Rehabilitation and Osteopathic Manipulative Medicine for a Patient with Dysphagia secondary to Hyoid Somatic Dysfunction: A Case Report

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ABSTRACT

Setting: Neuromusculoskeletal and Rehabilitation Clinic
Patient: A 25-year-old healthy female

CASE DESCRIPTION

The patient sustained a cervical acceleration-deceleration injury (whiplash) from rear end motor vehicle collision. After the whiplash injury, she presented with neck pain, headaches, and dysphagia. After physical therapy to neck and pain management, the patient continued to complain of persistent dysphagia. Magnetic resonance imaging and computed tomography of the head and neck were normal. Subsequently, she underwent upper endoscopy and electrodiagnostic studies, where the results were normal. The patient was referred to an osteopathic palpatory diagnosis documenting specific somatic dysfunctions by finding palpable tissue texture changes, asymmetry to motion, range of motion deficits and areas of tenderness at the neck. She presented with a left hyoid asymmetry with decreased range of motion and left digastric and hyoid muscle tenderness and tightness. The left sternocleidomastoid muscle was tender and the cervical spine had multilevel somatic dysfunctions. The patient underwent osteopathic manipulative medicine, consisting of myofascial release and muscle energy to the hyoid and anterior neck muscles with cervical high velocity low amplitude manipulation. After three sessions of osteopathic manipulative treatment and a home rehabilitation program consisting of anterior cervical muscle stretching, range of motion, and strengthening, the patient was reexamined and found to have decreased tissue texture changes, less restriction of motion and improved range of motion accompanied by an improvement in swallowing.

RESULTS

After physical therapy to neck and pain management, the patient continued to complain of persistent dysphagia. To our knowledge, this is the first reported case of hyoid somatic dysfunction causing dysphagia. Clinicians should be aware of this etiology, especially if imaging and electrodiagnostic studies are normal.

Keywords: Dysphagia, Hyoid, Osteopathic, Rehabilitation

DISCUSSION

Cervical acceleration-deceleration injury (whiplash syndrome) is a relatively common injury in patients after a motor vehicle collision. The forces of the collision cause trauma to the cervical spine and damage cervical musculature, ligaments, bones, joints, and fascia, leading to pain and discomfort to these individuals. Most of the patients usually complain of muscle spasms, headaches, and pain at the posterior neck and upper back. Rarely, patients will complain of dysphagia or dyspnea. In this case, our patient complained of persistent dysphagia following her acceleration-deceleration injury. She underwent multiple studies, where all of the studies were normal. She finally received an osteopathic and physiatric evaluation and was diagnosed with a hyoid somatic dysfunction.

The definition of an osteopathic somatic dysfunction is an impaired or altered function of related components of the somatic (body framework) system, consisting of skeletal, arthrodial, myofascial, vascular, lymphatic, and neural structures, where the osteopathic palpatory diagnosis includes tenderness, asymmetry, restriction, and tissue texture changes. The patient's osteopathic examination revealed these structural changes at the left hyoid bone and associated muscles.

The hyoid is an important horse-shoe shaped bone with multiple functions. The bone contributes to airway protection and food bolus transport to the esophagus. A somatic dysfunction at the hyoid will alter the mechanics of the airway and swallowing. Studies have shown that a hyoid displacement will cause a decline in swallowing function, increased pharyngeal residue, slow bolus transit time, and may increase risk of aspiration. In addition, electrodiagnostic studies demonstrated that hyoid displacement leads to changes in muscle mass, fiber density, and functional motor units in the suprahylid and thyrohyoid muscles, which can lead to dysphagia.

Unfortunately, imaging and endoscopic studies are unable to reveal subtle changes and somatic dysfunctions of the hyoid bone and muscles. Quantitative assessment of hyoid bone displacement using video-swallowing images has been used in patients with obvious hyoid displacement, but had limitations in patients with subtle hyoid changes.

To our knowledge, the application of osteopathic manipulative medicine for hyoid somatic dysfunction has not been reported in the literature. Osteopathic manipulative treatment should focus on the mobilization of the restricted hyoid bone in conjunction of treating other aspects of the neck, including digastic, sternocleidomastoid, hyoid, and post neck muscles. Moreover, the importance of a rehabilitation program consisting of anterior cervical muscle stretching, range of motion, and strengthening should also be included in these patients.

REFERENCES