



Clinical Case Report Competition

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Second Place Winner

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The effects of massage therapy on a benign
vascularised fibromatosis: A case study

ABSTRACT

A 48-year-old female presented with a benign vascularized fibromatosis over the right fibular head. Her primary symptoms were aching around the tumor, limited right knee flexion, and emotional stress associated with the lesion. The objective of this study is to determine if massage therapy has an effect on the symptoms of a benign fibromatosis including the emotional impact experienced by the patient. Ten 90-minute treatments were administered over the course of 5 weeks. The subject's progress was monitored using pre and post-treatment assessments measuring range of motion in right knee flexion, girth measurement around the tumor, and personal interview. The tumor remained relatively consistent in size over the course of treatment but positive results were seen post-treatment in range of knee flexion and ease of movement. These positive effects lasted one to two days but were not sustained over a prolonged period of time. The patient reported a considerable reduction of stress levels.

Key Words: Fibromatosis, Massage therapy, decrease Stress, Knee Flexion

INTRODUCTION Benign aggressive fibromatoses are a rare tumor of fibroblasts that usually occur in the connective tissue sheaths next to skeletal muscle. They commonly occur in the abdominal region, plantar surface and palmar surfaces of the feet and hands. They are also referred to as fibromas or fibroids, particularly when found in the abdominal region. Histologically, these tumors are made up of fibroblasts, a connective tissue cell that secretes an extracellular matrix rich in collagen and other macromolecules (NLM, online). Although classified as benign, these tumors can secrete chemicals that promote angiogenesis that allow them to grow rapidly by creating their own blood supply to supply the cells with nutrients. This aggressive growth can have locally destructive consequences. Fibromatoses have the potential to interfere with adjacent structures such as muscles and bones or cause compression of nerves, vasculature, and lymphatic vessels. Despite their locally aggressive growth, fibromatoses are not considered a malignant tumor because they do not spread to distant sites through the blood or lymphatic system.

Traditional medical management of fibromatoses has been a mix of surgical and symptomatic treatment. Surgical excision of this type of tumor has a high rate of recurrence, often returning more aggressively than the original lesion. A “watch and wait” approach is usually applied to weigh the local destruction caused by the tumor with the risks of surgical excision. This study seeks to find out what effects massage therapy can have in the reducing physical forces acting on the tumor and the associated symptoms experienced by the patient.

CASE PRESENTATION The subject of this study was a 48-year-old female presenting with a benign vascularized fibromatosis over the right fibular head. The lesion appeared one and a half years previously and has not changed in size or severity since the onset of symptoms. Surgical intervention was not pursued due to the tendency of fibromatoses to recur after surgical excision (Allen, 225) and the risk of fibular nerve severance due to the tumor’s location. The patient’s primary complaint is a deep ache over and around the tumor site that increases when pressure is applied to the area. The patient reported pain and difficulty with activities that involve deep knee flexion such as squatting or walking up and down steep stairs.

The tumor had an insidious onset two years ago, growing to its current size of about a golf ball over the course of several months. While the patient feels that the tumor has been increasing in size, MRI scans have shown that it has remained relatively the same size over the past year. The

fibromatosis is approximately 6cm long (over the fibular head), 4 cm wide, and has a depth of about 3.5 cm. MRI scans were unable to distinguish whether the tumor sits on top of the fibular nerve or if the course of the nerve is passing through the center of the tumor. The patient reported no neurological symptoms. Increased heat over the tumor site could be palpated.

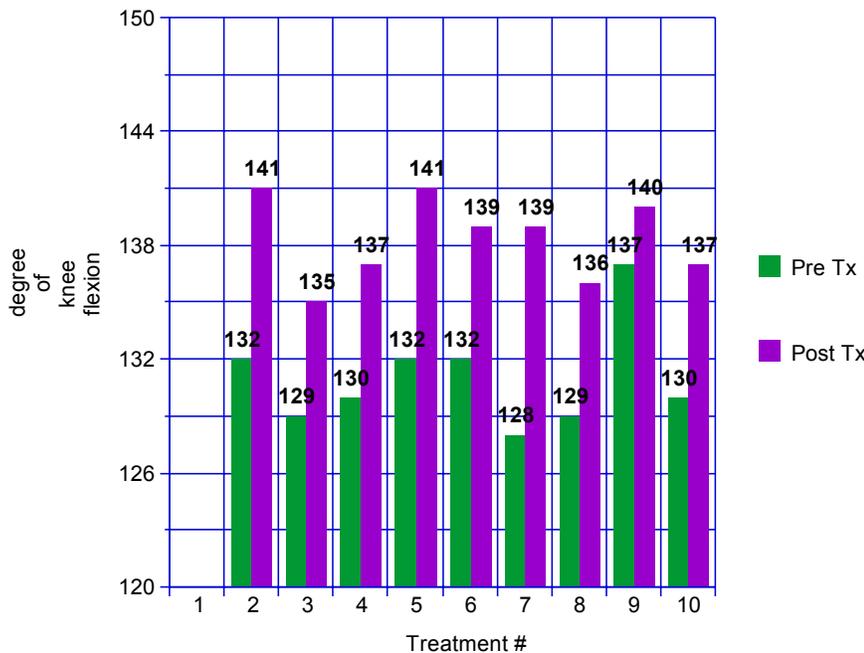
The patient expressed a disassociation with the area of the tumor, feeling that it was not really a part of her body. She had changed her clothing choices since the onset of the visibly noticeable protuberance, partly due to the discomfort associated with more restrictive clothing and in part to hide the tumor from view. She expressed self-consciousness at having it exposed to view. The client maintains an active and healthy lifestyle though reported high levels of stress associated with an upcoming cross-country relocation.

The patient reports having migraines 3-4 times per month that have been diagnosed by her doctor for which she takes prescription Sumatripan. She does not take any other medication and is otherwise in good health. The client maintains a healthy diet and maintains a schedule of moderate exercise 3-4 times per week. There is no known family history of fibromatoses or any other significant family history of disease or illness.

Postural analysis revealed right shoulder postural dysfunction that was insignificant to the client's fibromatosis. She presented with a step deformity of the right acromio-clavicular joint due to poor healing from a traumatic injury seven years previously. The right shoulder was moderately elevated and there was a significant hypertonicity in the right rhomboids. The patient does not experience any symptoms associated with these observations.

METHOD Measurements were taken at the beginning and end of each treatment for tumor girth and degree of right knee flexion. A goniometer was used to measure the knee flexion. A summary of the before and after measurements of right knee flexion can be found in Figure 1 below. A brief interview was conducted at the beginning of each session to assess the client's general wellbeing, stress, and pain levels.

Fig. 1: Right Knee Flexion Pre and Post treatment



Each session was 90 minutes long including assessment, hands on treatment time was about 75 minutes per session. A full body approach was used with more time and specific techniques dedicated to the right leg and structures affected by the tumor. Swedish techniques were applied to the back, neck, and unaffected leg to promote full body integration and encourage relaxation. A specific treatment protocol was not followed. Each treatment began with full body compressions and diaphragmatic breathing followed by relaxation techniques such as rhythmic rocking to decrease sympathetic nervous system firing and reduce stress. Rhythmic stroking, and kneading followed this. Other techniques such as myofascial release, trigger point therapy, or stretching were integrated into this portion of the massage on an “as needed” basis. Specific modalities were applied to structures that surround the tumor to decrease pressure to the area. These structures included quadriceps, hamstrings (especially biceps femoris), fibularis longus, triceps surae, iliotibial band, and the tibio-femoral joint. The techniques applied were myofascial release, joint mobilization, neuromuscular technique, trigger point therapy, and contract-relax stretches were applied along with Swedish massage. Majority of treatment time was focused on these structures with about an hour of each treatment being spent massaging the right leg. Homecare was given during the first few treatments but due to non-compliance by the subject, this aspect was removed from this case study.

Reduction of emotional stress associated with the tumor through relaxation and increased body awareness were primary goals of the study. This was achieved by having the patient's attention engaged in treatment and focused on the tumor. The client was instructed to look at the tumor and actively engage in the treatment. Methods to achieve this included looking at anatomy images with the patient and having her participate in a guided visualization through the areas of her body to which she feel a disassociation in order to integrate them as a whole. The guided anatomical visualization was introduced during treatment #5 and integrated into the end of all the remaining treatments.

OUTCOME Results from the measurements of right knee flexion show improvements after most treatments (Figure 1). The average improvement was seven degrees of increased knee flexion per treatment. The degrees of motion gained were not sustained though and range of motion in knee flexion returned to pretreatment levels between each session. Girth measurements remained relatively stationary throughout the study staying 35cm at the start of each treatment. Girth stayed the same pre- and post-treatment during treatments 1, 2, 4, 5, 6 and 10. There was a reduction of 1cm during treatments 8 and 7. A .5cm reduction was measured post treatments 3 and 9.

The patient reported considerable increased ease of movement post treatment as though a "weight had been lifted". She expressed particular relief with medial glide joint mobilization of the tibia on the femur. The client reported these positive effects to last about 1.5 days after treatment before returning to around the baseline again.

Perhaps the most significant outcome was the reduction in stress and anxiety related to the tumor and it's effects on the subject's daily life. She reported feeling more positive about the progression of her tumors growth and more body awareness. The twice-weekly measurements of the tumor gave her confidence that in fact the tumor is not actively increasing in size. It gave her the baseline measurements and ability to continue to monitor the girth independently to put her anxiety about tumor growth in perspective.

DISCUSSION This case study was unable to definitively determine the effects of massage therapy on a benign vascularized fibromatosis. Many positive effects were seen such as increased knee flexion, greater ease of movement, and reduction in patient pain and stress. Although these effects were temporary, lasting 1-2 days, they were a great relief to the subject of this study. Due to the high number of variables in the approach to treatment, it would be difficult to recreate this study to compare the results achieved.

The greatest effects experienced by the patient were decreased stress and improvement in general wellbeing. These are highly subjective findings and were not measured on any scale during the course of the study. Using a standardized and consistent method of recording pain and stress levels during future studies will create a more comprehensive set a data and clearer outcomes over the course of treatment.

Based on the pathophysiology of benign vascularized fibromatoses, it is clear that massage therapy is not going to be curative in reducing the size of the tumor. A further investigation is warranted as to how massage therapy can improve both the quality of life and musculoskeletal complaints associated with this type of tumor. Future cases may benefit from using a specific treatment protocol for each treatment so as to have a greater measure of certainty that the effects are due to the treatment as well as reproducibility for future practitioners encountering this pathology. Although not curative, the effects of massage therapy on benign aggressive fibromatoses warrents further investigation.

As a therapist, this study has taught me the value of using objective measurements to track a patient's progress, both long and short term. Planning a series of treatments and evaluating their effectiveness by following up with the client regularly was a very useful experience in treatment planning and modification.

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