Title: A novel approach using potable diagnostic ultrasound to inform treatment choices for hemiplegic shoulder pain – A case study

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Introduction: Hemiplegic shoulder pain (HSP) has a reported incidence of up to 84% of patients. The purpose of this case study is to report findings from a patient with HSP who received problem specific treatment and underwent real-time scanning of shoulder region with a portable diagnostic ultrasound. Treatment was modified to address the problems.

Methods/Case Description:
The patient was a 45 year-old woman with right sided-hemiparesis resulting from a clot. Patient was undergoing rehabilitation in a private clinic and reported shoulder pain. Patient was undergoing rehabilitation (over-arm exercises, electrical stimulation, stretches, Saebo exercises) however, continued to complain of shoulder pain (VAS-7). Ultrasound scanning was undertaken and following observations were made on both affected (AF) and unaffected (UAF) shoulders. Acromion-greater tuberosity (AGT) distance (AF-3.35 cm, UAF-2.04 cm), diameter of supraspinatus in resting state (AF-1.16 cm, UAF-1.42cm) and contracted state (AF-1.14cm, UAF-1.63cm). Modified treatment included: 1) Isometric exercises to supraspinatus muscle 2) Trigger point release for trapezius 3) Electrical stimulation to lateral deltoid and supraspinatus 4) avoid over-arm activities

Results: Ultrasound measurement suggested reduction in AGT immediately following treatment. 8 weeks later, VAS score was 3 and patient reported using her arm more for various functional tasks. Diameter of supraspinatus in resting state (AF -1.30 cm, UAF-1.45cm) and contracted state (AF-1.42cm, UAF-1.70cm) suggested some improvement.

Conclusions: Real-time ultrasound has potential benefits as an assessment tool to inform treatment choices for HSP. Further studies are required in this area.