised training program in

our department, once a day, 3 times a week, and for home-based exercises.

## Declaration by Authors

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**Conflict of Interest:** The authors declare no conflict of interest.

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