

Introduction

Nutcracker Syndrome is a rare condition where the left renal vein is primarily compressed between the aorta and superior mesenteric artery (SMA). Clinical manifestations vary, but commonly include hematuria, left sided flank pain and autonomic dysfunction.

When conservative management fails for Nutcracker Syndrome, surgical options include renal or gonadal vein transposition, venous bypass, renal autotransplantation, and endovascular stenting. A nephrectomy is reserved for cases nonamenable to venous decompression.

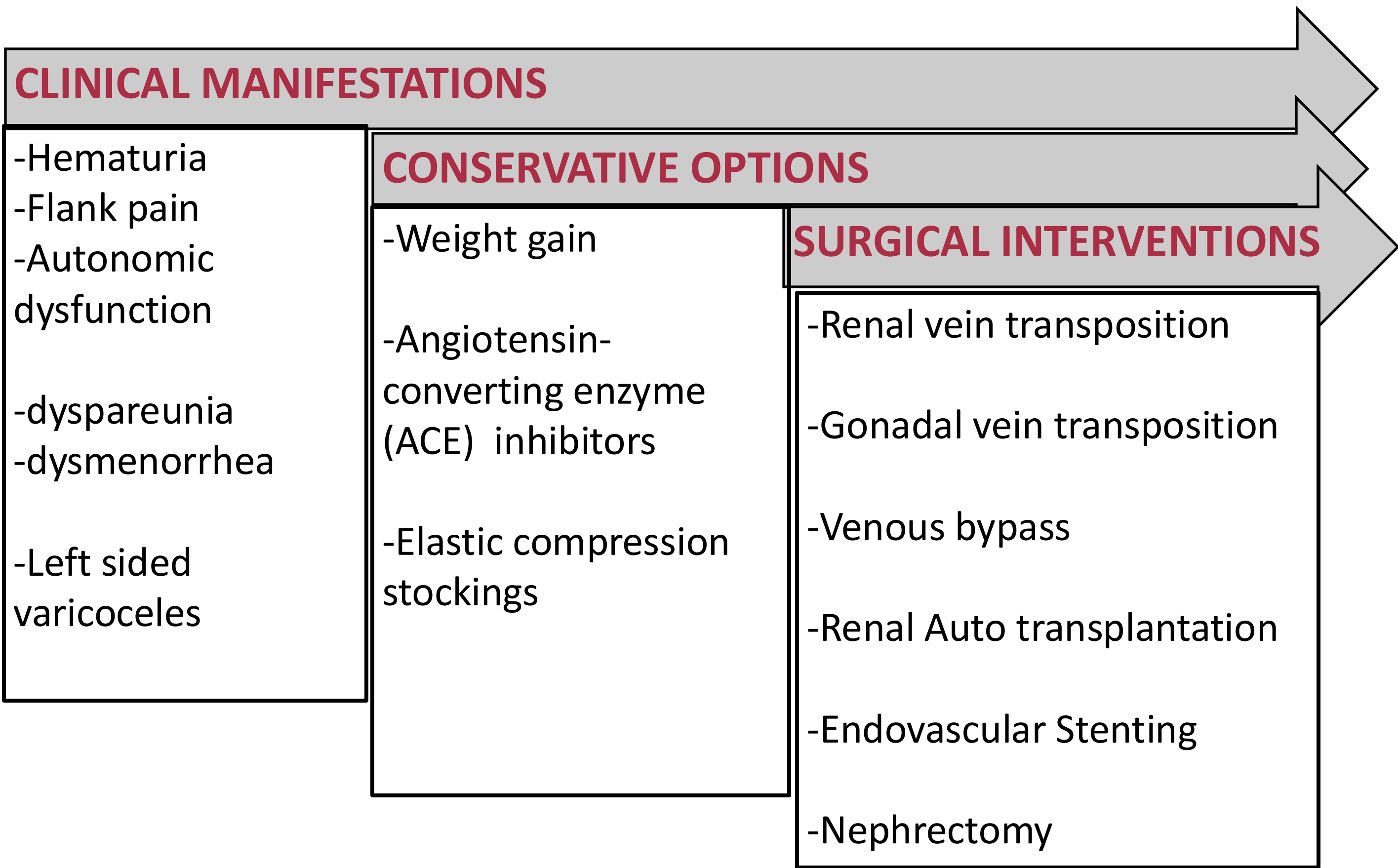


Figure 1: Clinical Manifestations and Initial Interventions for Nutcracker Syndrome

Material & Methods

As the case report is devoid of patient identifiable information, it is exempt from IRB review requirements as per Temple University policy. Patient informed consent was obtained for publication of case.

Case Presentation

A 59 year-old-female with history of cachexia, nutcracker syndrome and slipped rib syndrome, previously treated with multiple rib surgeries, presented with chest wall pain and anxiety about perioperative pain management for her nephrectomy, scheduled one week from initial pain clinic appointment. During the preceding year, she underwent six surgeries on her left rib cage. Surgeries included rib plating, resections, and cartilage grafting of ribs 8-12, for which she has continued chest pain. Over the past 3-4 years, her Nutcracker Syndrome has led to worsening left sided abdominal, pelvic and flank pain, significantly impacting her activities of daily living.

She was evaluated for additional surgery to stabilize her rib cage with the plan of having a custom prosthesis developed and placed. With no symptom relief of her abdominal pain following conservative management of her nutcracker syndrome, she was evaluated and scheduled for therapeutic nephrectomy and kidney donation. Most recent CT A/P imaging and IR renal venography showed abrupt caliber change and narrowing of the left main renal vein up to 70% between the aorta and SMA consistent with the findings of Nutcracker Syndrome.

Prior to being referred by the transplant service, the patient was under the care of a pain specialist near her home, out of state. Medication trials included Cymbalta, Vicodin, Valium, Tramadol, and Norco, with ongoing use of the latter three. An intrathecal (IT) trial showed positive results, and an IT pump was considered. As the patient was out of state primarily for her scheduled nephrectomy and planned to follow up with her primary pain specialist, there was no additional role for chronic pain management at the new clinic visit. Recommendations were made to consult the acute pain service as needed during hospitalization, which the patient agreed with and was pleased about.

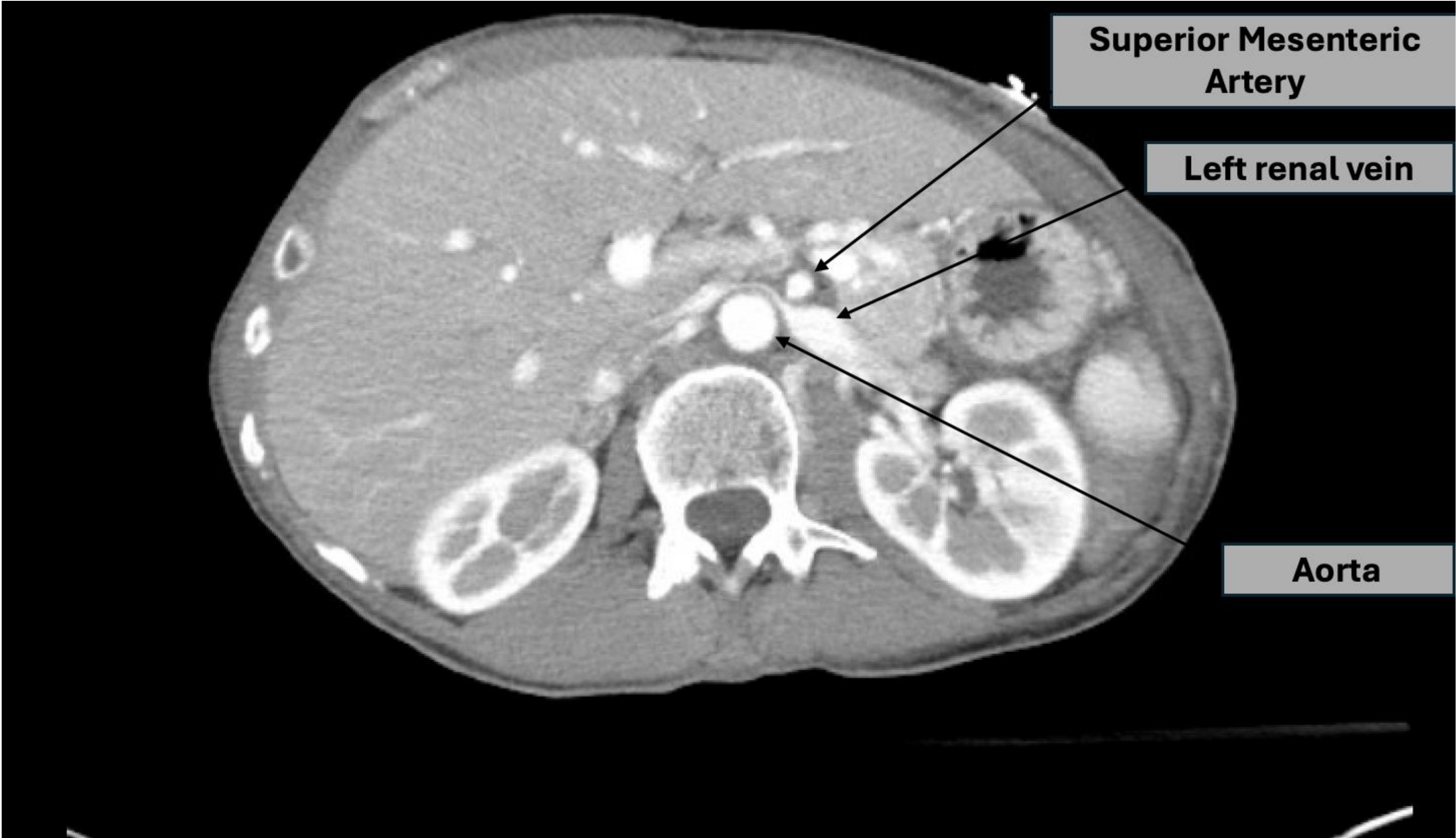


Figure 2: Axial CT View Demonstrating Nutcracker Findings

Discussion & Conclusion

Treatment of nutcracker syndrome can be quite broad. When pain is refractory to conservative and surgical management, medication trials and interventions such as a celiac plexus block (CPB), ganglion impar block, and intrathecal pump are considerations. A CPB can help alleviate debilitating abdominal discomfort by targeting visceral afferent pain fibers from several abdominal organs including the kidneys. A ganglion impar block can help alleviate poorly localized pelvic pain and intractable perineal pain. Although IT pumps are more invasive, they can provide sustained relief in the right clinical context.

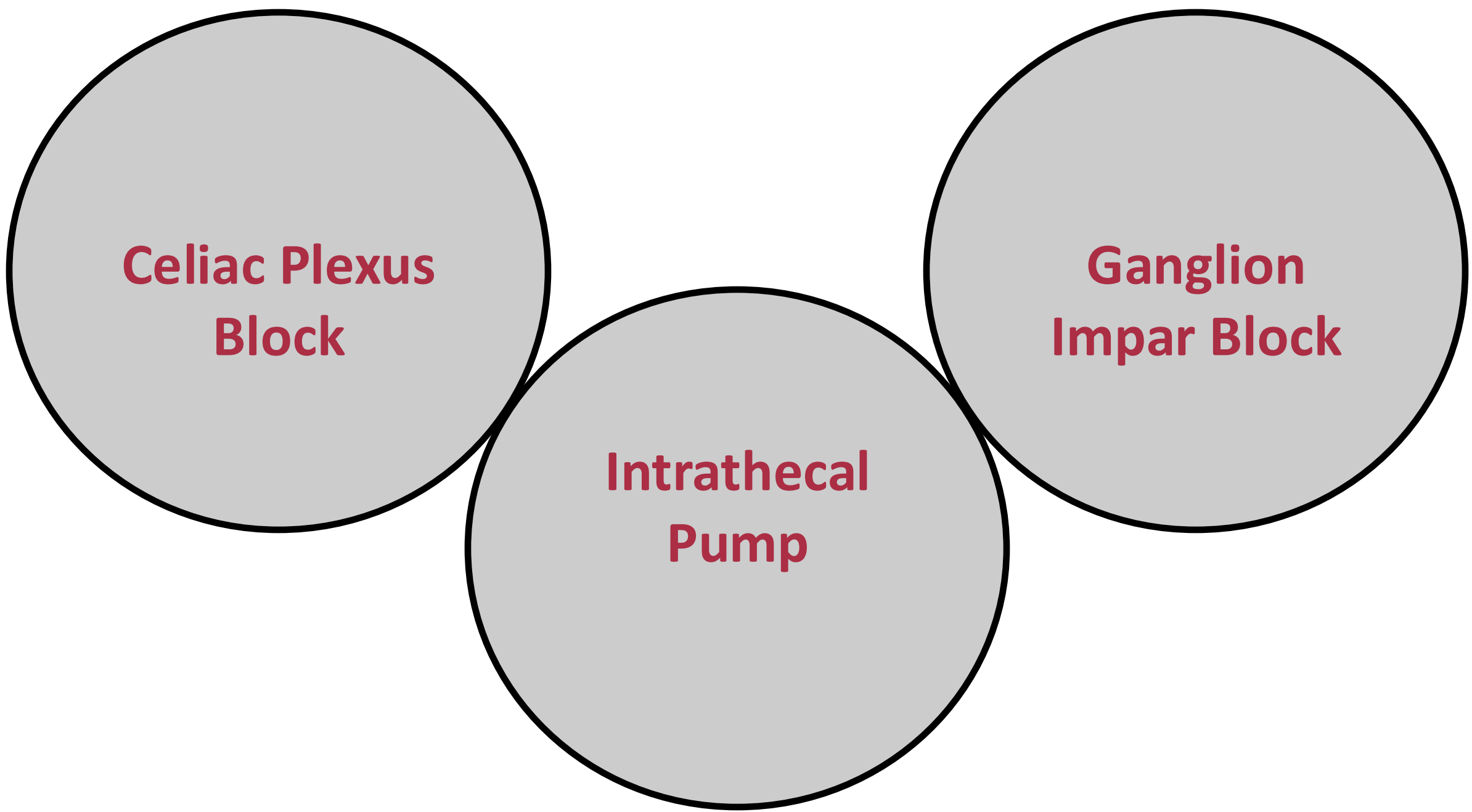


Figure 3 : Pain Management Options for Nutcracker Syndrome Refractory to Conservative & Surgical Interventions

References

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