

OMT as an Adjunct to Pain Management in a Patient with Von Hippel-Lindau Syndrome

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Introduction

- Pediatric palliative care focuses on children, prenatal to young adult, with complex, chronic or serious conditions to enhance quality of life in partnership with cure-directed care.
- Akron Children's Haslinger Family Pediatric Palliative Care Center is one of the largest pediatric palliative care programs in the U.S. and serves as a local, national and international model for the provision of high-quality care across the continuum.
- Von Hippel-Lindau disease is an autosomal dominant disorder due to mutations in the VHL tumor suppressor gene resulting in the uncontrolled growth of hemangioblastomas.¹
- These growths can be located in the brain and spinal cord leading to a variety of symptoms including, but not limited to, headaches, ataxia, vomiting, and weakness. Hemangioblastomas can be located in other areas of the body and have potential to cause life-threatening complications.¹
- The use of osteopathic manipulative therapy (OMT) as additional treatment for chronic pain management can be beneficial in improving quality of life (QoL).

Materials & Methods

- A 23-year-old young man with Von Hippel-Lindau syndrome, was treated with various OMT techniques on an almost-monthly basis as an adjunct to his chronic pain management regimen over approximately 3-1/2 years prior to his death.
- The patient was diagnosed with multiple back and spinal cord hemangiomas, renal cell carcinoma, chronic back pain, constipation, depression, and sleep disturbance.
- The case report analyzes somatic dysfunction patterns, osteopathic manipulative techniques used, opioid dosing trends, and overall management of the patient's pain in order to show benefit of OMT and the osteopathic approach to treatment in the management of chronic pain.

Results

Figure 1.

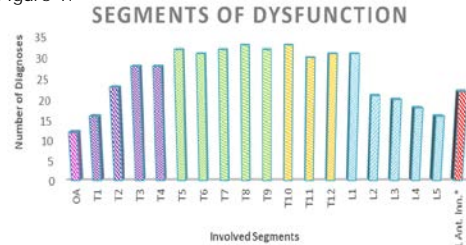


Figure 1:

- The patient's imaging showed consistent lesion patterns on MRI and CT:
 - Pseudomeningocele extending from occipital region to upper cervical spine, which decreased after a VP shunt was placed. This correlates to the persistent dysfunction at the OA.
 - Upper thoracic vertebral body height degeneration and loss, which associates with the dysfunctions at T1-4.
 - Pancreatic cystic lesions, which matches to the repetitive diagnosis of segments T5-9.
 - Bilateral renal cysts and partial nephrectomies correlate to segments T10-12 and the left anteriorly rotated innominate*.

Conclusion

- The persistent hemangioblastoma tumors found in his cerebellum, pancreas, and kidneys along with his upper thoracic vertebral body degeneration, history of suboccipital craniectomy, bilateral partial nephrectomies, and ventriculoperitoneal (VP) shunt placement for treatment of a pseudomeningocele extending from the occipital region to upper cervical spine all contribute to the chronicity of his pain and repetitive segmental somatic dysfunctions.
- Muscle Energy is a patient-activated technique which gently increases range of motion. This modality of therapy allows for a low risk method of chronic pain relief. Therefore, the use of OMT can be an adjunct treatment for chronic pain management.
- Pediatric palliative care is a multidisciplinary and comprehensive approach to patient care, which aligns with the holistic philosophy of osteopathy. Collaborating these fields in the treatment of patients can provide many benefits.

Discussion

- OMT diagnoses correlate with organ specific, imaging-confirmed hemangioblastomas and vertebral degeneration (see Figure 1).
- Oxycodone dosing (every 4-6 hours) was stable at 10mg for 8 months, then increased to 15mg for 19 months, and then increased to 15-30mg for 15 months until his passing.
- Oxycontin dosing (twice daily) was consistent at 20mg for 3 months, decreased to 10mg in the morning and 20 in the evening for 12 months, and then increased to 30mg bid for 15 months until his passing.
- After each session of OMT with muscle energy, the patient felt his pain was improved and the examiner found that each dysfunction corrected upon recheck.
- Monthly visits consisted of appointments with a social worker, palliative medicine physician who provided OMT, psychologist, and physical therapist. The patient particularly felt OMT was helpful and would return for separate OMT appointments.

- Chronic pain causes physical, emotional, and psychological challenges which decrease QoL. Pain can become a daily focus, diverting patients from family, friends, and activities which they previously enjoyed.²
- Osteopathic medicine focuses on treating the patient as a whole, which is synchronous with palliative care's patient-focused and comprehensive approach to care. Having a multidisciplinary team who coordinate their efforts has proven to be effective in the management of pain. This approach has been shown to reduce pain by 20% to 40%.²
- Muscle energy techniques improve motion restriction. A review of the literature on major adverse events after manipulation found no injuries were attributed to muscle energy, indirect, or fascial techniques. This suggests that there are no absolute contraindications in utilizing OMT in the pediatric palliative care population.⁴
- When considering pain, the use of OMT decreases referrals to other physicians, percentage of hospital admissions, and number of visits for treatment compared to other colleagues that do not utilize OMT.⁴ This patient only had 3 ED visits during the 3 ½ years of OMT implementation.
- In a randomized controlled trial, OMT providers achieved back pain outcomes comparable to those of usual medical treatment while prescribing fewer medications and less physical therapy.⁴ This reflects the possibility that OMT allowed for opioid dosing stability over time until significant progression of his disorder overwhelmed his ability to stay active and control his pain.
- Overall, patients with chronic and complex disorders can significantly benefit from the incorporation of OMT into their care plan.

References:

- ¹Von Hippel-Lindau Syndrome. Genetics Home Reference (2012).
- ²Rasor J, Harris G. Opioid Use for Moderate to Severe Pain. J Am Osteopath Assoc 2005;105(6_suppl_3):S2-S7.
- ³Radler, Scott. Nonpharmacologic Management of Pain. *Journal of the American Osteopathic Association* 2004. 104(11): S6-S12.
- ⁴Licciardone, John. The Unique Role of Osteopathic Physicians in Treating Patients With Low Back Pain. *Journal of the American Osteopathic Association* 2004. 104(11): S13-S18.

In honor of our patient who was committed to the enhancement of medical care and research for those suffering with chronic pain and VHL.