

HIP PROCEDURES

(‘ARTHROGRAM’: **persisting common misnomer**)

Hip ‘arthrography’ is usually requested either to aspirate fluid for possible infection, and/or as a pain (relief) test. The former requires culture material; preferably joint fluid, second choice saline washed through the joint, third choice needle-tip. For pain studies, inject 8-10 cc’s bupivacaine mixed with 1 cc Kenalog 40 mg. Allow the patient to relax while you clean up the prep tray, then ask him/her to ambulate around the room and to report their perception, if any, of change. Ask them to make note of when, hours or days later, the hip returns to the usual baseline of pain.

1) **SCOUT** – AP view sufficient, if no recent films available. If recent MRI or CT available, check results (is there really a joint effusion? Was fracture, AVN, tumor, found/suspected?)

2) **INFORMED CONSENT** – Risks include **pain**, (since you are using a needle); **bleeding, infection, or allergy to materials** (which are theoretically possible but extremely rare), and **non diagnostic tests** (everything was performed correctly but the answer is still unclear).

If this is a pain study, explain that pain appearing to be in the hip may in fact be from the back or knee; and that this is a test with no “wrong” answers: “You may feel better, worse, or the same”. Patients getting pain relief may expect anesthesia to last 3-4 hours although some get longer relief.

TIME OUT confirms pt. ID (wrist band), DOB, and joint/side of interest-document on Consent.

3) **PREPARE** – The standard prep tray requires a container of betadine, a small container of alcohol, a twenty-five gauge pale blue skin needle (prefer 1.5 inch to 5/8 inch length), a twenty-gauge 1.5-inch needle, a 16 gauge purple needle, and a twenty gauge spinal needle. The purple needle is used to draw up fluids; do not show the patient (turn your back). Two ten cc syringes (for Lidocaine and for aspirated fluid or saline); a twenty cc syringe and fifty cm tubing for contrast. Remind the tech to have non-bacteriostatic saline ready if required. If this is a **pain study**, bupivacaine (8-9 cc) (Marcaine or Sensorcaine) and Kenalog 40 (1 cc) will be needed. LABEL all syringes.

4a) **NATIVE HIP** - Position patient supine, leg extended, tape toes together to keep femoral vessels medial to work field. If the femoral neck from head-neck junction to inter-trochanteric line were a tic-tac-toe board, you’d want the middle square. Localize with mammo-spot and use an indelible pen to mark the spot. Prep area with Betadine times four – spiral out from marked spot to approximately six

inch diameter with front and back of each of two-three sponges. While that dries, finish drawing up solutions – radiographic contrast, (approximately ten to fifteen cc's; add tubing and run contrast to tip before returning to tray); lidocaine 2%, filling a 5 or ten cc syringe; and for **pain studies**, bupivacaine (Marcaine or Sensorcaine), approximately eight cc's, with one cc Kenalogue in the same syringe. (This last syringe will be cloudy, which helps to distinguish it from the other clear fluids on table—but LABEL).

Drape field. With pale blue twenty five-gauge needle, raise wheal and then go perpendicularly down, compressing soft tissue as you inject to reach as deep as you can with this needle. Switch to the spinal needle, advance **with hub in**, until you feel bone. Remove hub, insert tubing, get tech ready to fluoro, and give one **brief** test injection with quick look – intra-articular contrast flows away from needle, usually medially and laterally. If you are sure you are over the mid point of the femoral neck and yet there is no flow, try withdrawing about half a millimeter to see if needle tip was occluded in the periosteum. **Never** advance needle without stylus. Once intra-articular position confirmed, use empty syringe to test for possible aspirate. If fluid returning, remove as much as possible for culture, Gram, and cell count. If needle is intra-articular but no free fluid, inject five to ten cc's of **non-bacteriostatic** saline and try again. If this does not produce fluid for culture, “walk” the needle tip gently over a few millimeters of bone, and then stab-culture the needle tip by advancing it into the culture bottle and into the medium substance. Once the needle is removed, reassure the patient “it will not be going back in”; proceed with cultures. Wipe skin clean with alcohol, briefly check groin for hematoma and intact pulses.

4b) **HIP ARTHROPLASTY** - Anterior approach more difficult because needle cannot be visualized against background of metal stem. However, to localize, you can criss-cross two metal clamps, one under and one on top of, pt: take a Halsted (straight) clamp and slide it under the pt's hip and gluteal area, perpendicular to the long axis of the patient and the table, so that it cross-hairs the mid femoral neck target. Leave this under the patient. Take a second clamp and place it obliquely over the estimated target area of the anterior groin, and fluoro to establish the mid neck position as above. Proceed with skin mark and procedure as above. The spinal needle should advance until it hits metal, at which point test injection is performed. You may need slightly larger test volume and more pressure; the capsule is small and scarred following surgery. It will also take longer fluoro to confirm visualization of contrast on each side of the neck; flow will not be as apparent as in a native hip but if contrast appears to each side of the metal neck it is intra-articular. Proceed as above, with aspiration, saline, and/or needle tip culture. Be reminded post-op hips, unless grossly infected, rarely have free fluid; rub needle along metal, if 'dry' tap, and stab needle tip into culture. Make note of same on paperwork.

