



## PHYSIOTHERAPY MANAGEMENT ON PES ANSERINE BURSITIS CASE: A CASE STUDY

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### ABSTRACT

**Introduction:** Pes Anserine Bursitis (PAB) is an inflammation of pes anserine with the prevalence of this condition is 2.5% during 1998 to 2004 at a tertiary orthopaedic centre in United Kingdom. But, there is no exact number of pes anserine bursitis worldwide. The study cases of PAB with history of post knee arthroscopic surgery is limited. Moreover, PAB without any symptoms of inflammation except pain.

**Clinical Presentation:** A man, 28 years old, actives in futsal and diagnosed with pes anserine bursitis, having only one session of physiotherapy for 30 minutes by given therapy with an ice pack, ultrasound, gun massage, isometric exercise, and TENS. It is given once a week for one week only.

**Management and Outcome:** Physiotherapy management such as ultrasound, gun massage, isometric exercise, and TENS could reduce pain on pens anserine bursitis problems. After follow 7 days of physiotherapy's session, The NRS scale reduce from 4 to 0.

**Discussion:** In this case, due to the patient's sport activities, it could affect the perform of pes anserine-forming muscle. It could make the bursa inflammation and pain in the medial knee. After seventh day treatment, the pain was disappeared. Moreover, the patient did not have any functional limitation, decrease on strength muscle and range of motion, or any change of gait. A case study of a 79-year-old female with pes anserines bursitis who had undergone knee arthroplasty 13 years prior. She had knee pain for a year without any symptoms of infection, inflammation or history of trauma. She was treated with a combination of strengthening exercise, stretching exercise, and local steroid injection.

**Conclusion:** The physiotherapy program could reduce the pain after having one therapy on the pes anserine bursitis problem.

**Keyword:** *Pes anserine bursitis, physiotherapy, pain*



## Background

Pes Anserine Bursitis (PAB) is an inflammation that occurs in the bursa at the insertio of sartorius, gracilis, and semitendinosus muscle (Rennie and Saifuddin). The three muscles are the main flexor of the knee which has a role in internal rotation and valgus stress (Alvarez-Nemegyei and Canoso).

The exact number of pes anserine bursitis worldwide is unknown because studies on its prevalence is limited. But in a retrospective review, pes anserine bursitis has prevalence of 2.5% in symptomatic adults on MRI at a tertiary orthopaedic centre in United Kingdom (Rennie and Saifuddin). Moreover, PAB is more common in middle-aged women. It is caused that women have wider pelvis so that knee angle in the frontal plane that causes greater pressure on insertio area from pes anserine (Helfenstein and Kuromoto). The etiology of pes anserine bursitis includes trauma, retraction of the posterior lower limb, bone exostosis, irritation of the suprapatellar plica, the injury of medial meniscus, pes planus, genu valgum, an infection, and foreign body reaction (Huang et al.).

The purpose of this article was to report the results of a physiotherapy program to the patient with pes anserine bursitis.

## Case Presentation

The patient was a 28 years old man. He works as a physical education (PE) teacher. He also actives in futsal and has a symptom of pain in the right medial knee. The patient feels pain in the medial knee when the knee extension along with dorsiflexion of the ankle from the knee flexion. On the palpation examination, there was pain in the pes anserine. The patient described pain on a scale of 4 out of 10. Previously, the patient had the same pain approximately 5 months after having arthroscopic surgery on the *Anterior Cruciate Ligament* (ACL). At that time, the patient was in rehabilitation for his ACL. After having ACL rehabilitation for one year, the patient could play futsal again. The pain in pes anserine disappeared, yet about 1 year later, the pain in pes anserine was returned. Based on the examination, there was no erythema, oedema, and temperature change. Moreover, there is no limitation of range of motion and decreased muscle strength. On the examination of ligaments or meniscus such as anterior and posterior drawer test, Apley's test, varus or valgus test, and McMurray test on the right knee did not cause any stretch or

tear. The blood pressure was 120/70 mmHg. There was muscle spasm of the adductor knee and hamstring.



## Management and Outcome

The patient attended only one physiotherapy session for around 30 minutes. First, the patient was given an ice pack on the medial knee for 10 minutes as a local anesthetic. Then, giving an ultrasound for 5 minutes in pes anserine with the moderate intensity and the frequency is 3 MHz. Afterward, using a gun massage on muscles of the medial knee and hamstring for 10 counts each. It was for reducing spasms on muscle so that it can reduce friction in the pes anserine. Next, giving isometric exercise on the hip adductor, quadriceps, and hamstring. Isometric exercise was done with the ratio of 2:1 or 10 seconds of muscle contraction and 5 seconds of rest. Isometric exercise plays a role in reducing pain and inflammation. Last, giving Transcutaneous electrical nerve stimulation (TENS) in the area of pes anserine for 10 minutes. For a home programme, the patient was asked to do isometric exercise and stretching on the lower extremity.

The result of pain using the Numeric Rating Scale (NRS) was a subjective measuring instrument, which was the individuals rate their pain on 11 points numeric scale. The scale ranges from 0 (no pain at all) up to 10 (very painful) (Jensen et al.). The pain score decreased after one therapy. The previous NRS score was 4. After 7 days of therapy, it was decreased to 0. The patient reported that the pain decreased before day 7. In addition, the pain did not return on day 14.

Table 1. The Pain scale using Numeric Rating Scale

Pre	Post		
	Day 1	Day 7	Day 14
4	4	0	0

## Discussion

In this case, the patient initially complained of pain in the medial knee when palpation and knee extension movements along with ankle dorsiflexion movements from knee flexion position. It is most likely because the patient was active in playing futsal so that there was an overuse of the pes anserine-forming muscle. It causes increased friction at the tendon insertion which is covered by the bursa. So, the bursa gets inflammation. The

inflammation causes pain in the medial knee. After the treatment is done, the pain does not decrease immediately, but a few days after treatment, the pain decreased progressively.



On follow-up day 7 after treatment, the scale of pain decreased to 0 out of 10. Even on day 14, the pain did not return. It is probably because the appearing symptom is mild. Moreover, the patient does not experience a functional limitation, decrease on muscle strength and range of motion, or any change of gait.

Kamudin et al. report in his study, a 79-year-old female with pes anserines bursitis who had undergone knee arthroplasty 13 years prior. She had knee pain for a year without any symptoms of infection, inflammation, or history of trauma. She was treated with a combination of strengthening exercise of quadriceps and hamstring muscle, stretching exercise, and steroid local steroid injection. After steroid injection, the pain was reduced immediately. However, she was advised to continue strengthening and stretching exercise. During follow up at 2 months, 6 months and a year, she was pain free.

In the research of Rio et al., isometric contraction can reduce pain quickly about 45 minutes after intervention in the tendinopathy patellar case. It was probably occurred because of releasing intracortical inhibition which is connected with pain reduction and bounding in the mechanism which is underlying the change of pain.

For TENS and ultrasound, Sarifakioglu et al. studied 60 osteoarthritis patients with pes anserine tendino-bursitis. 30 patients were given hot packs, ultrasound, and TENS meanwhile, other's group were given corticosteroid injection. After 8 weeks, there was a decreased in pain, stiffness, and improvement in functional ability as measured with The Western Ontario and McMaster Universities Arthritis Index (WOMAC) and Up and Go test in both groups. However, there was no significant difference between the two groups.

According to Konrad et al. in his research using handheld percussive massage on plantar flexor m gastrocnemius in a sitting position and the ankle at 20° plantar flexion. The result showed there was an increase in the range of motion in maximum dorsiflexion of 5.4° on the first group, but there was no Maximum Voluntary Contraction (MVC). The increase in range of motion can be assumed because there is reducing stiffness muscle.

## Conclusion

This case shows clinical presentation on pes anserine bursitis case and physiotherapy



treatment using a conventional method such as ultrasound, TENS, and isometric exercise. In addition, giving a gun massage which is quite popular among physiotherapists, especially in Indonesia. Based on the results, physiotherapy management can reduce pain with moderate actuality and there is no functional irritation on pes anserine bursitis case. There are some limitations to this research. First, duration of treatment only one session. Second, there is an inability of the researcher to limit the type of therapy. So, it is difficult to determine which right therapy for pes anserine bursitis case.

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