



Musculoskeletal Imaging and Intervention Section Procedures CT-Guided Piriformis Muscle Wire Localization

INDICATIONS

- Dr. Hanna does piriformis release procedures for people who have appropriate symptoms that have shown temporary relief following an image-guided piriformis injection
- He needs the piriformis localized and the sciatic nerve mapped

RISKS

- Hematoma • Pain • Infection • Nerve damage

MATERIALS

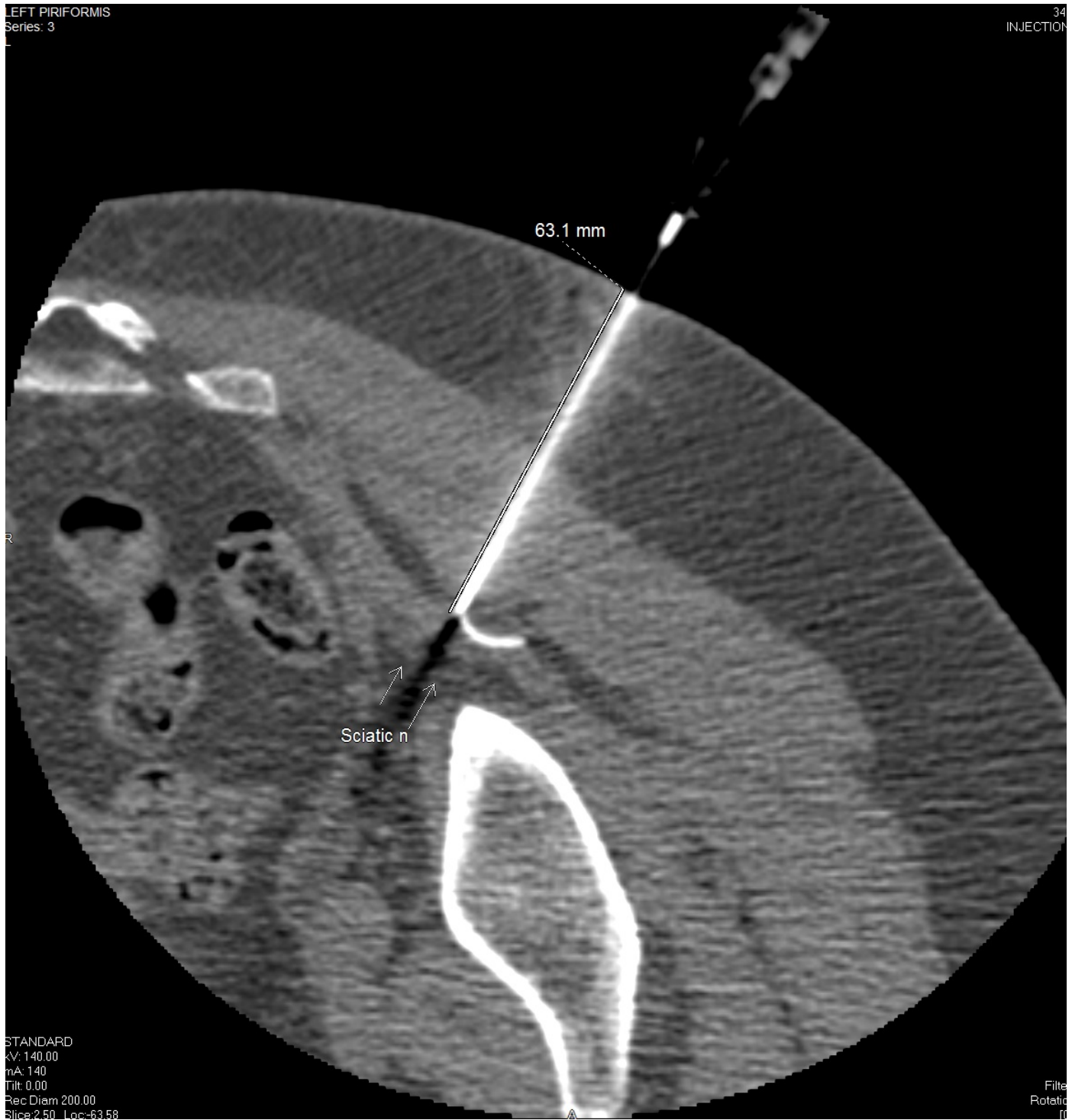
- 1% lidocaine (for skin numbing); preferably buffered with sodium bicarbonate
- Appropriate length Homer wire localization device

DR. HANNA'S EXPECTATIONS/REQUESTS

- Insert wire directly into piriformis muscle, preferably the lower/caudal/distal margin, near the point at which the sciatic nerve emerges
- Mark out the inferior border of the piriformis
- Mark out the course of the sciatic nerve ~10 cm from the piriformis caudally
- Measurements: skin to gluteus muscles, thickness of gluteal muscles, depth of skin to piriformis, depth of sciatic nerve

TECHNIQUE

1. Place a dilator, with most of the dilator anticipated to be caudal to the piriformis so as to be able to mark out the sciatic nerve as well
2. Pre-scans from the top of sciatic notch down to mid femoral head, use 'Standard' kernel, not BonePlus.
3. Select the CT slice 1cm above the inferior edge of the piriformis.
4. Select shortest path to the sciatic nerve, typically ~30° from lateral to medial.
5. Anesthetize down to the deep gluteal space and piriformis muscle.
6. Again, use Standard kernel for CT-fluoro. Place wire loc needle down to just thru the piriformis fascia, aiming for the sciatic nerve
7. Deploy the wire with it curving laterally.
8. Fix and drape the wire.
9. Record the depth from skin to piriformis fascia.



POTENTIAL PITFALLS

1. Piriformis may be thin ant-to-post 1cm above its inferior edge. Deploying the wire laterally reduces the chances of it skewering the sciatic nerve
2. Amgad asks that the wire be deployed at least piercing the posterior piriformis fascia
3. Pitfall: using BonePlus kernel – cannot see the sciatic nerve well. Not using enough kV & mA
4. Aim to the sciatic nerve, not the vessels that run in a similar course but medial to the sciatic nerve.