

Title:	The Capsular Noose: A New Technique to Reduce Dislocation After Posterior, Single-Incision MIS THA
Abstract:	<p>INTRODUCTION: Dislocation remains one of the most common complications after posterior approach THA. Although repair of the capsule to the greater trochanter has been shown to reduce dislocations, this repair is non-anatomic, reduces hip motion, and is difficult if the posterior capsule is contracted. The "Capsular Noose" repair advances the posterior capsular flap around the prosthetic neck creating a noose constraint around the prosthetic head. The purpose of this study is to determine whether this technique reduces dislocation risk after THA.</p> <p>METHODS: Part A of this study includes 152 consecutive patients undergoing posterior approach MIS THA utilizing the Capsular Noose technique for capsular repair compared to 179 consecutive posterior approach MIS THA's undergoing a more standard repair of the posterior capsule. Dislocation rates and range of motion at minimum 12 months follow-up were compared. Part B of this study includes 12 patients studied intra-operatively using angle and torque measurements to determine resistance to subluxation a) without capsular repair, b) after standard trans-osseous repair to the trochanter, and c) after Capsular Noose repair.</p> <p>RESULTS: One patient (0.66%) in the Capsular Noose group and 8 patients (4.50%) in the control group dislocated during the follow-up period ($p < 0.05$, Chi-square). Range of motion at final follow-up did not differ between the 2 groups. Intra-operatively, with the hip flexed 90° the amount of internal rotation before subluxation was 49.8 degrees (35-70) with no repair, 53.6 degrees with trans-osseous repair (40-70), and 66.4 degrees with Capsular Noose Repair (55-90, $p < 0.05$, ANOVA). Mean torques to subluxation were 0.68 N-m for no repair (0.07-1.11), 0.82 N-m for the trans-osseous repair (0.14-1.52), and 1.05 N-m for the Capsular Noose repair (0.50-1.82, $p < 0.05$, ANOVA).</p> <p>DISCUSSION: Capsular Noose advancement enhances resistance to dislocation after posterior approach MIS THA. This technique provides promise to reduce the dislocation rate after posterior approach THA.</p>