Dynamic Chiropractic

CONCUSSION PROTOCOLS

Concussions, Chiropractic and the Pituitary Dimmer Switch

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You may remember one of my past columns, "Concussion: A Pituitary Dimmer Switch" (Aug. 1, 2016). In that article, I discussed evidence suggesting a history of concussion increases the risk of depressed pituitary function. This post-concussive hypopituitarism (PCHP) typically occurs months or years after the concussive injury, like a pituitary "dimmer switch" on delayed activation.

Several researchers have noted an increase in serum levels of anti-pituitary and/or anti-hypothalamic antibodies in PCHP victims. This points to a probably auto-immune mechanism.

A New Hypothesis

I am revisiting PCHP in this column to draw your attention to a hopefully plausible hypothesis I recently published ("Hypoxic Stress: A Risk Factor for Post-Concussive Hypopituitarism? *Medical Hypotheses*, 2018). It is an attempt to identify which post-concussion patients are most at risk for delayed development of PCHP.

Hypoxia tends to promote excessive inflammation. Excessive inflammation, in turn, is a risk factor for autoimmunity. Connecting these dots, it seems to me that patients under hypoxic stress are at greater risk for PCHP than the general population of concussion victims. This at-risk group would include patients with asthma, COPD and obstructive sleep apnea, among other clinical problems.

The Chiropractic Connection

In the discussion section of my hypothesis paper, I propose chiropractic involvement in the care of patients at risk for PCHP for two reasons:

1. A small, but compelling body of published evidence indicates that chiropractic adjustments improve breathing capacities such as force vital capacity and forced expiratory volume in one second. (For a review of some of that literature, please see my June 3, 2004 column, "Breathing Normal and Then Some.") Furthermore, symptomatic relieve has been demonstrated in some case reports of patients with asthma, COPD, and obstructive sleep apnea (references on request).

Chiropractic care continuing after the acute symptomatic phase of concussion may potentially make a valuable contribution to preventing and/or ameliorating PCHP.

2. Promising results for patients with arterial hypertension and reflex sympathetic dystrophy also have been reported (references on request). This suggests adjustments help normalize vasomotor tone. This could be critically important where the pituitary interfaces with a narrow stalk of hypothalamic tissue – the infundibulum. The vasculature in this vulnerable structure is a potential hypoxic "choke point." The last thing the post-concussion patient needs is vasomotor disturbance generated by subluxation in

the cervical and/or upper thoracic spine.

Hopefully, chiropractic and/or medical institutions will test this hypothesis. In any event, improved breathing and vasomotor tone is a good thing with or without concussion and PCHP.

Author's Note: For a summary of my hypothesis written for a lay audience, please see my article posted with Science Trends: "Explaining Why Concussions May Activate a Pituitary Dimmer Switch, Jan. 3, 2019.

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