TITLE: AquaStretch™: A Breakthrough Aquatic Therapy for Frozen Shoulder Syndrome

Introduction: Frozen shoulder (aka Adhesive Capsulitis) is traditionally difficult to treat. Patients suffer from pain and limited joint mobility lasting an average of 3 to 4 years. This condition creates total health care costs between $7-$8,000 per episode. Evidence supports manual therapy (including mobilizations) and exercise before manipulation under anesthesia or arthroscopic surgery. About 7%-15% of patients suffer permanent motion loss. Clinical results suggest frozen shoulder may be more effectively treated and less costly using AquaStretch™ (A/S), a new form of aquatic myofascial release.

Case Description: A 49-year old male with right frozen shoulder was referred for A/S. Insidious onset 8/2011. Patient has Type I diabetes and no other significant medical history. Pt's main c/o was his inability to throw a baseball with his sons. Right shoulder AROM (in degrees) at initial visit; Flexion = 160, Abduction = 150, ER = 55 IR= R iliac, mid sacrum. Cortisone injection 5/2012. Pt started traditional land-based and traditional aquatic therapy 7/2012, 1-2x/wk for 7 months until 2/2013. Pt reported use of pain narcotics for 1 month, and NSAIDS PRN. Second cortisone injection 11/2012. Patient reported 10% improvement with cortisone injections, and 15% with physical therapy. However, all perceived gains were lost with 2 month tx inactivity prior to his initial A/S session 4/19/2013. Pt received full body A/S wellness procedure for 2 visits, followed by sessions focused on UE's and target R shoulder 2x/week for 4 weeks. Each session totaled 30 minutes. No additional techniques besides minimal intermittent home self-stretching (i.e., pec & IR towel stretch) performed.

Outcomes: Pt demonstrated strong ROM progress each session, with complete resolution of pain and ROM deficits during 9th visit on 5/17/2013. The third session, pt's right shoulder ER AROM improved 14 degrees (65 to 79 degrees) allowing pt to throw a ball with his son. Shoulder Pain and Disability Index (SPADI) score before A/S: 45% pain, 60% disability, 53% total score; after 9th A/S visit SPADI score: 0 pain, 0 disability. Shoulder Pain Score before A/S = 18, After 9th A/S visit = 7, indicating he was "cured." Patient demonstrated full AROM to be able to don/doff shirt, place objects on a high shelf and remove something from his back pocket.

Discussion: Uniquely, pt did not experience "treatment-induced" discomfort as compared to traditional manual mobilizations. Further research is needed to validate A/S frozen shoulder tx efficacy with a larger pt population. Research suggested on pts with excessive "adhesion" type conditions such as fibromyalgia and type I insulin dependent diabetes due to severity of symptoms and frequency of incidences. Furthermore, research should investigate cost effectiveness of A/S compared to the average cost per episode. This case is one of seven frozen shoulder patients seen by this PT with similar results from A/S.

Keywords: Frozen shoulder, AquaStretch, aquatic therapy, diabetes, fibromyalgia