
Physiotherapy Management After Washout Arthroscopy Surgery Cases for Osteoarthritis Genu Sinistra Patients

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Abstract: Osteoarthritis cases are one of the degenerative diseases caused by the reduction of joint synovial fluid and the progressive loss of articular cartilage. Currently available therapies focus on symptomatic treatment and prevention of the disease from worsening. In this day became necessitates surgical washout arthroscopy, which is used to clear infection in the original joint or after arthroplasty. After surgery, rehabilitation from physiotherapy is needed to reduce pain, increase joint range of motion, increase muscle strength and restore functional ability. Method: The patient is a 53-year-old woman complaining of pain, weakness muscles and limitation joint range of motion in the left knee after arthroscopic washout surgery 1 month ago. Physiotherapy management 4 weeks of intervention in 2 sessions with ice compress, electrotherapy with TENS and US and exercise. Result: TENS and Ultrasound currents showed a decrease in sensation felt, increased muscle strength and joint of range motion. The provision of electrical stimulation interventions using tens and ultrasound currents for 4 weeks with 2 meetings in postoperative washout arthroscopy can be concluded to reduce pain sensation, increase the scope of joint motion and increase muscle strength in the hip.

Keywords: Physiotherapy; Washout Arthroscopy; Osteoarthritis Genu

INTRODUCTION

Osteoarthritis is one of the top ten diseases causing disability in some countries (citation s41413). The prevalence of osteoarthritis in Indonesia reaches 8.1% of the total population 80% will experience limitation of motion, and 25% cannot perform daily activities. It is estimated that 9.6% of men and 18% of women over 60 years of age experience signs of osteoarthritis symptoms. One of the joints that is prone to osteoarthritis is the knee joint (Hardiyanti et al., 2020). The knee joint itself is the joint that bears the greatest burden among all joints because it supports the weight of the body (Geng et al., 2023).

The percentage incidence of osteoarthritis is often found in elderly people. Osteoarthritis cases are one of the degenerative diseases caused by the reduction of joint synovial fluid and the progressive loss of articular cartilage (Hsu & Siwiec, 2024). Risk factors for genu osteoarthritis are obesity, hormones, vitamin deficiencies and even occupational factors. There are clinical signs and symptoms experienced, namely joint stiffness, joint pain and joint dysfunction, but the main problem for most patients is pain or pain in the joint (Ayu, 2018).

Currently available therapies focus on symptomatic treatment and prevention of the disease from worsening (Geng et al., 2023). However, due to the progressive nature of osteoarthritis genu, these initial measures become ineffective for most patients, in terms of pain control, functionality and overall quality of life (Lazic et al., 2014). This necessitates surgical washout arthroscopy, which is used to clear infection in the original joint or after arthroplasty (Ang, 2018).



After surgery, rehabilitation from physiotherapy is needed to reduce pain, increase joint range of motion, increase muscle strength and restore functional ability (Robinson et al., 2019). Modalities from physiotherapy can include ice compresses with the aim of reducing postoperative swelling, giving tens and ultrasound to reduce the sensation of pain felt, and giving exercise therapy to increase the scope of joint motion.

METHODS

Case Description

The patient is a 53-year-old woman complaining of pain in the left knee after arthroscopic washout surgery 1 month ago and just removed the stitches 1 day ago. Before surgery, the patient could not sit on her knees. Initially, the patient had fallen 10 years ago then caused complaints of pain. Now the patient walks using a tripod.

Examination

Observations made when the patient first came to physiotherapy were that the patient walked on one side, used a walking aid with a tripod, there was a change in walking pattern, there was plaster on the postoperative suture, and the knee looked swollen. There was tightness in the hip adductor, tightness in the sinistra knee joint, oedema and quadriceps weakness. For joint movements, the patient was unable to perform flexion-extension, adduction-abduction, hip internal-external rotation, knee flexion-extension, dorso-plantar flexion, and ankle inversion-eversion.

Method

Assessment and examination were carried out before intervention to diagnose physiotherapy and prognosis. As directed by the doctor, therapy was given 4 times for 1 month. Evaluation is given before and after the intervention is carried out using the Numeric Rating Scale to measure pain, Manual Muscle Testing to measure muscle strength and a Goniometer to measure the limitation of the scope of motion of the joints.

Intervention

The application of ice packs has beneficial effects especially when there is severe injury and swelling which is a factor in recovery after soft tissue injury (Wang & Ni, 2021). The patient sits comfortably then we apply an ice pack to the swollen area for 10-15 minutes (Mutlu & Yılmaz, 2020). The administration of TENS combined with ultrasound to help reduce pain levels and improve patient functionality (Sayilir, 2018). Exercise therapy is also given in the form of knee positioning, heel slide exercises, standing exercises, non-weight bearing walking exercises, muscle strengthening exercises, joint range of motion exercises, joint mobility exercises and Lymphatic NMT.

RESULT AND DISCUSSION

The results of 4 weeks of intervention in 2 sessions with electrical stimulation interventions using TENS and Ultrasound currents showed a decrease in sensation felt from 5 to 4 at the fourth meeting, tenderness in the area of m. quadricep and m. adductor longus and in-motion pain decreased at meeting 5. quadricep and m. adductor longus and in-motion pain decreased at the 5th meeting.

Tabel 1. Numeric Rating Scale Evaluation



NRS	P0	P1	P2	P3	P4	P5
Pain	3/10	3/10	3/10	3/10	2/10	2/10
Motion pain	6/10	6/10	6/10	6/10	6/10	5/10
Pressure Pain	5/10	5/10	5/10	5/10	4/10	4/10

The results of measurements carried out in postoperative cases of atroplastic washout using the ballotement test and varus / valgus examination obtained negative results. In contrast, the measurement of the scope of joint motion has changed on the fourth day after treatment. While the muscle strength of m. adductor longus and m. quadricep hip increased on the dextra side to 5 and the sinistra side to 3 at the 4th meeting.

Discussion

Genuesal osteoarthritis has symptoms in the knee characterized by pain, loss of knee joint function, and loss of functional activity. To prevent progressive disability, patients and doctors turn to surgery, one of which is the arthroscopic washout method (Winter et al., 2017). Arthroscopic washout is one of the surgical procedures in patients with prolonged knee pain and visible degenerative lesions in the cartilage, meniscus and others associated with genu osteoarthritis (Thorlund et al., 2015). After the procedure, physiotherapy is needed for joint, muscle and functional activity rehabilitation.

The results of the intervention of 4 times physiotherapy by providing ice compress interventions, providing modality tools in the form of TENS and Ultrasound and exercise therapy are shown by the reduced pain felt by the patient. This is in line with the opinion of Watkins et al. (2014) that cold compression therapy directly addresses the swelling, inflammation and pain associated with these injuries, this modality has been extended to the postoperative management of various orthopaedic procedures (e.g., knee arthroplasty) where surgical tissue damage produces similar but often more severe results. The intervention is effective if applied immediately after the injury or at the end of the procedure. According to Karypidou et al. (2021), Electromagnetic has analgesic, anti-inflammatory, and anti-swelling actions and causes vasodilation so that it can reduce pain.

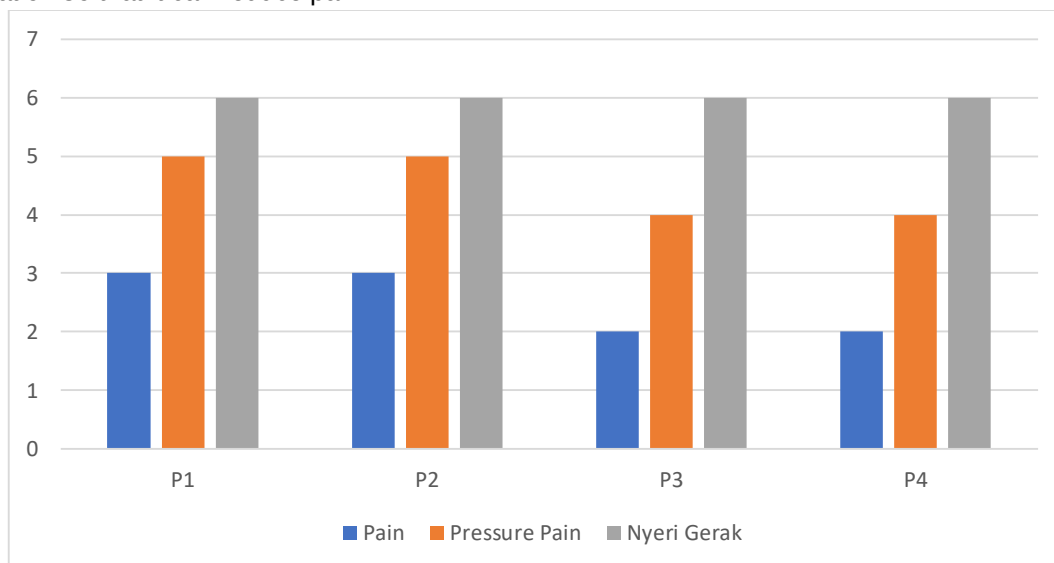


Figure 1. Numeric Rating Scale



Recovery using ice packs also has a function on muscles it can increase muscle strength and function (Roberts et al., 2014), as well as physiological effects such as reducing inflammation, muscle spasm, and metabolic needs (Malanga et al., 2015). Electrotherapy modalities such as TENS also function to reduce inhibition can help increase muscle activation (Sartori et al., 2024), combined with ultrasound which has ultrasonic wave beams to move biological fluids, which can increase cell membrane permeability, optimize local metabolism and encourage cell reorganization and regeneration resulting in fracture repair, wound healing, increased muscle extensibility and increased muscle strength (da Silva et al., 2022). Increasing muscle strength can also be done by doing exercise therapy (Nijs et al., 2015).

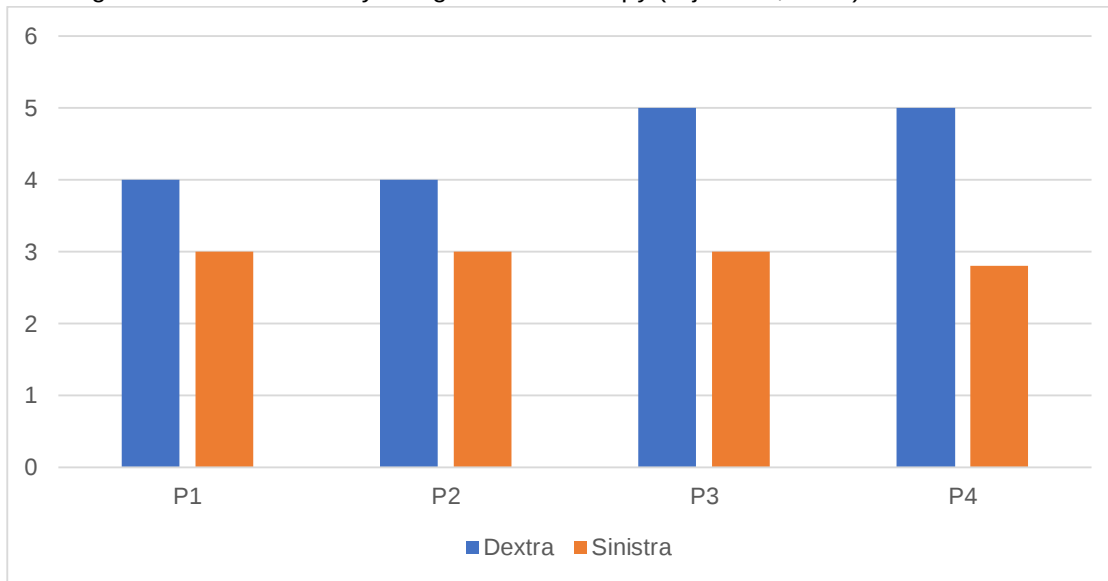


Figure 2. Manual Muscle Testing

There was also an increase in the range of motion of the genu joint in the patient, which was measured using a goniometer so that the results on the first day were S: 100-0-60 then when the fourth physiotherapy was obtained, the results increased S: 105-0-70 this is due to the provision of various exercise therapies, it knee positioning, heel slide exercises, standing exercises, non-weight bearing walking exercises, muscle strengthening exercises, joint range of motion exercises, joint mobility exercises and given Lymphatic NMT. In accordance with the opinion (Zeng et al., 2021) that physical exercise from physiotherapy can reduce joint stiffness, joint dysfunction and increase joint range of motion as well as according to Armijo Olivo et al. (2016) that joint mobilization, physical exercise which is increasingly routinely carried out will have a positive impact on restoring joint range of motion will return to normal, stimulate synovial fluid production, and reduce pain. The limitation of the study is the time of physiotherapy which is only 4 sessions for 2 weeks, so it cannot evaluate the patient until the patient can return to normal activities. Functional activities have also not been measured using functional scale measurements for the knee



CONCLUSION

The provision of electrical stimulation interventions using tens and ultrasound currents for 4 weeks with 2 meetings in postoperative washout arthroscopy can be concluded to reduce pain sensation, increase the scope of joint motion and increase muscle strength in the hip.

AUTHOR CONTRIBUTION

Laksmi Dewi Adzillina is researcher main choose topic, write papers. Mianti Nurrisyky Sutejo is collect and review of study documents.

CONFLICT OF INTEREST

Writer state no there is conflict interest in writing this.

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