

CT Guided Renal Hilar Block: Why and How We Do It

Rulon Hardman MD PhD, Jeff Campsen MD, David Besachio DO, Ryan O'Hara MD, Blake Hamilton MD
University of Utah, Salt Lake City, Utah

PROCEDURE DETAILS

Pre-procedure history is obtained by the interventional radiologist if the procedure is performed for flank pain. Duration of patient symptoms, side of pain, onset and character of the pain are important information to record about the pain. The severity of pain is recorded on a 10-point scale prior to the hilar block.

Patients are positioned prone for flank pain hilar block injections or for calculus pain injections. If the injection is during an ablation, the patient should be optimally positioned for renal ablation, which typically allows for CT access to the renal artery.

Nerves to the kidney are along the superior, inferior, and posterior aspects of the renal artery. Oldham describes that the nerves along the posterior renal artery are predominantly from splanchnic branches, perhaps the most involved in flank pain.

A 21 G needle is placed at the posterior aspect of the renal artery by CT guidance.

Aspiration is made to confirm that the needle tip is not within the renal artery.

A mixture of 10 mL of Lidocaine 2% and 10 mL Bupivacaine 0.5% is injected around the artery.

Post nerve block pain levels are determined.

We have tried injecting 40 mg triamcinolone in addition to the Lidocaine/Bupivacaine mixture. Patients did not have any prolonged duration of pain relief, so we have stopped this practice.

Flank Loin Hematuria Pain Syndrome

Flank loin hematuria pain syndrome (LPHS) is a poorly understood cause of flank, abdominal, and groin pain. Patients present with burning or throbbing pain. Pain can radiate to the thigh, groin, or abdomen. Pain tends to be worse with riding in a car or exercise. Often these patients are seen at chronic pain clinics, with opioids as the mainstay treatment.

We consider a decrease of 50% of the patients 1-10 pain score after the block to be considered a positive diagnosis for LPHS in the appropriate patient.



57 year-old male with a history of chronic flank pain. He has had kidney stones on the left leaving him with pain that is limiting his ability to work. He had evaluation for FPHS including CT guided renal hilar block. A 21 G needle was placed along the left renal artery. Pain before procedure was only 3, with minimal pain improvement after block. He was not offered autotransplant.

Renal Ablation

Most patients do not have severe pain after renal ablation, but most patients do require opioid medications after the ablation. Hilar block can be performed during the ablation to decrease post operative pain for the first night after ablation. Many of our patients will only take oral Acetaminophen after microwave ablation or cryoablation when receiving a renal hilar block. Renal hilar block also seems to decrease procedural pain if performing the ablation under conscious sedation.

For posterior exophytic lesions, intercostal block may also help post-procedure pain.



63 year old male with a 2.1 cm clear cell renal carcinoma (A). He underwent microwave ablation using two short tip Perseon microwave ablation probes under general anesthesia (B). A mixture of Lidocaine and Marcaine was injected at the ipsilateral renal artery. Post-operatively, he only required Acetaminophen every six hours.

Renal Calculi Pain

It is not our practice to routinely perform renal hilar blocks for renal colic pain. The technique can be used for patients with pain refractory to opioids.

Complications

We have seen no complications in over 100 hilar blocks. The genitofemoral nerve can be also blocked during the procedure if the needle is placed too medial, leading to muscle weakness in hip flexion. Strength returns after Bupivacaine effects have passed.

21 year old female with a history of flank pain over four years. She goes to the ER once a month. When she has pain, she has gross hematuria. She has had ureteral stones, but no stone on non-contrast CT. She is on chronic opioids. She had CT guided renal hilar block. Her pain decreased from 6/10 to 1/10. She subsequently underwent autotransplant.



Conclusion

Renal hilar block is an easy procedure for the interventional radiologist. The procedure can be used for diagnostic purposes as well as to decrease patient pain after ablation. Surprisingly, blood pressure changes are not seen after this pain block.

References

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