

Hip Preservation Surgery in Patients with Femoroacetabular Impingement Syndrome and Acetabular Dysplasia Improves Functional Measures and Pain Catastrophizing

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INTRODUCTION: Chronic hip pain is a debilitating condition which severely reduces one's quality of life. Prior studies uncovered a link between hip pathologies and pain catastrophizing, anxiety and depression. Femoroacetabular impingement syndrome (FAIS) and acetabular dysplasia (AD) are two common hip pathologies that can lead to osteoarthritis and chronic hip pain. Development of these hip pathologies can lead patients to undergo hip preservation procedures after exhausting non-surgical conservative measures. The purpose of this study was to investigate whether hip preservation surgery in patients with femoroacetabular impingement syndrome (FAIS) and acetabular dysplasia (AD) improves functional outcomes and pain catastrophizing.

METHODS: Patients with FAIS and AD were requested to complete a hip questionnaire both preoperatively and postoperatively at a single academic center (University of Texas Southwestern Medical Center, Dallas, Texas, USA). Pain catastrophizing was evaluated utilizing the Pain Catastrophizing Scale (PCS) and pain level was assessed using the visual analog scale (VAS). Assessments of hip functional outcomes included the Hip Outcome Score (HOS) and Hip Disability and Osteoarthritis Outcome Score (HOOS). Outcome measures before and after treatment were compared using the dependent samples t-test. A correlation analysis, using the Spearman partial correlation coefficient (r_s), was conducted to evaluate the relationship between variables.

RESULTS SECTION: The sample was made up of 35 patients with AD and 53 with FAIS. The dependent samples *t*-test revealed a significant change or improvement in mean levels of pain catastrophizing and functional outcomes from pre- to post-treatment for patients with adverse hip conditions. The Spearman partial correlation coefficients revealed a significant inverse relationship between change in level of function (as measured by the HOOS QoL) and change in pain catastrophizing total ($r_s = -0.293$, $p=0.0065$, $FDR=0.0210$), pain catastrophizing rumination ($r_s = -0.391$, $p=0.0002$, $FDR=0.0010$), pain catastrophizing magnification ($r_s = -0.225$, $p=0.0380$, $FDR=0.1900$), and pain catastrophizing helplessness ($r_s = -0.339$, $p=0.0015$, $FDR=0.0075$), while controlling for age, BMI, and time in days from pre- to post-treatment assessment. Pain catastrophizing improved as level of function (QoL) improved.

DISCUSSION: Undergoing hip preservation surgery for patients with AD or FAIS improved their hip function and decreased their overall pain level. Furthermore, hip preservation surgery improved pain catastrophizing levels in all 3 scales assessed. Most significantly, a correlation was found between increased hip functional measures and decreased pain catastrophizing postoperatively. This indicates that when patients experienced improved quality of life and were able to complete activities of daily living with more ease, they felt more able to be in control of their pain level and were less likely to feel helpless in managing their symptoms. Improving hip function through hip preservation surgery has shown to significantly decrease patient levels of pain catastrophizing postoperatively in AD and FAIS populations, further underscoring the benefit of surgical hip preservation treatments.

SIGNIFICANCE/CLINICAL RELEVANCE: The results of this study indicated a clinically significant improvement in functional measures and pain catastrophizing in patients who underwent hip preservation surgery further revealing an intricate link between the functional outcomes of hip preservation surgery and pain catastrophizing. This further emphasizes the necessity to approach both physical and psychological pathologies from a multi-disciplinary approach.