CASE REPORT

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Case History #4

Case Report

Patient Identification: The patient is a 65-year-old Caucasian female with multiple medical problems and recent cervical surgery.

Chief Complaint

Nausea and choking and neck pain.

History of Chief Complaint

The patient is an extremely pleasant 65-year-old Caucasian female who presented to the Family Practice office with complaint of anusea and choking following an anterior cerviacl discectomy with allograft fusion at C2-C3, C3-C4 with atlantis plate instrumentation three weeks prior to presenting to the Family Practice office. The patient's surgery was due to cervical spinal stenosis with instability at C2 and C3, and there were large anterior osteophytes at C3 and C4 during surgery. During the patient's surgical procedure, two screws were placed at C2, two at C3, and two at C4, and there was a placement of a bone plug at the C2-C3 interspace.

Past Medical History

- 1. Cervical spine stenoisis with instability at C2 and C3.
- 2. Lumbar degenerative disc diseases at L4, L5.
- 3. Lumbar degenerative arthritis at L3, L4.
- 4. Spondylolistehsis at L5, S1.
- 5. Ductal carcinoma in situ of the right breast.
- 6. Seizure disorder.
- 7. Fluid retention.
- 8. Venous insufficiency.
- 9. Thrombocytopenia
- 10. Chronic interstitial cytitis.
- 11. Abnormal EKG with inferior Q wave changes.
- 12. Chronic pain syndrome.
- 13. Status post radiation tratment of 50.4 Gy given in 28 fractions over six weeks.

Past Surgical History

- 1. Cervical discectomy in 1995, recent anterior cervical discectomy as above.
- 2. Lumbar laminectomy x 2.
- 3. Cholecystectomy.

Editor's Note

David Coffey, DO, FAAO passed away on June 2, 2023. This article was completed as part of the requirement toward earning the designation of Fellow in the American Academy of Osteopathy. Opinions expressed in this article are those of the author and do not necessarily reflect the viewpoint or official policy of the American Academy of Osteopathy, and it was edited to conform to *AAOJ* style guidelines.

Keywords

Cervical surgery, cervical recovery, OMT, OMM, allograft fusion, osteophytes

Allergies

Penicillin, sulfa, codeine, erthromycin.

Medications

Premarin 1.25 mg a day. Valium 5 mg t.i.d. Desyrel 300 mg at bedtime. Prilosec 20 mg daily. Lasix 80 mg daily. Potassium 20 mEq daily. Restoril 30 mg at bedtime. Phenergen 25 mg q 4-6 hours p.r.n. Soma 350 mg t.i.d. p.r.n. Vitamin E 800 IU a day. Vitamin C 1000 mg a day. Vitamin B6. Percocet 5 mg t.i.d.

Family Medical History

Positive for heart disease.

Social History

Negative for tobacco or alcohol use. The paitent works as a bookkeeper.

Review of System

Positive for fatigue. Positive for blurred vision on the right. Positive for postnasal drop. Positive for episodes of check pain. Negative for shortness of breath. Positive for cough. Positive for difficulty swallowing. Positive for nausea. Negative for vomiting. Positive for gastroesophageal reflux. Positive for chronic insterstitial cytitis. Positie for burning. Positive for dysuria, positive for urgency. Negative for vaginal discharge. Positive for back pack. Positive for neck pack. Positive for lumbar pain. Positive for leg pain. Positive for headache. Positive for vertigo. Positive for edema. Negative for urticaria. Positive for depression. Positive for anxiety. Positive for night sweats. Negative for polyuria. Negative for polydipsia.

Reproductive

The patient has two grown children. The patient has had no miscarriages. The patient insists on taking hormone replacement therapy and has refused to take adjuvant Tamoxifen for her breast cancer. The patient noted that the quality of her life is more important than the quantity of her life in this decision.

Osteopathic Structural Examination

HEENT

Pupils equal and reactive to light and accommodation. Extraocular muscles are intact. There is no nystagmus. There is no scleral icterus. Fund us has a normal cup to disc ratio of 3: 1. There is no AV nicking. The septum is midline. The patient is in moderate to severe distress secondary to pain. The patient holds her neck in a right sidebending position. The patient is wearing a cervical collar, There is no erythema of the posterior pharynx, Trachea is midline. The patient is able to swallow, but states that the food gets stuck in the right posterior portion of her pharynx, and she is unable to swallow when the food gets caught. There is marked compression of the occipital condyles bilaterally with the right being greater than the left. There is fascial tension in the cervical-cranial junction. The occiput is sidebent right and rotated left, CS is rotated right and sidebent right. The patient had previous surgery three weeks prior with a plate from C2 to C4 on the right. These vertebrae act as aunit with C2 to C4 following CS and are rotated right and sidebent right. There is external rotation of the right temporal with compression of the right occipitomastoid suture and internal rotation of the left temporal with mild restriction at the left occipitomastoid suture. The hyoid bone is shifted right of the midline with a pattern which would be described as extension with right rotation and left sidebending from its neutral position. There is also translation of the hyoid to the right.

Heart/Lungs

Heart rate is regular with a grade 2/6 holosystolic murmur. There is no precordial thump or heave. Lungs are clear to auscultation anteriorly and posteriorly bilaterally. Ribs I 0-12 are restricted in exhalation on the right. T12 is flexed with right rotation and right sidebending. TI O and T1 I follow T1 2 and are flexed with right rotation and right sidebending.

Abdomen

Soft with active bowel sounds in all four quadrants. There is no hepatomegaly. There is no splenomegaly. There is no abdominal tenderness.

Pelvis

LS is in extension with right rotation and right sidebending. L3 and L4 follow LS with extension and are rotated right and sidebent right. The sacrum is restricted in craniosacral extension. There is bilateral sciatic notch tenderness. Standing flexion test is positive on the right with a more lateral right anterior superior iliac spine in the supine position suggestive of a right iliosacral outflare.

Extremities

There is back pain on active straight leg raising on the left and right at 40 degrees. Deep tendon reflexes show hyperreflexia at both biceps. There are mild hyperactive reflexes at the brachioradialis and hip extensors. Reflexes are normal at the triceps, and there are absent ankle reflexes bilaterally.

Neurologic/Psychiatric

Cranial nerves 2-12 are intact. The cerebellum is intact. Romberg is negative. The patient has depression associated with chronic pain.0

Clinical Impression

- 1. Hyoid bone somatic dysfunction with resultant difficulty swallowing
- 2. Cranial somatic dysfunction with condylar compression affecting the hypoglossal nerve and temporal bone somatic dysfunction affecting the vagus nerve
- 3. Cervical spinal stenosis with recent anterior cervical discectomy with allograft fusion at C2-3 and C3-4 with placement of an atlantis plate
- 4. Lumbar degenerative disc disease
- 5. Lumbar degenerative arthritis at L3-L4
- 6. Lumbosacral radiculopathy
- 7. Cranial, cervical, thoracic, rib, lumbar, sacrum and pelvis somatic dysfunction
- 8. Spondylolisthesis at LS-SI
- 9. Chronic pain syndrome
- 10. Depression
- 11. Extensive past medical history including ductal carcinoma of the breast in situ, seizure disorder, fluid retention, venous insufficiency, thrombocytopenia, chronic interstitial cystitis, abnormal EKG

Course of Osteopathic Treatment

The patient was treated with myofascial release and craniosacral techniques beginning with the sacrum and pelvis and then working from the lumbar region to the lower right thoracic region, the right rib cage, and the thoracics, Myofascial balance was then directed to the suboccipital area and the cervical thoracic junction emphasizing traction on the right cranial cervical junction with relaxation in this area. Myofascial balance was then directed to the occipital condyles. Cranial treatments using fluid techniques and a V-spread were then used to correct the temporal somatic dysfunctions at the occipitomastoid sutures. Following normalization of these areas, the somatic dysfunction of the hyoid bone was addressed with the right hand cradling the occipital bone for balance and the left hand on the body of the hyoid bone. An indirect myofascial release technique was used to this area while allowing the fascia to move to a position of ease and then allowing relaxation and restoration to the midline. The patient stated that her swallowing had improved, and after three visits her symptoms of swallowing dysfunction were negligible. The patient's nausea improved with the first visit.

Discussion

The patient's presentation to the Family Practice office was directly connected to her surgery three weeks earlier. Instrumentation in the anterior cervical triangle of the neck to perform this surgery isolates the carotid sheath and the sternocleidomastoid muscles. The anterior cervical triangle subdivisions include the stylohyoid and omohyoid muscles posteriorly and below along with the body of the hyoid bone caudally, 1 Muscles involved in swallowing include the mylohyoid, geniohyoid, and stylohyoid muscles, which raise the hyoid and expand the pharynx to receive the food bolus.2 The hypoglossal nerve innervates the Genioglossus, which inserts on the hyoid bone and the underside of the tongue and retracts and depresses the tongue; it also innervates the Hyoglossus and the Styloglossus, which depress and raise the tongue respectively.3 The Ansa Cervicalis has a superior root, which communicates with the hypoglossal from CI and C2 and forms an inferior root from C2 and C3; it supplies the geniohyoid, thyrohyoid, omohyoid, sternothyroid, and sternohyoid muscles.4 Disruption of the cervical fascia during instrumentation contributed to the patient's symptoms, and its' treatment was key to reversing her symptoms. The pretracheal visceral cervical fascia is attached cephalically to the hyoid bone and thyroid cartilage and encloses the pharynx, larynx and trachea; the fascia of the infrahyoid consists of two layers, namely the superficial which encloses the stylohyoid and the omohyoid muscles and the deep layer which invests the sternothyroid and the thyrohyoid muscles.5 The cutaneous nerves of the neck are innervated laterally by the lesser occipital and auricular branches of the cervical plexus at C2, C3 respectively and the intermediate supraclavicular branch of C3 and C4.6 The patient's somatic

dysfunction can be explained by her cervical hyperextension during surgery along with instrumentation with retractors and instrumentation during the placement of the atlantis plate. Condylar compression on the right contributes to the swallowing dysfunction due to its proximity to the hypoglossal nerve. The patient also complained of pain at the right mastoid process, which I believe was directly related to her nausea due to effect on the vagus nerve at the jugular foramen which is formed by the occipitomastoid suture. Her nausea reversed immediately following treatment of the right temporal bone. The patient has multiple medical problems along with multiple causes of chronic somatic dysfunction. However, she was able to receive temporary relief with osteopathic treatment and was able to "get one good night's rest" following each visit.

References

- Pansky B. 1979, "Review of Gross Anatomy", 4th Edition, McMillan Publishing Company, Inc. 36. New York, NY.
- 2. Ibid, 40, 62.
- 3. Ibid, 48.
- 4. Ibid, 54.
- 5. Ibid, 36.
- 6. Pansky B & Allen DJ. 1980. "Review of Neuroscience", McMillan Publishing Company, Inc. 73. New York, NY.