Sphenobasilar Synchondrosis Dysfunction as a Biomechanical Etiology of Post-Concussion Alice in Wonderland Syndrome

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Introduction

Alice in Wonderland Syndrome (AIWS) is a rare neurologic phenomena involving a myriad of perceptual distortions, hallucinations, and depersonalization similar to those experienced by Alice in Lewis Carrol’s novel. AIWS is associated with various brain pathologies, with one of the most common being migraine. Although usually self-limited, resolution can take months to years, and even relapse without migraine prophylaxis medication. To our knowledge, this is the first and only case report demonstrating the efficacy of Osteopathic Cranial Manipulative Medicine (OCMM) to treat AIWS.

Case

A 15-year-old female presented to the OMM clinic for chronic, intractable headaches after suffering a concussion 3 months prior when she was hit by a softball on her right forehead. Headaches were described as “achy” and bilateral, with perceptual distortions and being “out of body” (depersonalization) occurring daily. On physical exam, the patient had severe sphenobasilar synchondrosis (SBS) compression, left lateral strain, decreased CRI motion, and right on left sacral torsion. We hypothesized that the cranial somatic dysfunctions observed may be causing/contributing to the patient’s symptoms of AIWS, which may also benefit from OCMM in addition to standard of care concussion therapy.

Results

Three treatments yielded resolution of somatic dysfunctions, improvement of headaches, and complete resolution of depersonalization symptoms. Improvements occurred in weeks rather than the typical months to years, and without needing long-term prophylactic medications.

Discussion

This rare case of post-concussion AIWS in an adolescent athlete provides evidence for the practical utility of OCMM in the treatment of AIWS, and suggests an anatomical/biomechanical etiology for AIWS, warranting further research. Limitations include few numbers of treatments and a lack of adequate follow-up time.