A Comparative Study of Cervical Hysteresis Characteristics after Various Osteopathic Manipulative Treatment (OMT) Modalities
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Background: Despite apparent clinical benefits, few objective tissue texture measurements exist documenting post-OMT change. Spineliner® technology was used to analyze a portion of the cervical hysteresis curve; of four components used to calculate a durometer, motoricity (area under the curve) and fixation (tissue resistance) were analyzed before and after OMT.

Hypothesis: Cervical tissues will show a quantifiable decrease in fixation and motoricity changes after OMT.

Materials & Methods: 200 subjects were equally and randomly assigned to receive Sham or single-segmental Muscle Energy (ME), Counterstrain (CS), Balanced Ligamentous Tension (BLT), or High-Velocity Low-Amplitude (HVLA) OMT. After palpatory diagnosis for somatic dysfunction, subjects were objectively measured (Spineliner®), treated with cervical OMT, and then remeasured (Spineliner®).

Results: Statistically significant or highly suggestive changes in motoricity (OA, C2-C5) and fixation (OA, C3, C5-6) were seen post-OMT. Regardless of treatment type, the most significant changes in fixation and motoricity occurred at C5. There was an overall trend suggesting that of these procedures, ME provides the greatest immediate improvement of hysteresis characteristics. While fixation immediately increased at C2 when using BLT, HVLA, or CS (in worsening order), it showed immediate improvement with ME. A suggestive motoricity trend was also observed at the level of the OA, inferring an improved treatment response was obtained with BLT, HVLA, CS, and ME (least to most responsive order).

Conclusion: Comparing treated to untreated cervical spines, nearly all levels demonstrated immediate objective hysteresis change post-OMT. C5 showed the most

change regardless of treatment type; ME provided the greatest immediate change.

Topical Theme: Differential Diagnosis in Functional Disorders

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