



Fig 1. Staged photograph showing transducer and needle orientation during ilioinguinal block.

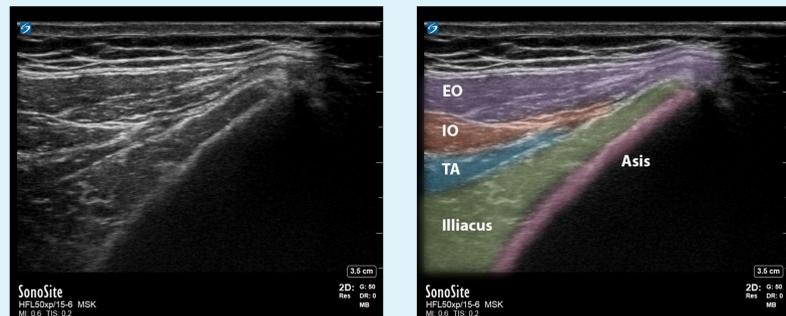


Figure 2a (left) Pre-injection ilioinguinal block ultrasound image; Figure 2b (right) same image with labels

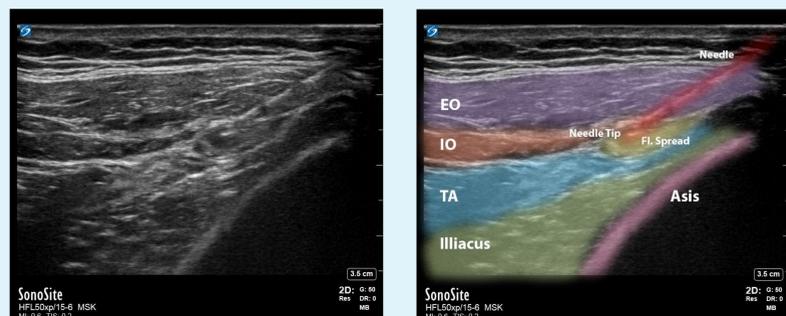


Figure 2a (left) Post-injection ilioinguinal block ultrasound image; Figure 2b (right) same image with labels

Ilio-Inguinal Blocks and Opioid Sparing Anesthesia for EVAR before CABG: A Case Report

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Introduction

Endovascular aneurysm repair (EVAR) is the standard of care for repair of large or unstable abdominal aortic aneurysms (AAA) in patient who do not have anatomic vascular abnormalities warranting open repair. The femoral artery is the most common entry point for EVAR, with a groin incision providing vascular access. Unfortunately, this approach can cause significant postoperative discomfort and pain. Poor pain management during the early postoperative period can cause significant issues with the patient's pulmonary (pneumonia, splinting, atelectasis, bronchial secretions), cardiovascular (increased oxygen consumption and tachycardia), and endocrine (stress response, hyperglycemia) systems. In this case report, we briefly describe using a combination of ilioinguinal blocks and multimodal analgesia for a patient undergoing EVAR with robust pain control and high patient satisfaction. Written consent for publication of non-identifying medical information and Health Insurance Portability and Accountability Act authorization was obtained from the patient.

Case Description

An 85-year old male with a past medical history of coronary artery disease, chronic kidney disease, and obstructive sleep apnea presented to the ED with an NSTEMI. Following admission, coronary angiography was performed and revealed the need for three-vessel CABG to provide adequate long-term coronary revascularization. However, abdominal ultrasound revealed a 6.7 cm AAA. Multidisciplinary discussion between anesthesia, cardiothoracic surgery, and vascular surgery determined that the AAA was sufficiently unstable to pose a significant risk of mortality during open-heart surgery, and AAA repair would be necessary prior to CABG.

Due to the patient's severe coronary artery disease, it was decided that an endovascular approach using a multimodal opioid-sparing technique consisting of monitored anesthesia care and bilateral ilio-inguinal blocks would be the safest course of action.

Case Description (continued)

At the time of surgery, monitored anesthesia care was initiated with dexmetomidine 0.2 mcg/kg/hr and remifentanyl 0.5 mcg/kg/min. After skin disinfection with a Chlorhexidine 4% prep stick, sterile draping was placed over the patient's inguinal region and the ultrasound probe was sheathed. Surface landmarks, including the ASIS, the inguinal ligament, and the line connecting the ASIS to the umbilicus, were identified. The block was performed with a SonoSite X-Porte HFL50xp (15-6 MHz) linear ultrasound probe, which was positioned in a superomedial to inferolateral plane (perpendicular to the expected course of the nerve) at the ASIS. The ultrasound probe was slowly moved proximally along the line between the ASIS and the umbilicus until the ilioinguinal nerve was visualized approximately 2 cm from the ASIS in the facial plane between the internal oblique and transversus abdominus muscles. A 22 G, 50 mm insulated needle (Sonoplex Stim, Pajunk, Germany) was inserted initially inferolateral to the US transducer and guided superomedially within the plane of the image as it was advanced deeper. After negative aspiration, 15 mL bupivacaine 0.25% with 4 mg dexamethasone was injected into the facial plane immediately adjacent to the ilioinguinal nerve. The block procedure was then repeated on the contralateral side.

EVAR was uneventfully completed. The patient reported no groin or abdominal pain and experienced no chest pain. Patient data shown below:

Postop Day	Pain Score	Opioid Consumption	MEQ	Cumulative MEQ
0	0	None	0	0
1	0	None	0	0
2	0	None	0	0

As noted, no analgesics were required prior to discharge 48 hours later. He underwent uncomplicated triple vessel CABG on POD #13, and was discharged six days later.

Discussion

In this case report, we report the successful use of regional anesthesia with ultrasound guided ilioinguinal blocks to provide an opioid-sparing anesthetic for a patient undergoing endovascular repair of an aortic aneurysm. The use of ilioinguinal blocks is a relatively new method for providing analgesia for EVAR, where either general anesthesia or injection of local anesthetic in combination with significant doses of IV medication were previously used. The rationale for the use of ilioinguinal blocks is to provide more proximal and complete nociceptive blockade of the operative field than can be achieved with local anesthesia so that fewer and smaller doses of IV opioids are necessary to provide adequate pain control. Another important element of the anesthetic regimen included preemptive administration of dexmedetomidine, which has been shown to have anti-allodynic properties. The efficacy of the described regimen is evidenced by this patient's complete lack of postoperative opioid consumption, which shortened the burden of his recovery from EVAR and allowed for the safe completion of surgical coronary revascularization shortly thereafter.

References

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