INTRODUCTION

Chronic low back pain is an extremely prevalent condition within the United States and has become a leading cause of disability and a major financial obligation for both patients and the healthcare system. Disc herniation is one category that contributes to the growing number of low back pain cases and determining the best intervention for these patients can present a challenge. Surgical intervention carries many risks including recurrent herniation and a severe resulting complication termed Failed Back Surgery Syndrome.2 Persistent postoperative pain has been recognized as a common outcome of certain types of procedures, one that severely compromises quality of life and has the ability to impact the response of the nervous system to future stimuli, both nociceptive and harmless. There is a multifaceted approach to disc herniation that should be tailored to patients on an individual basis. This case study is based on a chronic pain patient, E.M., and provides further investigation into pain, a sensation that has become debilitating and chronic for many. It will provide insight into both surgical and non-surgical interventions that will allow us to better serve our patients in order to provide the highest quality of healthcare.

CASE REPORT

E.M. is a 50 year old Caucasian male who presented to his primary care physician (PCP) with a herniated disc, causing right lumbar radiculopathy. The disc was removed through a disc laminectomy. E.M. worked as a pipelighter and as such was required to work in confined spaces. Following surgery, E.M. began experiencing acute pain in his lumbar region that increased in frequency and duration. The intensity of E.M.’s pain peaked six months after initial onset and became so severe that he was unable to stand. X-rays ordered by his PCP showed a severed bony fragment from a lumbar facet that had detached. MRI imaging showed annular disc bulging of L4-S1 leading to three additional surgeries. Sitting and/or standing for an extended time, driving, heat, twisting, lifting, and flexion provoked E.M.’s pain while laying supine, ice and medication palliated it. After multiple surgeries including vertebral fusion to relieve his pain, E.M. has felt little to no relief. His pain is constant and progressive requiring him to wear a back brace to decouple pressure on his nerve roots. E.M. has been unable to return to work.

Past Medical History: Significant for degenerative disc disease, bilateral carpal tunnel syndrome, hypothyroidism, narcolepsy, and pseudarthrosis.

Medications and Supplements: Methylphendate HCL 54 mg daily, Loratadine 10 mg daily, Levothyroxine 200mg daily, Tylenol 500 mg PRN, Advil 200 mg PRN, Fish oil 1200 mg daily, Multivitamin, D3 200iu/day

Surgical History: L4-S1 double laminectomy in 1996, cholecystectomy and L4-S1 double laminectomy in 1997, L4-S1 vertebral interface fusion with bilateral rods and screws placed in L3-L5 in 1999, L4-S1 vertebral interbody fusion revision with removal of bilateral rods and screws in 2001, and a thyrodeectomy in 2009.

Social History: Although E.M.’s medication for narcolepsy has increased his appetite, his food intake is restricted by his tight fitting back brace. Weight loss has caused E.M. to purchase four new back braces in the past ten years totaling over eight thousand dollars. Since sustaining his original injury, E.M. has been unable to return to work. He is the facilitator of the Chronic Pain Support Group of Southern Maine, which he finds cathartic. His hobbies include: woodworking, restoring old Volkswagen cars and serving as a former mentor in the “Big Brother” program. E.M. enjoys advocating for patients with chronic pain. “You can still have a fulfilled life with chronic pain you just have to be creative and adjust your life.”

DISCUSSION

 Failed Back Surgery Syndrome (FBSS) has a high incidence rate between 30% and 40%.2 The incidence rate for failed lumbar fusion surgeries is even higher between 30% and 46% and the financial costs for patients pre, peri, and post surgery are substantially 1. FBSS is characterized by persistent or recurring lower back pain after one or more spinal surgeries and is a common cause of chronic pain. Patients suffering from chronic lower back pain (CLBP) show a low recovery rate and often exhibit persistent and/or relapsing pain due to inadequate treatment 3. Initial treatment typically focuses solely on sources of pain rather then addressing the problem from a patient centered approach. It is important to explore ways through which the perception of pain can be altered in order to improve their quality of life.

Osteopathic Manipulative Medicine (OMM) encompasses patient centered strategies that decrease pain and enhance function. Physiological and psychological mechanisms contribute to the success of OMM. Physiologically, OMM therapy attenuates nociception by reducing excitatory input to γ-motor neurons, neutralizing stretch reflexes and decreasing excitatory input to a motor neurons and decreased muscle activity. These interactions lessen the likelihood of reflexive involuntary contractions that produce pain during motion.

Patients receiving OMM therapy for CLBP receive an integrated osteopathic exam which provides an opportunity to explore the physical, psychological, emotional, and spiritual factors shown to contribute to CLBP. Position Emission Topography has shown a difference in the localization of acute and chronic pain in the brain. While acute pain is primarily processed in the sensory cortex, chronic pain is processed in the anterior cingulate gyrus, an area involved in effective motivational processing4. This helps to explain why patients with chronic pain describe their suffering and the impact it has on their lives, rather than providing only a location and description of symptoms, OMM entails hands on management of somatic dysfunction providing the physician access to the patient’s mind-body connection and facilitating a discussion of strategies to reduce psychological, emotional, and spiritual pain all of which could be perceived physically.

Several studies have found a significant reduction in non-steroidal anti inflammatory agent, muscle relaxant, sedative, and narcotic analgesic use among patients with CLBP recovering 7,8,9. OMM also reduced pain perception, morbidity related factors and was associated with a reduced cost of managing CLBP 7,8,9. Lucciarone et al. found substantial cost savings when OMM was performed since osteopathic physicians performed OMM themselves and thus did not refer patients to a chiropractor or surgeon9.

CONCLUSIONS

The primary focus of OMM is not the identification and removal of an underlying organic disease but rather, to empower the patient to modify environmental and cognitive processes associated with chronic pain. By addressing the whole patient and looking for ways to not only treat the patient’s pain, but also alter their perception of pain, OMM holds great promise as an alternative initial/pre-surgical therapy for disc herniation and/or CLBP.

REFERENCES

11. Physiologically, OMM therapy attenuates nociception by reducing excitatory input to γ-motor neurons, neutralizing stretch reflexes and decreasing excitatory input to a motor neurons and decreased muscle activity. These interactions lessen the likelihood of reflexive involuntary contractions that produce pain during motion.
12. Several studies have found a significant reduction in non-steroidal anti inflammatory agent, muscle relaxant, sedative, and narcotic analgesic use among patients with CLBP recovering.
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