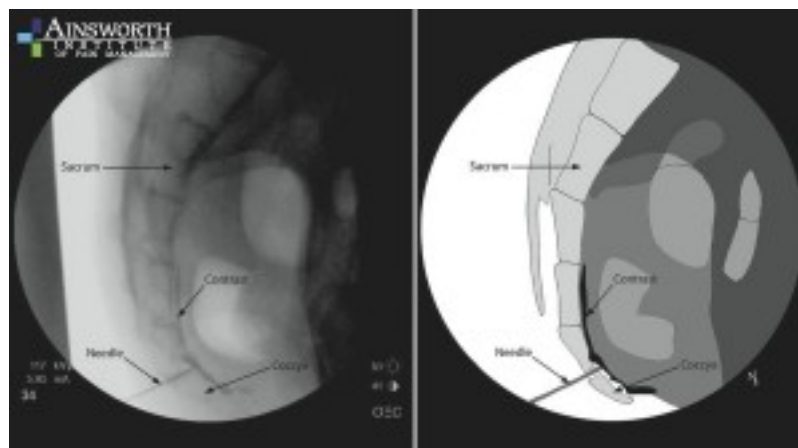


Ganglion of Impar Block



A ganglion of impar block is safe and easy procedure used to treat visceral, pelvic, genital, perineal and anal pain. This injection is considered to be a type of sympathetic block that can be used in the treatment of sympathetically-mediated pain, pain secondary to malignancy, neuropathic pain and post-surgical pain.

Patients who will benefit from this blockade will frequently present with vague and poorly localized pain in the “seat” region, which is burning in character and frequently accompanied by sensations of urgency with urination and/or defecation.[1]

The target in the procedure is the ganglion of impar – also known as the ganglion of Walther or sacrococcygeal ganglion. It is a singular retroperitoneal structure located at the level of the sacrococcygeal junction (SCJ). There are 4 or 5 small sacral ganglia with the ganglion Impar being the most caudal segment of the confluence of the sacral sympathetic chain as it passes anteromedially over the sacrum. More specifically, the ganglion Impar is the terminal fusion of the 2 sacral sympathetic chains and is located with some anatomical variability between the SCJ and the lower segment of the first coccyx. The fusion of the 2 chains typically positions the ganglion midline, which makes it relatively easy to find. However, there is a wide range of variability in the anatomical location with respect to the SCJ.[2]

This structure is of particular importance when considering patients who suffer from pain in the pelvic and perineal structures as it provides nociceptive and sympathetic supply to those regions. It receives afferent innervation from:

- Perineum
- Distal rectum
- Anus
- Distal urethra
- Distal vagina
- Vulva
- Coccyx
- Scrotum

The block is performed by injecting a small amount of anesthetic onto the ganglion of impar, signals of the [sympathetic nervous system \(SNS\)](#) and pain fibers are interrupted from multiple structures simultaneously, leading to dramatic pain relief. This procedure was first described by Plancarte in 1990. [3] Since then the indication for this treatment have grown dramatically:

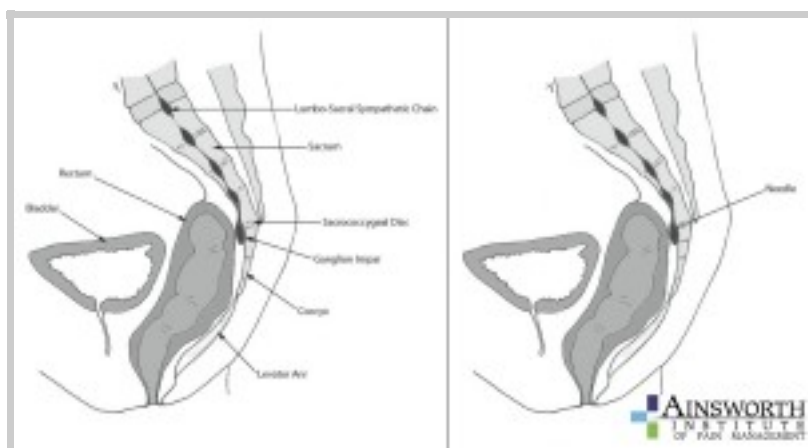
- Perineal pain, with or without malignancy
- Rectal/Anal pain (proctitis)
- Distal urethral pain
- Vulvodynia
- Scrotal pain
- Female pelvic/vaginal pain (distal 1/3)
- Sympathetically-maintained pain to the region (i.e. [Complex Regional Pain Syndrome](#))
- Endometriosis

- Vaginal protrusion
- Chronic prostatitis
- Failed Back Surgery Syndrome (FBSS)
- Proctalgia Fugax
- Post-surgical thrombosis of the perineal veins
- Coccygodynia[4]
- Radiation proctitis[5]
- Postherpetic neuralgia[6]
- Burning and localized perineal pain associated with urgency

Procedure

Plancarte et al first reported the successful relief of perineal pain through the blockade of the ganglion impar in 1990.³ He pioneered the initial anococcygeal approach by utilizing a curved needle that makes initial contact with the skin between the anus and coccyx and directing the needle anteriorly between the coccyx and rectum. Through the years, techniques have evolved with the use of fluoroscopy, computed tomography (CT) and ultrasound, and the utility for its potential relief of patient remains relatively unquestioned. All in all, these constant modifications aim to reduce the risk of contact with surrounding structures, increased accuracy all the while decreasing the overall risk of complications. To date there are 6 accepted approaches for performing a ganglion of impar block:

- Anococcygeal approach with single-bent needles³
- Anococcygeal approach with curved needle[7]
- Coccygeal (transdiscal) joint approach
- Paramedian approach with double-bent needle[8]
- Sub-transverse process of coccyx approach[9]
- Trans-sacrococcygeal approach[10]



Of the above, the trans-sacrococcygeal approach remains the most popular due to its simplicity and efficacy. This technique minimizes the potential risk of rectal perforation as advancing the needle is precisely controlled and monitored in the lateral view of fluoroscopy. It also circumvents the problems with altering the needle's shape, while avoiding needle passage through the skin in close proximity to the patient's pain complaints.

This treatment is generally performed under local anesthetic although IV sedation can be provided for additional comfort if needed.

You will be placed on your stomach, lying face down, with monitors in place to track your vital signs during the procedure. Before starting, the skin on your lower back/upper buttock region will be cleaned with a sterile soap and then draped in a sterile manner to minimize the risk of infection. A small amount of local anesthetic will be used on the skin at the intended point of the procedure. Once the skin and the underlying tissue are sufficiently numb, a thin needle will be advanced with the aid of fluoroscopic guidance. The needle is slowly advanced between the junction of the sacrum and the coccyx with the tip positioned just beyond the anterior border of the sacrum. A small amount of contrast dye will then be injected to verify the correct position of the needle.

At this point, either a diagnostic or therapeutic block will be performed.

- **Diagnostic Block** – a small amount of local anesthetic (Lidocaine or Bupivacaine) is injected to test the patient's response to a block of the ganglion of impar
- **Therapeutic Block** – in patients with a positive response to the Diagnostic Block (i.e. a temporary decrease or elimination in pain and symptoms), a Therapeutic Block will follow with the injection of a neurolytic agent such as dehydrated alcohol or phenol. Radiofrequency ablation can also be used to perform this step.

The entire procedure takes less than 10 minutes. Once the procedure is complete, a small dressing will be placed and you will be transferred to the recovery area. In most cases, patients will begin to describe

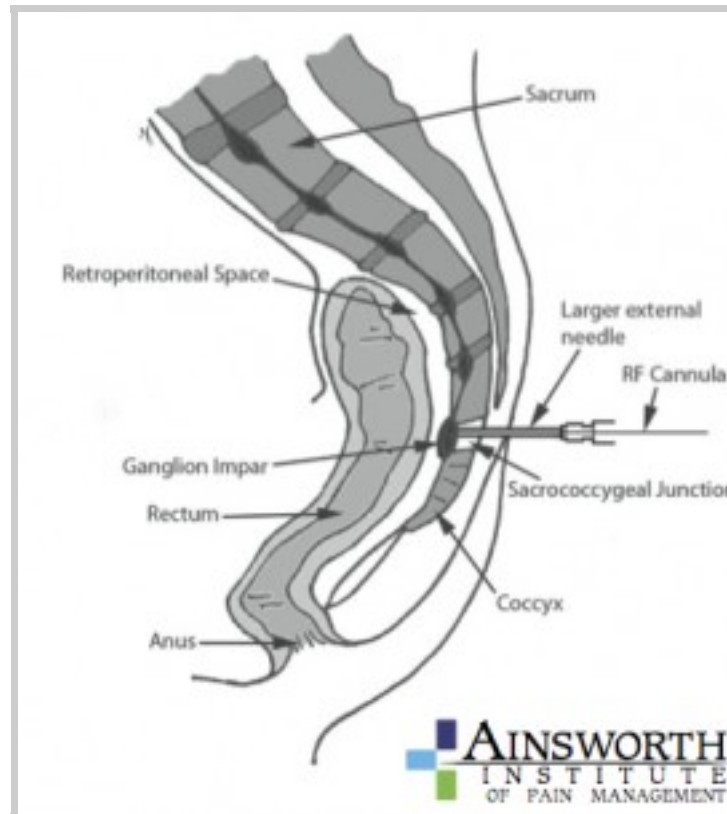
relief in a matter of hours.

Benefits

A ganglion of impar block is a minimally invasive procedure that is easy to perform and can be used to treat recalcitrant visceral, pelvic and genital pain. This injection can be performed in a matter of minutes right in your doctor's office.

The most important aspect of this procedure is its ability to offer powerful pain relief, even in the presence of malignancy. Patients can expect anywhere between 50-100% pain relief from this injection.³[11],[12] As a variety of pelvic structures have nerve fibers that travel through the ganglion of impar, a block performed here can treat multiple areas of pain simultaneously.

The location of the ganglion of impar makes it ideal for Radiofrequency Ablation. The preferred technique for this is "needle-in-needle." In this method, one needle is placed in the manner described above and then a second, smaller needle (RF cannula) is placed within the first needle with the tip just beyond the tip of the first. Finally, a thin RF probe is placed through the second, smaller needle.^[13]



Risks

Due to the ease with which this procedure can be performed, complications are few and far between. A ganglion of impar block is considered an appropriate treatment for visceral, pelvic, genital and perineal pain, even in the presence of malignancy or sympathetically-driven pain processes. There is a rare potential for bleeding, infection, perforation of the rectum and/or bowel, bladder incontinence, hematoma, and nerve root injury. Cauda equine syndrome is another potential complication as well as sacrococcygeal discitis due to the needle's passage through the sacrococcygeal junction. Given the variable location of the ganglion in relation to the junction, there is the potential for the block to be ineffective, even in the presence of a proper technique and needle placement. This will necessitate a repeat procedure with a different approach.

As many patients seeking this procedure suffer from malignancy, there are some basic concerns which must be considered before opting for this block.

- Immunocompromised patients are potentially at high risk for infection, this is of particular relevance in patient with malignancy
- Patients with metastatic cancer pain may have local masses in the region
- Patients may have thrombocytopenia secondary to chemotherapy
- Patients with allodynia could benefit from this injection may also have pain in the very area of the injection which could complicate the ability of one to tolerate the procedure
- Prone position may be difficult if patient has abdominal distension
- Patients suffering from radiation proctitis may have skin breakdown in the area, which might contraindicate injection
- Presence of a rectal fistula

Evidence

A ganglion of impar is an established treatment for sympathetically driven pain and pain secondary to malignancy in the viscera, pelvis, genitals and perineum. The efficacy of this injection is unquestioned; as such, learning this procedure is part of the curriculum at the top teaching institutions throughout the United States. The procedure was first introduced in 1990 by Plancarte at the MD Anderson Cancer Center in an effort to treat cancer patients suffering from pain secondary to their malignancies.³ In this landmark publication, Plancarte treated 16 patients suffering from cervical, endometrial, bladder, colon, and rectal cancers with extension into the perineum. Patients receiving the ganglion of impar block reported between 60% to 100% pain relief. This impressive level of success paved the way for a number of subsequent studies that further reinforced the validity of the procedure.

Other studies on ganglion of impar block and neurolysis have reported 70% to 100% pain relief for perineal pain caused by cancer of the cervix, colon, bladder, rectum, or endometrium.¹ The value of this

modality extends beyond cancer pain. Agarwal-Kozlowski and colleagues evaluated the efficacy of a ganglion of impar block on 43 patients whose pain included vaginal protrusion, postherpetic neuralgia, spinal cord malformation, testicular ablation, perineal vein thrombosis, undiagnosed perineal pain, as well as pain secondary to malignancy.^[14] The authors reported a statistically significant 4-fold decrease in pain when treated with this injection up to 4 months following the procedure. This was further reinforced by a study in 2005 on non-malignant pain treated with neurolysis of the ganglion of impar.^[15]

If you are suffering from pain in the viscera, pelvis, genitals and/or perineum that has failed to respond to conventional treatment, you may benefit from this truly life changing procedure. In blockade of the ganglion of impar can decrease or even eliminate chronic pain originating from the perineum, distal rectum, anus, distal urethra, distal vagina, vulva, coccyx and scrotum – simultaneously. To learn more about this procedure and find out if you are a candidate, contact the Ainsworth Institute of Pain Management today and speak with one of our board certified specialists.

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