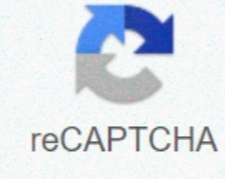




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## Cross friction massage ankle

Mobarakeh M, Mehdi, Hafidz H. J. O. A. Effect of Friction Technique on Ankle Sprain Grade II Treatment. Biomed Pharmacol J 2015;8( 2) Manuscript received on :Manuscript accepted on :P published online on :09-01-2016 Plagiarism Check: Yes How to Citeclose | Publication History includes views: (Visited 7,116 times, 1 visits today) PDF Downloads: 1792 Mohammadi Mobarakeh, Mehdi and HJ Omar Abdul Hafidz Faculty of Bioscience and Medical Engineering, Centre for Sport Innovation and Technology, University Technology Malaysia, Malaysia. DOI - Abstract ankle thrust is the most common injury in sports activities. When this has happened, accurate diagnosis needs to be taken care of. Failure to do so will lead to ligaments sprawling, instability and losing balance especially in walking. This study examines the effect of friction technique on sprained ankle (grade II). Friction is one of the most suitable techniques in massage for the removal of adhesion. 24 young athletes with ankle spout grade II were selected among 100 patients based on MRI testing. Patients were divided into two groups. Experimental group received sports massage. Another group is a control group or non-training group. Each group consists of 12 patients who suffered from single-spout grade II. The massage group received the 15 minute effleurage and friction massages on their ankles administered by a sports rehabilitation specialist and professional massage. The control group used single-brace. Effleurage technique has used as warming section. Data was analyzed using peddle-t-test. Findings show that treatment (massage) group had a major impact (P-value <0.05) compared to control group. The implications of this study provide this protocol as a most effective treatment for single spout grade II. Keywords Massage Therapy; Friction technique; Ankle sprain Download this article as: Copy the following to adopt this article: Mobarakeh M, Mehdi, Hafidz H. J. O. A. Effect of Friction Technique on Ankle Sprain Grade II Treatment. Biomed Pharmacol J 2015;8( 2) Copy the following to adopt this URL: Mobarakeh M, Mehdi, Hafidz H. J. O. A. Effect of Friction Technique on Ankle Sprain Grade II Treatment. Biomed Pharmacol J 2015;8( 2). Available from: Introduction Sprained ankle, also known as an ankle sprain, twisted ankle, rolled ankle, ankle injury or ankle ligament injury, is a common medical condition where one or more of the ligaments of the ankle are torn or partially torn[1]. A downsy is an injury to a ligament. Ligaments are strong tissue around joints that attach bones together and give support to joints. A ligament can be injured, usually stretched through during a sudden The ligaments on the side of the ankle are the ones most scattered[2]. Cause a damaged ligament caused swelling, and bleeding (bruises) around the affected joint. Movement of the ankle joint is painful if you have a sprained ankle[3]. Sprained ankles are the most common type of musculoskeletal injury seen by primary-care providers. More than 23,000 people every day in the United States require medical care for ankle thestifications [4]. Single thouts are common sports injuries, but also happen during everyday activities[5]. An unnatural twisting movement of the ankle joint can happen when the foot is planted awkwardly, when the soil is uneven, or when an unusual amount of force is applied to the joint. Expirements happen when the foot is rolled or turned outside movements that are considered normal for the ankle. An ankle thout usually occurs when a person lands from jumping or running on an uneven surface. If the ankle is placed in an abnormal position at the same time, then overstretching of the ligaments may occur. The ligaments of the ankle keep the ankle legs and joint in position, thus helping to stabilize the ankle joint. They protect the ankle joint from abnormal movement, especially turning, twisting and rolling of the foot[6]. Sports rehabilitation is an important part of treating sports injuries[7]. A rehabilitation programme aims to return the injured body part to normal function by gradually introducing it to movement and exercise[8]. With most sports injuries, it helps move the injured part as soon as possible to help speed up the healing process. Soft exercises should help improve the area's variety of movement. As movement becomes easier and the pain decreases, stretching and strengthening of exercises can be introduced. During the rehabilitation process, you should not try to do too much and too quickly. Start by doing regular repetitions of a few simple exercises before gradually increasing the amount you do[9]. Avoid painful activities and high intensity exercise until pain is removed, and full strength and flexibility have returned to the injured area [10]. Some coaches and experts in rehabilitation believe that massage is very advantage for the body before participating in training and physical activities. More especially massage is used as pre-exercise activities to improve performance, reduce the risk of exercise and muscle damage and sports rehabilitation programs. Massage is very good method of boosting blood flow to muscle and increase muscle temperature [11], so is appropriate for rehabilitation program[12]. Using massage can also reduce tissue adhesion and to improve muscle flexibility [13], which can help improve injury and remove risk factors [14]. Method In this study, effectiveness of massage therapy protocol on the patients with ankle thour II was determined by examining ROM, strength and balance in the sprained single grade II. This study was conducted on 24 male male aged 20-25. Patients were divided to two groups, including non-training group (control group) and experimental group (massage group) and each group contained 12 patients. Control group or not training group no performance any training, and just use arm to fix the joint and rest. In massage group applied effleurage massage for warm-up and then used friction massage over the injured ligaments. The duration of treatment was 8 weeks for both groups. Pre test and post testing done by evaluating ROM, strength and balance. Assessments have done by using goniometer to ROM, therapist tape to strength and bustle board to balance in pre test and post test phase (before and after treatment). The first test is evolution of the range of movement (ROM) test (Figure 1). Patients should do thrist reflection, plant arnexion, inversion and eversion and assess the ROM with goniometrics and record the results. Figure 1: Series movement (ROM) for single Click here to view figure Second pre-test is the muscle strength test performed using the therapeutic tape (Figure 2) and accounts the number of repetitions in each direction to evaluate single strength. This test performed with all the movements of ankle included: ad reflection, plantar bend, inversion and eternity. Ask patients sitting on the floor with straight leg, for thristiflexion, anchor the tape to the wall or chair and wrap it around the foot. Patient should pull his toes in the direction and slowly return to the starting position and repeat. For plantar bending, wrap the tape around the patient foot and he should keep the end in his hands. Then gently ask him to push toes and return to start position. For inversion and eversion, attach tape to safe object and end to front foot. Pull foot inwards and outwards and slowly return and repeat. Figure 2: Therapist tape reinforced test for ankle Click here to see figure Last training in pre-test is ankle balance test that is performed on woolly board (Figure 3) and meting has taken in one leg (scattered ankle) with open eyes position by calculating the time. Asked patients standing on the balance board with knees bent slightly, feet shoulder width apart and trunk upright. Maintain this position while balancing the board, trying to keep either side from touching the ground. Then stand on one leg in the middle of the rocker or woolly board, trying to hold either side to touch the ground while maintaining upright posture. Result Effect of massage therapy on ROM A paused samples t-test was conducted to compare massage group and control group in 8 weeks rehabilitation program. There is a significant difference in the results of thrist reflection in massage group (M = 26.52, SD=0.29580) and control group (M = 19.87, SD = 0. 17645) conditions; t(11)=74.561, p = 0.000. Also indicated there is a significant difference in the results of plantarflexion in massage group (M = 41.5000, 41.5000, and control group (M=36.9417, SD=0.14434) conditions; t(11)= 35.235, p = 0.000. When examining the inversion result, There is a significant difference in the results of inversion in massage group (M = 17.1833, SD = 0.79411) and control group (M = 13.6333, SD = 0.29644) conditions; t(11)= 14.708, p = 0.000. Furthermore, the results show that there is a significant difference in the results of eternity in massage group (M = 14.4500, SD = 0.23160) and control group (M = 11.3917, SD = 0.50715) conditions; t(11)= 16.810, p = 0.000. Result shows in Table (3.1). Hence, based on this finding, there is significant effect of massage therapy on improving ROM in single-spout grade II. Table 3.1: Pawed samples test from ROM in massage group compared to control group. Means N Std. Departure Std. Error means pair 1 post\_Dorsiflexion\_Massage 26.5250 12. 29580 .08539 Post\_Dorsiflexion\_Control 19.8750 12. 17645 .05094 Pair 2 Post\_platarflexion\_Massage 41.5000 12. 35675 .10299 Post\_platarflexion\_Control 36.9417 12. 14434 .04167 Pair 3 Post\_Inversion\_Massage 17.18 12 .79411 .22924 Post\_Inversion\_Control 13.6333 12. 29644 .08558 Pair 4 Post\_Eversion\_Massage 14.4500 12. 23160 .06686 Post\_Eversion\_Control 11.3917 12. 50715 .14640 Standard average of Dorsiflexion=24.68±3.25 Standard average of Plantarflexion=40.92±4.32 Standard average of Inversion=16.29±3.88 Standard average of Eversion=15.87±4.45 Pawed differences t df Sight. Average Std. Deviation Std. Fault means 95% Confidence Interval of the difference Lower Above pair 1 post\_Dorsiflexion\_Massage Post\_Dorsiflexion\_Control 6.65000 .30896 .08919 6.45370 6.84630 74.561 11. 000 Pair 2 Post\_platarflexion\_Massage Post\_platarflexion\_Control 4.56833 .44814 .12937 4.27360 4.84307 35.235 11 . 3000 Pair 3 Post\_Inversion\_Massage Post\_Inversion\_Control 3.55000 .83612 .24137 3.01876 4.08124 14.708 11. 000 Pair 4 Post\_Eversion\_Massage Post\_Eversion\_Control 3.05833 .63024 .18193 2.65790 3.45877 16.8 1 As 11.000 Effect of massage therapy on single strength As can be seen in Table 3.2 a paused samples t-test was conducted to compare massage group and control group in 8weeks rehabilitation program. There is a significant difference in the results of strength in massage group (M = 11.33, SD = 0. 888) and control group (M = 7.58, SD = 0.669) conditions; t(11)= 10.689, p = 0.000. From there, based on this finding, there is significant effect of massage therapy on improved strength in single spout grade II. Table 3.2: Pawed samples test of force in massage group compared to control group. Means N Std. Departure Std. Error means pair 1 Pre\_thera\_band\_Massage 2.58 12. 669 .193 pre\_thera\_band\_Control 2.50 12. 674 .195 Pair 2 Post\_thera\_band\_Massage 211. 33 12. 888 .256 post\_thera\_band\_Control 7.58 12. 669 .193 Suitable Samples Test Paired Differences t df Sight. (2-tail) Std. Deviation Std. Error means 95% confidence interval of the difference lower upper pair 1 1 pre\_thera\_band\_Control .083 1.165 .336 -.657 .823 .248 11. 809 Pair 2 Post\_thera\_band\_Massage post\_thera\_band\_Control 3.750 1.215 .351 2.9 4.522 10.689 11. 000 Effect of massage therapy on balance As can be seen in Table 3.3 a paused t-test was conducted to compare massage group and control group in 8weeks rehabilitation program. There is a significant difference in the results of balance in massage group (M = 6.83, SD=0. 937) and control group (M = 5.17, SD=0.937) conditions; t(11)= 5.863, p = 0.000. From there, based on this finding, there is significant effect of massage therapy on improved balance in single spout grade II. Table 3.3: Pawed samples test of balance in massage group compared to control group. Means N Std. Departure Std. Error means pair 1 Pre\_WBSA\_Massage .75 12. 754 .218 Pre\_WBSA\_Control 1.00 12. 739 .213 Pair 2 Post\_WBSA\_Massage 16.83 12. 937 .271 Post\_WBSA\_Control 5.17 12. 937 .271 Appropriate Samples Test Paired Differences t df Sight. (2-tail) Means Std. Departure Std. Error means 95% Confidence Interval of the difference Lower Upper pair 1 Pre\_WBSA\_Massage Pre\_WBSA\_Control -.250 1.055 .305 -.920 -.821 11. 429 Pair 2 Post\_WBSA\_Massage Post\_WBSA\_Control 11.667 .985 .284 1.041 2.292 5.863 11. 000 Finding and Discussion Although much research has been done on single rehabilitation, but because often from ankle thout in athletes and other people and because of the importance of being collaborative and it is harm there is still needed to do study on various rehabilitation techniques. Massage is the one of the most important rehabilitation technique used in this study. Massage is believed to benefit athletes by improving performance and recovery, as well as promoting recreation through biomechanical, physiological, neurological, and psychological mechanisms. The aim of this study was to investigate the effect of massage on improving balance after single-spout grade II rehabilitation. Massage has highly relationships with muscle and connective tissue relaxation so when muscle relaxed is capable of more stretching and lead to a long time will increase in ROM[15]. Effleurage technique as a warm-up technique elicits the relaxation response and increases blood flow to muscle and ligaments. After that, frictional technique used to remove adhesion from injured muscles and ligament. On the other hand, massage is associated passive movement in single joint. Passive movement contains all directions of single joint, including barren reflection, plantarflexion, inversion and eversion. Passive training helps to single muscles and ligaments to increase ROM by creating continuous stretches. The mechanical pressure of massage is generally used to treat fans or contracted connective tissue to restore fibres to a more normal alignment. The finding of study shown that massage has an excellent effect on muscle flexibility and and tissues that they have a high relationship with ROM and improve performance. According to the results and statistical data analysis, massage has suitable and meaningful influence on the extent of the movement of injured joint and is also an optimal treatment method for improving and enlightening spout grade II (P-Value &lt; 0.05). Effect of massage on ROM to Dorsiflexion with the average 26.52±0.29 is the largest after combined group. Also when evaluating the effectiveness of massage on ROM to Plantarflexion, the massage therapy group with the average 41.50±0.35 has the largest value after combined group. After examining the effectiveness of massage therapy on ROM, result showed that massage in Inversion with the average 17.18±0.79 and in Eversion with the average 14.45±0.23 had a major impact in increasing the ROM from single joint after release from single spathing grade II. As biomechanical effect of massage, the application of massage and mechanical pressure and stretching in tissues can be effective at reducing adhesion and stiffness and increasing muscle fulfil. The muscles and connective tissue are not yet at their full strength and the area remains subject to re-injuries. With stretching and strength training, pain gradually subsides, while strength and range of movement increase. Strength training is essential for the full recovery of the muscles and connective tissue. Strength training should start gently and increase progressively. When applying massage to improve muscle strength, actually patients are taken advantage of both internal and external resistance provided from therapist and muscle. This means that when therapist applied strength (External) patient makes the internal resistance and when patient tries to move the foot (Internally), face getting external resistance through therapist. Due to data analysis, the muscle strength in massage therapy group has improved more than control group. Result showed that massage therapy group with the average (M = 11.33, SD = 0. 888), the effects were significant. The sprained ligaments lose the ability to communicate effectively with brains. The result is decreased coordination of the ankle. On the other hand after ankle thestimation, instability of ankle joint because the ligament tears and laxity increased. As previously mentioned, massage is a very effective method of improving muscle strength and ROM, and both have a direct relationship with balance further mechanical pressure from massage helps to remove fans and muscle posma in order to more normal alignment. Therefore, when ROM, muscle strength and stability of single joint improve, consequently, balance will develop. Data analysis showed that massage therapy can be effective on single spout grade II and because of its significant effect on the factors associated with Grade II increased the rate of treatment. The results of the balance balance in massage group showed that the massage treatment group had a significant difference with the control group (P-Value <0.05). Further compared to the balance time before and after massage therapy, result has the significant effect on balance time than the control group (6.08±1.24). So massage therapy as a traditional therapy is effective method to ankle thoutification rehabilitation. As can be seen from data analysis, there is a significant difference between results from the ROM test, strength test (therapy tape) and balance testing (WBSA) after treatment and before that. Also the rate of improvement after treatment in control group is no comparable to massage group and this means that massage is a most effective rehabilitation method to improve single spout grade II as the bracing and not training method. Conclusion Although there are some studies on the effect of massage in ankle injuries, but most research is corroborator of effect of massage that has been used for centuries in an attempt to prevent and cure injuries [15][16][17][18]. The result of this research has shown that there is a significant difference between massage therapy and bracing in the treatment of single-spout grade II. In fact, increase in ROM, muscle strength and balance in massage group was much better than the non training (bracing) group. Study shows effectiveness of woolly board training in preventing functional instability, balance training in improving single joint proprioception and single leg standing It is recommended to use the massage to protocols in single spouting grade II. References W. Smith and S. F. Reischl, Treatment of ankle mentions in young athletes, Am. J. Sports Med., vol. 14, no. 6, pp. 465–471, 1986. Rasmussen, Stability of the single joint. Analysis of the function and traumatology of the single ligaments., Acta Orthop. Scanned. Suppl., vol. 211, pp. 1–75, 1984. T.-P. Fong, Y. Hong, L.-K. Chan, P. S.-H. Yung, and K.-M. Chan, a Systematic review on ankle injury and ankle dissolution in sports, sports. Med., vol. 37, no. 1, pp. 73–94, 2007. P. Gerber, G. N. Williams, C. R. Scoville, R. A. Arciero and D.C. Taylor, Persistent Disability associated with ankle spouts: a prospective investigation of an athletic population, Foot Ankle Int., vol. 19, no. 10, pp. 653–660, 1998. Moreira and F. 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