KEY PROCEDURES

SUPERPATH: THE DIRECT SUPERIOR PORTAL-ASSISTED TOTAL HIP APPROACH

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Published outcomes of this procedure can be found at: *Ann Transl Med.* 2015 Aug;3 (13):180.

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Abstract

The supercapsular percutaneously assisted total hip (SuperPath; MicroPort) approach is a direct superior portal-assisted approach for total hip arthroplasty (THA) that utilizes the interval between the gluteus minimus and the piriformis to access the hip capsule. The technique was developed to promote early mobilization, greater range of motion, and improved pain control. The major steps of this procedure are as follows:

Step 1: Patient positioning. The patient is in the standard lateral decubitus position with the involved leg in the “home position,” that is, 45° to 60° of flexion, 20° to 30° of internal rotation, and slight adduction by elevating the foot on a padded Mayo stand.

Step 2: Surgical exposure. A skin incision is made from the tip of the greater trochanter 6 to 8 cm proximally in line with the femur in the home position, the gluteus maximus muscle is split by blunt dissection in line with the fibers, and the gluteus medius and minimus are retracted anteriorly and the piriformis tendon is retracted posteriorly to access to the capsule without dissecting any muscles.

Step 3: Capsular incision. The capsule is incised along the path of the skin incision from the saddle of the femoral neck to 1 cm proximal to the acetabular rim.

Step 4: Femoral preparation. A channel is created in the superior aspect of the femoral neck from the femoral canal to the center of the femoral head, using reamers, a round osteotome, and a curet.

Step 5: Femoral broaching. Sequential femoral broaches are then used to complete the preparation and size the proximal femoral canal while the head and neck remain intact.

Step 6: Neck resection. The femoral neck osteotomy is performed level with the broach neck, and Schanz pins are used to rupture the ligamentum teres and remove the femoral head.

Step 7: Acetabular preparation and placement. Acetabular preparation and cup impaction are done through a portal without needing release of the iliotibial band or remaining external rotators. A sharp

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Romanelli self-retaining retractor (Innomed) and modified Zelpi self-retaining retractor (Life Instruments) are used.

Step 8: Trial reduction. Trial reduction is completed using a bone hook and a T-handle to gently manipulate the femur.

Step 9: Final implant assembly. Liner impaction is completed through the portal, and the remaining components are implanted.

Step 10: Closure. Closure is limited to the capsule, fat, and skin, since no muscles are dissected during this procedure.

A recent multicenter study describing nearly 500 SuperPath THAs noted a 30-day all-cause readmission rate of 2.3% and a transfusion rate of 3.3%⁵. The average length of stay was 1.6 days, with 91% of patients discharged home; 4.1%, to skilled nursing facilities; 3.8%, to home care; and 0.6%, to inpatient physical therapy facilities⁶.

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