INTRODUCTION: Different regional anesthesia techniques have been implemented to decrease postoperative pain following total hip arthroplasty (THA) with varying success. The fascia iliaca block is used to block the lateral femoral cutaneous nerve (LFCN), but has reported 10-37% failure rate. The fascia iliaca block is traditionally blocked below the inguinal ligament by regional anesthesiologists and has been shown to be successful in providing postoperative analgesia following THA. In this series, the SIFI block was 100% successful in blocking the LFCN and femoral nerve. The femoral nerve as seen by the hypoechoic shadow of the ASIS is easily identifiable just cephalad to the insertion of the iliacus muscle. A 4 inch block needle (Stimuplex, B-Braun; Bethlehem, PA) was advanced in an out-of-plane technique to puncture the fascia iliaca and enter the superficial part of iliacus muscle. With the needle tip in iliacus muscle 2 mL of local anesthetic were injected to deposition immediately beneath the fascia iliaca. Pain scores and opioid consumption were recorded in the electronic medical record and at 1, 4, 8, and 24 hours were analyzed.

RESULTS: Nine out of 9 patients were successfully blocked using the SIFI approach, 6 were included in postoperative pain analysis. The 3 patients excluded were removed due to preexisting chronic pain. Lack of sensation was demonstrated in LFCN distribution from the greater trochanter to the superolateral aspect of the knee. Additional, anterior femoral cutaneous nerves were anesthetized without significant loss of quadriceps function. Mean pain scores during the 12 hours of the block were 4.64 on a 10 point scale. Mean opioid consumption was 3.11 ± 0.41 mg of IV morphine equivalents at 1, 4, 8, and 24 hours respectively (table 1). Cadaver dissections showed injection reaching the femoral nerve when injected immediately deep to the fascia iliaca (figure 3). Ultrasound preparation and imaging. (A) Final ultrasound position with lateral aspect of probe slice covering fascia iliaca; IO - internal oblique muscle; TA - transverse abdominus muscle and iliacus muscle. With the needle tip in iliacus muscle 2mL of local anesthetic were injected to confirm location just deep to the iliacus fascia. Once sub-iliacus position was confirmed 30mL 0.2% ropivacaine with 1:400,000 epinephrine was incrementally injected superficial to the femoral nerve as seen by the hypoechoic shadow of the ASIS is easily identifiable just cephalad to the insertion of the Sartorius muscle. Medial to the shadow of the ASIS lies the iliacus muscle. With the ASIS the identified medial end of the probe was rotated to point at the umbilicus. This is the final probe position. Layers identifiable from superficial to deep are subcutaneous fat, the inner oblique muscle, the transverse abdominus muscle, and the fascia iliaca overlying the femoral nerve when injected immediately deep to the fascia iliaca (figure 3).

DISCUSSION: The SIFI block appears to be a viable alternative to traditional fascia iliaca techniques or to femoral nerve block, both which have been used to aid in post-operative analgesia following THA. In this series, the SIFI block was 100% successful in blocking the LFCN and femoral nerve. Postoperative opioid consumption was decreased for the duration of the block with increased opioid consumption after block resolution. SIFI may be beneficial to aid in post-operative recovery by improving analgesia and decreasing opioid consumption. This is the first reported case series using the new SIFI block for postoperative analgesia following THA. Prospective studies of efficacy are now planned.