

Effect Of Fascial Distortion Model On Osgoodschlatter Disease - A Case Study

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Abstract: Background: Osgood-Schlatter disease refers to pain isolated to the bump just below the front of the knee in active, growing children (usually aged 9-13 years). It is an inflammation of the bone, cartilage, and/or tendon at the top of the shinbone where the tendon from the patella attaches. Repeated stress can cause the tendon to pull away from the shinbone a bit, resulting in the pain and swelling associated with Osgood-Schlatter disease. **Purpose:** Aim of this study was to find out how treating distorted fascia improves ROM, Pain and function of the patient. **Case Description:** We present a case of 13 year old boy who was involved in sport activity karate had difficulty in performing karate and pain at anterior aspect of knee joint and also had difficulty in bending the knee since 6 months. Orthopaedic doctor advised him for rest and given medication but there was no improvement for long duration so doctor advised him for physiotherapy. We started the treatment in form of ice pack application for 15 minutes and fascial distortion model techniques- trigger band technique and continuum distortion technique was given for 3 weeks and 5 sessions per week. The pre and post measures of data taken every week. **Outcome Measures:** Range of Motion, Visual Analogue scale, Wall Slide Test **Conclusion:** This study shows that FDM is effective in reducing pain, improving ROM and physical function in case of Osgoodschlatter disease.

Keywords: Osgoodschlatter Disease, Fascial Distortion Model, Range of Motion, Physical Function.

1. Introduction

Osgoodschlatter Disease is known as osteochondrosis. In OSD there is inflammation of bone tissue at the end of patellar tendon which attaches to the Tibial Tuberosity.^[1,2] Usually boys are more affected than girls between age of 12 to 15 years. Mainly who are involved in sports activity are more prone to OSD. Also specific types of sports which is having more kicking action are prone to this disease. The Sporting activity like running, jumping, kicking or sports in which sudden change in the movement and in the direction of movement.^[2,3] If early detection of condition and the treatment not started this leads to weakness of the lower limb musculature. In progression patient is not able to perform any physical or sports activity because of persistent pain and weakness of lower limb musculature. The quality of life is disturbed because of pain^[4] Also change in gait pattern of the patients there the range of motion is affected. The exact cause of Osgoodschlatter Disease is not known. The literature suggests that It occurs due to excessive stretch or sudden high velocity isometric contraction generated by Rectus femoris muscle which is part of Extensor muscle of knee joint quadriceps. There is shortening of the Rectus femoris muscle occurs which leads to inflammation of patellar tendon and apophysis of tibial tuberosity. Also there is overload and microtrauma of the tibial tubercle.^[2,5,3] In OSD, traction forces acting on the apophysis area of the tibial tubercle lead to injury which affects patellar tendon and leads to avulsion fracture. When the avulsion fracture occurs the formation of new bone growth occurs. Which gives rise to Osgoodschlatter disease in which inflammation of tibial tubercle occurs. In

OSD pain is over suprapatellar region in all activities of lower limb.^[3] Fascial Distortion Model is a technique used to treat fascial adhesions. There are 6 techniques in FDM, each used according to patient's own body language. In FDM, the formation of OSD results when physical forces cause micro-tears in the fibres of patellar tendon (triggerband forms). The separated fibres are also twisted, which inhibit the flow of osseous material from the tibial tuberosity through the patellar tendon (roadblock effect). Since the pathway is blocked, calcium and other bony materials become deposited within the tendon and ossification becomes significant. In OSD commonly used FDM are Triggerband and Continuum techniques.^[6]

2. Case Description

This case involved a 13 year old boy lives in Vadodara who is kickboxing player. One day suddenly while he was practising the kick he got injury in the Right knee joint. After that he had swelling, knee pain and difficulty in walking for around 2 weeks. At that time he had taken pain killers, applied home remedies. He consulted General Physician and doctor advised him to take rest and given medications. There was no relief for 4 months he visited many doctors and the on and off pattern of pain was there. Patient had walking difficulty and also not able to perform any sporting activity and not able to play kickboxing. Then He Consulted Orthopaedic doctor and he suggested him to take X-ray scan. After that he gave him medications and advised him to take physiotherapy. He came at our place for treatment. There Primary Investigations were done and with clinical Presentation of right knee joint it is confirmed as Osgoodschlatter

Disease. For Treatment Fascial Distortion Model in form of Triggerband and Continuum Distortion Technique given. The symptomatic Relief was there after 1st session only. Along with FDM cryotherapy in form of icepack was also given daily for 15 min/3 times/day. Pre data is taken on first day before treatment and after 3 weeks of treatment.

3. Pre Outcome Measures

- **Range of Motion**

KNEE JOINT	ROM
Flexion	0°-90°
Extension	90°-135°

- **Visual Analogue Scale – 8.4**



- **Wall Slide Test**

for extensor strength not able to perform due to pain

4. PROCEDURE For FDM

Treatment of OSD in FDM given with both continuum technique and triggerband(TB) technique. Patients position- supine line with knee 60° flexed or seated with 90° knee flexed. TB technique was applied first and directed onto patellar tendon. Began at the junction of tendon with the tibial tuberosity and the fibres were pushed back together in a distal to proximal direction. Following TB technique ,patient was asked to show where the knee still hurts when he makes sweeping motion along the tendon TB technique was repeated. And when a finger was pointed to a spot of pain, then continuum technique was repeated. In continuum technique the continuous pressure given with thumb at point and then release. The FDM was given for 3 sessions per week for 3 weeks.



Figure 4.1

5. Post Outcome Measures (After 3 weeks)

- **Range of Motion**

KNEE JOINT	ROM
Flexion	0°-120°
Extension	120°-135°

- **Visual Analogue Scale – 2.2**



- **Wall Slide Test - Grade 4**

6. Timeline

Events	Date
Injury to Right Knee	28 th October 2021
Diagnosed with OSD	2 nd February 2022
Physiotherapy Treatment	4 th February 2022 to 25 th February 2022

7. Discussion

This study of Fascial Distortion Model effect on Osgoodschlatter Disease was done on a 13 year old boy who is kickboxing player. After 4 months of injury patients didn't get any relief in the pain. He had taken Physiotherapy in form of Fascial Distortion Model by triggerband and continuum distortion and cryotherapy was also given. After 3 weeks of intervention results showed that patient had decreased in pain intensity, Improvement in ROM and significant improvement in muscle strength. patients has also started practice with low load exercises. There are studies shows effect of FDM on medial tibial stress syndrome ,ankle sprain,neck pain etc. FDM helps in improving the range by treating the adherent fascia.Fascia is a superficial structure which is important in maintaining proper function of the soft tissue as well as bony structures. When this adhesions removed it gives space to other structure and the alignment improves which lead to improvement in function. This study can be done with more patients to know the better improvement.

8. Conclusion

This study shows that FDM is effective in reducing pain, improving ROM and physical function in case of Osgoodschlatter disease.

9. References

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