

Case Study**THE BIO-MECHANICAL CORRECTION EXERCISES IN PES ANSERINE BURSTITIS****Asawari Patil¹, Dr. Bodhisattva Dass¹, Dr. Rinkle Hotwani¹, Chaitanya A. Kulkarni^{2*}, Waqar M. Naqvi¹, Om C. Wadhokar²**

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ABSTRACT**Introduction**

In pes anserine bursitis patient complaint of medial side knee pain which is in inflammatory condition. The case report aims is to present evaluation & treatment of young female who's working in the medical field which majorly involved long-standing. In addition to traditional methods of treatment, we focused on her muscle strength & biomechanical correction to improve her ADLs. A 27-year patient came to OPD with severe pain, swelling, tenderness which affected her daily functional activity. In pes anserine bursitis improvement of whole biomechanics is very important. To improve the biomechanics of the hip, knee, ankle, core we started planning 9 days strengthening program. Initial 3 days, the patient had severe pain & swelling over the inner side of the knee. We explain the effect of exercise to the patient & asked her to avoid the brace. Initially, due to this problem list, we gave her simple exercise with that cryotherapy & electrical modality to reduce the symptoms. In the next 7 days, we focused on improving the all-affected muscle strength, in this patient we had to correct the overall biomechanics to improve quality of life. We focused on strengthening core muscles, back muscles & all the weak muscles. Initially, we started with Thera Band, then with weight cuff & progress with Bosu ball training for balance & proprioception section. In addition to traditional method the strengthening exercises & biomechanical correction of lower limb showed early recovery.

KEYWORDS: Strengthening exercises, biomechanical correction, inflammatory condition.**DURATION:** Received- 13/05/2021, Reviewed- 19/05/2021, Revised/ Accepted- 30/05/2021**CORRESPONDENCE:****Chaitanya A. Kulkarni***✉Chaitanya.k@dmimsu.edu.in,**Address -** Ravi Nair Physiotherapy College, Datta Meghe Institute of Medical Sciences, Wardha, India.**INTRODUCTION**

Bursa is a fluid filled sac & these bursa don't allow friction over bone directly due to muscles overuse, it also produced synovial fluid.⁽¹⁾ Which forms under the skin fold & over the joints they act like a cushion.⁽²⁾ It is a group of the bursa in which the 3 groups of muscles tendon attached. There are four bursas, which are suprapatellar tendon bursa, prepatellar bursa, infrapatellar bursa, pes anserine bursa. The pubic bone, ASIS & ischial tuberosity combine to form a triangle which is called as hip stability tent effect.⁽³⁾ From this triangle by posterior compartment semitendinosus, by medial compartment sartorius & by anterior compartment gracilis muscles arise. Two inches below the medial knee joint line these muscles are inserted between the pes anserine bursa, in an obese person pes anserine bursitis is commonly seen because of hip instability.⁽⁴⁾

The prevalence of fluid-filled pes anserine bursitis as detected on MRI is 2.5%. Pes anserine bursitis may cause because of trauma, repetitive moment, aging, injury, and obesity, muscles of leg tightness or weakness & posture.⁽⁵⁾ Swelling, tenderness & knee pain are common clinical findings seen in this patient. This report presents the effect of biomechanical correction in pes anserine bursitis, the physiotherapeutic intervention in young working woman patient.

CASE PRESENTATION

The 27-year-old female student come to MGM physiotherapy department with the complaint of difficulty & pain during left knee moment, as 1 year back before coming to MGM hospital she had COVID duty, she had to stand for a longer duration, from past few years her weight also increased by 5 kg, so due to long-standing she felt severe pain in the knee, she went to nearby hospital doctor gave some medication & suggest for tenor knee immobilizer brace & rest to her, but she didn't feel relief. Her intensity of pain increased after the application of the brace, she also started complaining of lower back pain. The patient comes with a complaint of chronic pain, swelling over the inner knee area. At 1st visit she was not able to walk because of severe pain, during this she rated her pain 8/10 on the numeric rating scale (NPRS) & 3/10 on the numeric rating during rest. Her pain was intermittent in nature & she complains of sharp shooting pain. During activity it gets aggravated & during rest she felt relief.

CLINICAL EXAMINATION

On her initial examination, her posture was affected, pain & swelling was commonly seen over the inner surface of the knee, grade 3 tenderness over the inner side of the knee, her knee flexion, extension & hip flexion, abduction during active

as well as passive range of motion was completed & painful. Manual muscle testing for knee flexors (hamstrings), extensors (quadriceps), hip abductor (gluteus medius, minimums, tensor fascia latae,) flexors (iliacus, psoas major) was grade 4 manual muscle we also check her core strength which was also graded 4.

DIAGNOSIS

Based on subjective & objective examination patient was diagnosed with pes ancerinus bursitis.

PROGNOSIS

The patient’s prognosis was good; she is belonging from the medical field so she was well oriented & educated. She was very cooperative. She was actively participating in our exercise protocol.

THERAPEUTIC INTERVENTION

For this patient, we arranged 9 days physiotherapy program. During the first two days she had severe pain so we started focusing on pain & daily activity so initially, we started cryotherapy & IFT for 15-20 min we also gave ergonomic advice to her, we asked her to avoid a brace and started active ranges exercise.⁽⁶⁾

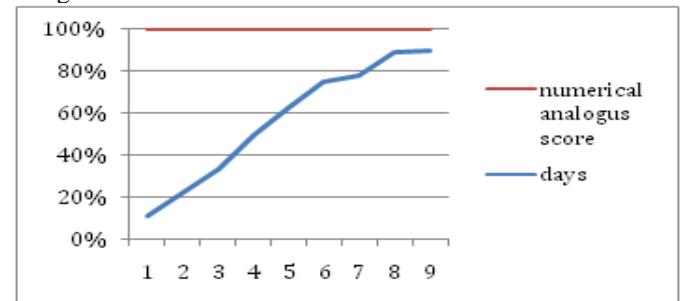
After two days we were continuing with the same protocol but that on the third day we started resisted isometric exercises, initially 5 repetitions 3 sets were suggested according to patient capacity. From day four of treatment, we progressed & started adding strengthening exercises. After resisted exercises, we progressed for TheraBand exercises.⁽⁷⁾ We strengthen the core, pelvic, hip flexors, and extensor muscles.⁽⁸⁾ At last, we started balance training on Bosu ball & tilt board. The following table shows day-wise muscle exercises (table 1).⁽⁹⁾ In the last session, we introduced her home exercised protocol & asked her to come after 15 days for follow-up.⁽¹⁰⁾

Table 1: Day wise exercise protocol

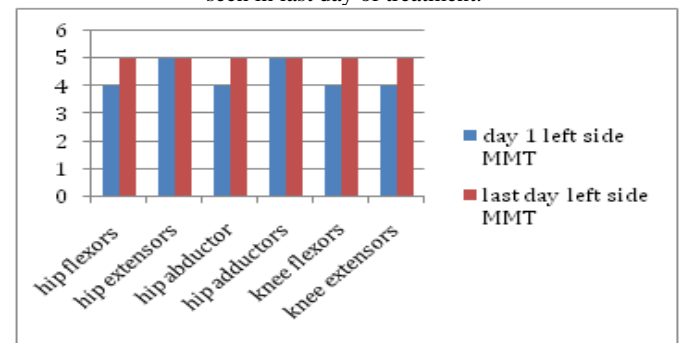
Days	Exercises	Sets	Repetitions
1	Knee active full ranges exercises, Isometric quadriceps settings.	2	5
2	Knee active full ranges exercises, Isometric quadriceps settings.	2	5
3	Resisted isometric exercises for lower limb, Half squat, walking.	3	10
4	Hip, knee flexion, extension, abduction adduction exercises Using TheraBand, terminal knee extension exercises (SLR with roller, mini ball).	3	10
5	Side walk, front walk (add resistance band at ankle, knee).	3	10
6-7	Forward lunges, bilateral squats (bosu ball training) with support. Flexion, extension, abduction, adduction with weight cuff.	3	10
8-9	Planks, physio ball side lying pelvis static holds, hold Single leg squat (bosu ball).	2-4	5-10

Follow-up and Outcomes

As compare to day one patient feel a pain-free moment on her last visit, in the last visit the intensity of pain was also reduced its 1/10 NPRS after exercise & 0/10 during rest & other times. The daily activity her are all improve now & her daily activity was hampered because of her condition now this all are normal. Now she can walk independently without a brace, even her strength was improve. The following graphs (a) show the difference between her day one & last day numerical pain rating score.



Graph A: Showing numerical analog score in this 90 % recovery seen in last day of treatment.



Graph B: Showing strength of both initial 1st visit & last visit of left side.

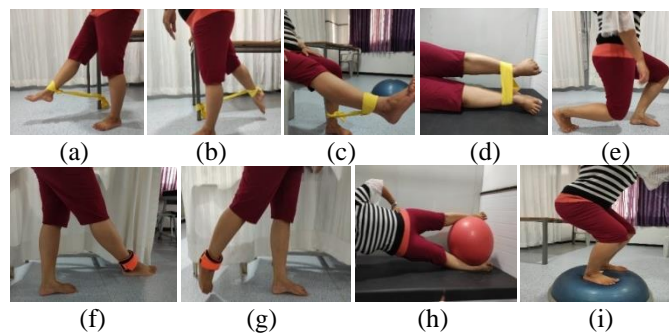


Figure:
 a) b) Hip flexion, extension exercise (TheraBand).
 c) Knee flexion, extension exercise.
 d) Hip abduction exercise.
 e) Lunges
 f) g) Hip flexion extension exercise (weight cuff)
 h) Physio ball side lying pelvis static holds.
 i) Squat without support (using bosu ball)

DISCUSSION

Rennie WJ et al 2015 report the prevalence rate of pes anserine bursitis in the symptomatic adult population. According to this study physiotherapy helps to treat pes anserine bursitis, they used investigation, clinical findings for

research, according to the study. Tenderness, swelling, pain are the common symptoms seen in this condition.

Alvarez-nemegyei j. et al 2007, they report in their study that risk factor for typical pes anserine bursitis, which may cause because of collateral instability. According to these findings like varus knee deformity, anteroposterior instability, collateral instability & hind foot malalignment can affect mature women.² In Mun JU et al 2017, a case report reported that the effect of polydeoxyribonucleotide injection on pes anserine bursitis, according to this PDRN injections was a very effective method to reduced bursitis pain.³ Ferber R et al 2015 reported strengthening of the hip and core versus knee muscles for the treatment of patellofemoral pain. They treated patellofemoral pain, function, strength by using rehabilitation protocol which involves hip & knee.⁴

Gluteus is the largest muscle & strengthening to this and core muscles can help to stabilize pelvic also helps in biomechanical correction & it reduced the loading force on the knee joint. The condition where gluteus muscles, core muscles are weak rotates thigh inward, this abnormal posture may put stress on knee which may cause knee deformity. In every strengthening exercise, we make sure that the posture of the patient will be correct to reduce the other complication.

PATIENT PERSPECTIVE

As compared to the initial session patient recover very fast her initial pain rating was 8/10 numerical rating scale on activity & at the last session, it was 2/10 after exercises. Even her muscle strength also improve & we also noted one thing her moment was pain-free.

INFORMED CONSENT

Consent had been taken by patient.

REFERENCES

1. Rennie WJ, Saifuddin A, 2005. Pes anserine bursitis: incidence in symptomatic knees and clinical presentation. *Skeletal Radiol.* 34(7):395-8.
2. Alvarez-Nemegyei J, 2007. Risk factors for pes anserinus tendinitis/bursitis syndrome: a case control study. *J Clin*

Rheumatol Pract Rep Rheum Musculoskelet Dis. 13(2):63-5.

3. Mun J-U, Cho HR, Bae SM, Park SK, Choi SL, Seo MS, et al, 2017. Effect of polydeoxyribonucleotide injection on pes anserine bursitis: A case report. *Medicine (Baltimore).* 96(43):e8330.
4. Ferber R, Bolgla L, Earl-Boehm JE, Emery C, Hamstra-Wright K, 2015. Strengthening of the hip and core versus knee muscles for the treatment of patellofemoral pain: a multicenter randomized controlled trial. *J Athl Train.* 50(4):366-77.
5. Bais A, Bawiskar D, Naqvi WM, Sahu A, 2020. A case study on the impact of physiotherapy on unilateral foot drop after lumbar fusion and discectomy. 7.
6. Bawiskar DP, Bais AS, Naqvi WM, Sahu A, 2020. Physiotherapy Approach towards a Typical Case of Injection Induced Radial Nerve Palsy Presenting as Wrist Drop. 9(22):3.
7. Dhole R, Jaiswal S, Naqvi WM, Sahu A, 2021. Physical Therapy Rehabilitation and Care in Post-Operative Trans-Tibial Amputation Patient. *Indian J Forensic Med Toxicol.* 15(1):618-21.
8. Bhamral MK, Naqvi W, 2021. A Study Protocol for Checking Efficacy of Microsoft Kinect Azure for Evaluation of Spatial Parameters of Gait in Normal Healthy Population. *Indian J Forensic Med Toxicol.* 15(1):1728-31.
9. Bhavé SM, Damke US, Chitale NV, Naqvi WM, 2021. Correlation of BMI with Dynamic balance using Y-Balance Test in Young Adults with Flexible Flat Foot: A Pilot study. *Indian J Forensic Med Toxicol.* 15(2):871-4.

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