An Osteopathic Approach to Vertigo with the Galbreath Maneuver

Olivia Matz[1], Samantha Hurrle[1], Carolyn Vo[1], Drew Lewis[1] DO
[1]Des Moines University College of Osteopathic Medicine, Des Moines, IA

DES MOINES UNIVERSITY
MEDICINE & HEALTH SCIENCES

Background

Vertigo is a term used to describe several conditions that cause illusory movement[1]. The perceived movement can include spinning, swaying, or tilting. Vertigo itself is a symptom, not an ultimate diagnosis, and causes include mechanical, behavioral, chemical, genetic, and iatrogenic means. An asymmetry in the architecture or chemistry of the vestibular system is responsible for the symptom.

The eustachian tube (ET) is a cilia-lined valve between the middle ear and nasopharynx[2]. When the function of the ET fails, it does not open and close properly or drain appropriately, and there is a risk of developing eustachian tube dysfunctions such as otitis media, tinnitus, and vertigo[3]. This leads to multiple pathologies, the most classic of which is otitis media in young children.

Galbreath maneuver can help relieve symptoms of eustachian tube dysfunctions by opening the ET which facilitates lymph drainage[4]. With application of rhythmic manipulation to the mandible, the physician compresses and releases the pterygoid plexus, allowing for drainage of the middle ear and eustachian tube to the nasopharynx[5]. This manipulation affects the pressures within the middle ear and ET, opening the lumen and improving drainage.

Purpose

The goal of this case is to highlight the importance of investigating for somatic dysfunctions related to a patient's presentation of vertigo and emphasizing the value of critical thinking within the osteopathic framework to treat a patient.

The Galbreath Maneuver

Case Description

A 73-year-old female presented to the clinic for ongoing care of neck and shoulder pain. She has a long-standing history of vertigo, usually managed with physical therapy and avoiding cervical hyperextension. One month prior to her current visit, she'd come in urgently for treatment of a significant acute vertigo episode after hyperextension of the neck in the sink at a hair salon and was successfully treated. At her current visit, she complained of intermittent vertigo, buzzing and ringing in her ears, and a feeling of fullness in her ears.

Past medical history is significant for chronic neck pain with a mobile C3-4 spondylolisthesis, bilateral temporal headaches, benign paroxysmal positional vertigo, chronic low back pain, myofascial pain patterns. Surgical history was significant for tonsillectomy, cholecystectomy, hysterectomy, and an unspecified operation of the salivary gland. Social and family history is noncontributory.

Examination

Vital signs demonstrated a blood pressure of 116/75 mmHg and a heart rate of 69 bpm.

Head: normocephalic, atraumatic
Eyes: Lids and Conjunctivae: non-injected, no discharge
ENMT: Ears: no lesions on external ear, EACs clear. Hearing: no hearing loss. Nose: no lesions on external nose. Lips, Teeth, and Gums: no mouth or lip ulcers, no bleeding gums, normal dentition. Oropharynx: moist mucous membranes, no erythema, no exudates, tonsils not enlarged,.

An osteopathic structural exam was performed and documented below with the treatment style used to correct the dysfunction.

Body Areas	Somatic Dysfunction	Technique Applied
Head	OA ESlRr Suboccipital tension, bilaterally Eustachian tube dysfunction	ME MFR ST- Galbreath Technique
Cervical	Atlanto-axial joint rotated left C4 FRSl C6 ERSl	ME Still Still
Thoracic	Inlet- T1 RlSl, First rib elevated on the right	ME
Upper Extremity	Anterior right shoulder	ME

Intervention

The patient's somatic dysfunctions were treated using the techniques listed in the table above. The Galbreath maneuver with the patient supine was then applied to the patient's left side without incident. The Galbreath maneuver was then applied to the patient's right side with immediate, significant post-nasal drainage. The amount of drainage into the oropharynx and throat made it necessary to sit the patient up due to gagging and coughing. No vertigo symptoms developed from the rapid ascent to seated position. The Galbreath maneuver was continued in a seated position, as the patient could tolerate the drainage. No vertigo symptoms developed post-treatment. The patient tolerated treatment well without complication. The patient was taught Galbreath self-treatment and encouraged to perform it several times per day.

Outcomes

On telephone follow-up 8 days later, the patient reported significant improvement of ringing and muffling in the ears for 5 days and no episodes of vertigo. She reported no more drainage of the ear the day of treatment but did notice mild drainage intermittently over the next few days. The Galbreath self-treatment worked once the muffling came back, but only short-term, and she expressed interest in relearning the technique.

Discussion

Considering the immediate post-nasal drainage and significant improvement the patient of this case study experienced, the Galbreath maneuver may be considered as an adjunctive therapy to the current treatment regimen for dysfunctions of the ET. Though classically performed in pediatric cases, this case suggests that this technique would be indicated in patients with ET dysfunctions of all ages including adults with vertigo. This is especially true for patients who may not be surgical candidates[4]. It would be contraindicated in patients with abscesses, recent trauma and fractures to affected area, thrombotic events, leukemia, lymphoma, and chronic tympanic membrane perforation following AOM[4].

This case further emphasizes that structure and function are interrelated. Techniques used classically for one condition can be successfully applied based on the structures involved and the functions they serve. Our patient did not have otitis media as is classically described for Galbreath maneuver; however, the patient did have dysfunctional ETs. By thinking through the structure of the ETs and what their purpose is, this classically pediatric technique was applied.

References

1: Furman J, Barton J. Evaluation of the patient with vertigo. Uptodate.com. 2020. Accessed April 13, 2022.

2: Schuon R, Schwarzensteiner J, Paasche G, Lenarz T, John S. Functional aspects of the eustachian tube by means of 3D-modeling. PLOS ONE. https://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0244909. Published 2021. Accessed March 6, 2022.

3: Limb CJ, Lustig LR, Durand ML. Acute otitis media in adults . UpToDate. https://www.uptodate.com/contents/acute-otitis-media-in-adults. Accessed March 19, 2022.

4: Remien K. Osteopathic manipulative treatment: Lymphatic procedures. StatPearls [Internet]. https://www.ncbi.nlm.nih.gov/books/NBK559051/. Published November 15, 2021. Accessed March 19, 2022.

5:Pratt-Harrington D. Galbreath technique: A manipulative treatment for otitis media revisited. De Gruyter. https://www.degruyter.com/document/doi/10.7556/jaoa.2000.100.10.635/html. Published October 1, 2000. Accessed March 6, 2022.