Osteopathic Manipulative Treatment Reduced Pain and Increased Activity in a Metastatic Breast Cancer Patient: A Case Report

Glenn Klucka DO, PGY-4; Todd Dombroski DO

INTRODUCTION

Cancer pain is common concern seen in 50-85% of the cancer population with over 33% of those patients reporting their pain as moderate to severe. This pain can significantly decrease a patient's quality of life. Osteopathic Manipulative Treatment (OMT) restores the body's natural balance which can help to reduce pain and restore function. This case report looks at the treatment of a 32 year old Female with metastatic breast cancer for severe pain that stopped her from showering, driving, and other activities. After 4 treatments her pain level decreased and most of her activities returned: driving, light housework, and taking care of her family.

CASE

History of Present Illness

L.C. is a 32 year old female diagnosed with breast cancer 4.5 years prior to presentation with Left shoulder and mid to upper back pain that she rates as 6/10 at rest and 10/10 with movement or pressure. She was diagnosed with metastases to the upper and mid-thoracic spine approximately 2.5 years ago. She had completed radiation therapy and was in maintenance phase. Her pain is an aching pain which she rates as 6/10 at rest and 10/10 with movement or pressure. Due to her pain she had difficulty tolerating touch and avoided shaking hands with people due to pain. Associated symptoms were constipation, stiffness, and tenderness. She was treated with oral pain medications and pain management without significant improvement of pain or activity levels and was referred to our clinic by a friend. She also mentioned desire to decrease her pain medication requirement.

Assessment:

- 32 year old Female with history of metastatic breast cancer now status post radiation and induction chemotherapy now in maintenance phase presenting with back and shoulder pain as well as other comorbidities secondary to her breast cancer and associated structural changes. She is motivated to have her pain decreased and return to activities such as taking care of her family.

TREATMENT COURSE

Visit #1:

- Risks and benefits of OMT were discussed with patient, including potential spread of her cancer. She acknowledged theoretical risk of further spread, but stated that she wanted her pain to improve and agreed to treatment with OMT.
- Patient was treated with gentle myofascial release (MFR) and balanced manual lymphatic drainage (MLD) focusing on the cervical and thoracic spine, and around the spine.
- Post-treatment: Patient noted improvement in her pain and the “catching” sensation resolved.

Visit #2:

- Pain 5/10 at rest, 10/10 with movement or pressure
- Changes: Constipation improved without decrease in opioid pain medications
- Complaints: “catching” sensation in her Left shoulder with movement.
- She did shake hands prior to treatment.
- Treatment: BLM and MFR to the cervical and thoracic spine, muscle, and deep fascial layers including those around the cervical and thoracic spine.
- Post-treatment: Patient noted improvement in pain and the “catching” sensation resolved.

Visit #3-4:

- Changes: She noted significant improvement in pain in range of motion.
- Now able to sit upright with back resting against a firm object, shower without assistance, and drive herself to the appointment.
- She asked help with bladder and bowel function and we referred her to a nurse practitioner.

Visit #5:

- 4 months after prior visit due to insurance issues, pain 3/10 at rest, 10/10 with movement
- Changes: Catching in shoulder had recurred, but is still driving
- Treatment: MFR and BLM including muscle and deep fascial layers
- Records obtained after visit including repeat bone scan showed slight increase uptake at T3, suspicious for possible progression of primary metastases, but no osseous or lymph node changes noted on CT scan

DISCUSSION

"When every part of the machine is correctly adjusted and in perfect harmony, health will hold dominion over the human organism by laws a natural and immutable as the laws of gravity." - A.T. Still

Our patient showed significant improvement over the course of the initial four treatments. Improvements were noted in pain scale, constipation, pain medication requirement, and activities of daily living including showering and driving. As her treatment progressed she became more excited about the activities and restored independence. Four months later at her 5th visit her pain had increased, but was still less than her initial pain level and she retained most of her functional improvements. Treatment was focused on the fascia, particularly of the back and around the spine to restore tensility and compensate for structural changes to the thoracic vertebrae that were contributing to her pain. Her treatment course shows that OMT focused on structural changes secondary to cancer can have significant effects on pain and quality of life. While her bone scan did show increased uptake at T3 with no increased uptake at T10. Many factors influence increased uptake at a specific site in a bone scan. In this case these include increased blood flow or increased tumor load. Fortunately, CT scan showed no structural changes to her vertebrae and no lymph node changes. These findings underline the need to monitor the patient and serial imaging studies.

Visit #6:

- 4 months after prior visit due to insurance issues, pain 3/10 at rest, 10/10 with movement
- Changes: Catching in shoulder had recurred, it is still driving
- Treatment: MFL and BLM including muscle and deep fascial layers
- Records obtained after visit including repeat bone scan showed slight increase uptake at T3, suspicious for possible progression of primary metastases, but no osseous or lymph node changes noted on CT scan

The effects of OMT on cancer cells and spread are unknown as there are no human studies. Invivo and animal research models do not provide clear answers either. Our patient underwent fascial manipulation close to her primary metastasis site in the thoracic spine. Local manipulation does bring concern of dislodging cancer cells and causing metastasis. A human study of breast metastasis by surgeons prior to lymph node biopsy demonstrated increased spread of dye labeled epithelial cells to sentinel lymph nodes. The authors considered this “benign mechanical transport”. Other authors found that all movement of any form of manipulation potentially concerns.

While lymphatic spread of cancer after OMT has been theorized, the immune system has a critical role in destroying cancer cells. New therapies are utilizing the immune response to cancer. OMT has been shown the ability to enhance the immune system 7,8. By enhancing the immune system and potentially immunotherapies, OMT may have a synergistic role in the fight against cancer.

Increased tissue stiffness and local inflammation have been linked with malignant growth, although a definitive relationship has not been established. Manual therapies such as massage therapy and acupuncture are frequently used as treatment modalities in cancer patients and have data supporting their efficacy9,10 and safely11, although no randomized controlled trial has been performed.

This case report does have several limitations. First, the example of a short course of treatments in one specific patient may not provide generalizable information about patient outcomes. Specific factors such as the type of cancer or the presence of metastatic disease may have a role in the patient’s response to treatment. Study of multiple patients over a longer period of time would provide information that may be more clinically generalizable to a population of patients. In addition cancer growth and metastasis are important concerns as safety of OMT in cancer patients has not been demonstrated. We will continue to monitor our patient’s progression over time and discuss further treatment with her with the new information.

This case study supports that OMT can have positive effects on pain and activity levels in a metastatic cancer patient. Furthermore, OMT may be synergistic with immunologic forms of cancer treatment. While this case study highlights the benefits to this patient, the bone scan points to the theoretical risk to the patient. Ultimately the effects of OMT on cancer, while believed by these authors to be overall positive require further research to quantify risks and benefits.

REFERENCES

3. This is especially true for lymphatic drainage, which is often used to reduce swelling and pain and is frequently used as an adjuvant therapy for cancer patients. J Altern Complement Med. 2007;13(7):679-684.
7. This case study was approved by the UNTHSC IRB #1 2017.3.