

Review Article

INTERVENTIONAL PAIN MANAGEMENT -GANGLION IMPAR BLOCK

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ABSTRACT

Ganglion Impar also known as Ganglion of Walther is the terminal ganglion of the sympathetic trunk. It is an unpaired solitary retroperitoneal structure at the level of sacrococcygeal junction. Ganglion provides nociceptive and sympathetic supply to perineal structures. Visceral pain in the perineal area associated with malignancy, neuropathic pain, post herpetic neuralgia and coccydynia can be effectively managed by ganglion impar block.

Keywords: Ganglion Impar, Terminal, Sympathetic Trunk, Visceral Pain, Malignancy, Neuropathic

INTRODUCTION

The Ganglion Impar block is an excellent way, to treat chronic, neuropathic perineal pain of visceral origin and / or sympathetic pain syndrome secondary to malignancy. Poorly localized perineal pain, frequently accompanied by sensations of burning or urgency may benefit from this block. It is considered to be the standard approach to relieve the chronic pelvic and cancer pain by blocking nerve impulses. Since the ganglion impar receives afferent pain fibers from the perineum, distal rectum, anus, distal urethra, vulva, and distal third of vagina this block can potentially alleviate pain originating from these regions. The available literature reviews reveal ganglion impar block also been used to manage nonmalignancy associated pain; like sacral postherpetic neuralgia (SPN), spinal cord malformations and failed back surgery syndrome (FBSS). Emerging evidence suggests that due to its sympathetic innervations a ganglion impar block may provide relief to patients with perineal hyperhidrosis (excessive sweating). This review will provide an update on ganglion impar block.

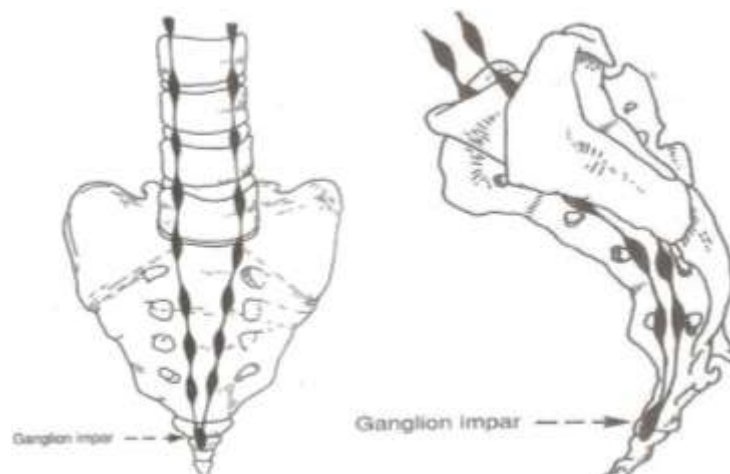


Figure 1: Ganglion Impar

Anatomy of Ganglion Impar

The ganglion impar is the lone unpaired autonomic ganglion in the body and represents the terminal coalescence of the two sympathetic chains. This ganglion is present at the level of coccyx anterior to the sacrococcygeal joint in the retroperitoneal region. However, Oh *et al.*, (2004) found that the location, shape and size of ganglion impar are variable. The authors found that the location of the ganglion impar

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can range from the sacrococcygeal junction to approximately 10mm anterior to the tip of the coccyx, with majority of the ganglia impar being located approximately 25-30mm anterior from the tip of the coccyx (Oh *et al.*, 2004). This variation may contribute to an accidental inefficacy of this block in some patients.

History

The history of Ganglion Impar (Ganglion Walther) block goes back to is 1990 with the first report by Plancarte R *et al.*, 1990 author's provided the block for perineal neuralgia of pelvic cancer.

Indications

Perineal pain originating from:

- Perineum
- Distal rectum
- Anus
- Distal urethra
- Vulva
- Distal 3rd of vagina

Perineal pain secondary to

- Cancer metastasized to perineum (cervical, prostate, testicular and colorectal etc)
- Sacral postherpetic neuralgia
- Post surgical thrombosis of perineal veins
- Spinal cord malformations
- Vaginal protrusion
- Failed back surgery syndrome
- Testicular ablation

Miscellaneous

- Perineal hyperhidrosis

Contraindications

Contraindications to the block include:

- Local infection
- Coagulopathies
- Distorted Anatomy of the region

Procedure of the block

Procedure involves through physical examination and consent (informed consent of the patient). Since the first description of the technique by Plancarte *et al.*, (1990) of accessing the ganglion impar with horizontal approach through the anococcygeal ligament researchers to date continue to introduce modified techniques that provide ease of performing the block, while maintaining patient safety and increasing pain alleviation (Patt and Plancarte 1996; Plancarte *et al.*, 1990; Gupta *et al.*, 2008). Techniques include: different approaches, transsacrococcygeal ligament approach (Toshniwal *et al.*, 2007), transsacrococcygeal joint approach, paramedial approach (Allister, 2007) and paracoccygeal cork screw approach (Foye and Patel 2009); various positions prone, lateral and lithotomy; different visualization techniques like fluoroscopic guidance, ultrasound and CT and lastly different needles- like curved needle technique and needle inside needle technique^[8]. Of the above mentioned transcoccygeal remains the most popular approach due to its simplicity and effectiveness.

Usually under a strict aseptic precautions skin is adequately anesthetized and the needle advanced under fluoroscopy guidance to the correct position, needle placement may also be confirmed by the administration of contrast dye. Once position gets confirmed either a diagnostic block or a therapeutic block is performed. A successful block is assessed by marked pain relief. Local anaesthetic is usually administered for diagnostic ganglion impar block and for patients with non cancer related pain. Following documented response to the administered local anaesthetic on to the ganglion impar, a therapeutic block is performed with neurolytic agent like phenol or alcohol. Radiation of the ganglion impar is also another treatment modality for longer lasting pain relief. The procedure usually takes 15 minutes.

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Diagnostic block performed with 0.25% Bupivacaine or 2% Ropivacaine with 80 mg of Methyl prednisolone (Depomedrol) total volume of 10 ml. Following profound pain relief neurolytic block carried out with 4-6 ml of 8% Aqueous Phenol.

Complication of the Block:

- Rectum rupture
- Neurolytic injection into nerve root and rectal cavity
- Neuritis / nerve root injection.

Among the various techniques to the Ganglion Impar block, Transcoccygeal approach for the management of chronic pain has shown a promising result with minimal complications or without any complications.

Equipments required:

- 25 Gauge $\frac{3}{4}$ - inch infiltration needle
- 2 ml Syringe
- 10 ml syringe
- 22 Gauge $3\frac{1}{2}$ inch spinal needle bend to 30 degree and 60 to 90degree

Needle for Impar block

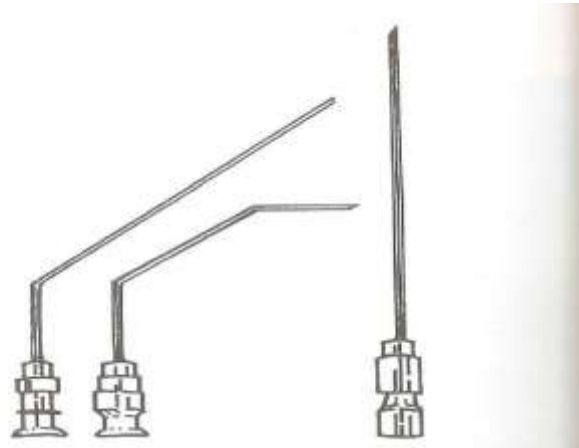


Figure 2

Drugs used for the block

A - Diagnostic block

- 1.5 % Lignocaine
- 0.5 %-0.25% Bupivacaine or ropivacaine
- Iohexal (omnipaque) non ionic water soluble radiographic contrast
- Depot methyl Prednisolone

B- Therapeutic block (Neurolysis of Ganglion Impar):

- 6% to 10% phenol
- 6.5 % Absolute alcohol

Benefit

The benefits of a ganglion impar block may vary from person to person. Some people experience relief for weeks where others can benefit from the block for years but few may feel just temporary relief. However, the procedure is low risk; non surgical modality if successful for the first time will continue to provide pain relief with repeat blocks.

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Summary

Ultrasound or fluoroscopy guided Ganglion impar block is a fast, safe and cost effective treatment for chronic, neuropathic perineal pain of visceral and sympathetic pain syndromes secondary to malignancy.

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