Case Report | Journal of Anaesthesia and Critical Care Case Reports | 2023 May-August; 9(2): 05-07

Novel Two-point Perianal Block Injection for Postoperative Pain in Proctological Surgeries

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Abstract

Perianal infiltration of Local anaesthetic has been utilized in providing analgesia and anaesthesia for minor proctological surgeries. Traditionally described perianal block by Nyström et al. involves eight injection techniques in the perianal region. We describe here a Novel Two-point injection for providing analgesia for minor proctological surgeries which has very easily identifiable landmarks and be easily reproducible to ensure quality analgesia.

Keywords: Two-point Perianal block, Proctological procedures, Post-operative pain relief

Introduction

Proctologic surgeries like haemorrhoidectomy, fistulectomy, fissurectomies are commonly performed in ambulatory setting as well as short stay procedures [2, 3, 4]. Surgeries of the perineum are usually performed under Spinal anaesthetic or General Anaesthesia. Opioids, NSAID's are given for post-operative pain relief [4, 5, 6]. Paracetamol forms the main stay of managing post operative pain in these cases [4, 5].

In a study by Gerbershagen et. al [1] the investigators evaluated postoperative pain in 50,523 patients from 105 German hospitals, and compared pain scores among 179 surgical groups. On the first postoperative day, patients were asked to rate their worst pain intensity since surgery (numeric rating scale, 0–10). The median NRS for surgeries like haemorrhoidectomy was 4.6 – 6.0 which was of moderate intensity [1]. Adequate pain relief in these patients will ensure early discharge and better patient satisfaction [1, 4, 8].

The anal canal is typically divided into superior and inferior segments by the pectinate, or dentate, line. Above the pectinate line, the anal canal receives autonomic innervation from the inferior hypogastric plexus. Below the pectinate line, the anal canal receives somatic innervation derived from branches of the pudendal nerve [4, 7, 8] as depicted in Figure 1.

The pudendal nerve is a sensory and motor nerve arising from the sacral plexus and forms from the ventral spinal nerve roots S2-S4. The pudendal nerve passes through the greater sciatic foramen then enters the perineum through the lesser sciatic foramen along with the internal pudendal artery and vein. The pudendal nerve courses through the ischiorectal fossa and Alcock's canal, also known as the pudendal canal. Inside Alcock's canal, the nerve initially divides into the inferior rectal nerve and then gives off the perineal nerve. Ultimately, the nerve continues as the dorsal nerve, which innervates the penis and clitoris. The inferior rectal nerve innervates the external anal sphincter and the perianal skin. The perineal nerve sends sensory branches to the skin of the labia majora and scrotum. The dorsal nerve branch is a sensory nerve ending that supplies the skin of the clitoris and penis [4, 5, 6, 7] as seen in Figure 1.

Saranga Bharathi R [5], concluded in their study Perianal block is a safe, feasible, reliable, and reproducible mode of anesthesia for ano-rectal surgeries. Its evident efficacy justifies its adoption as anesthesia of choice [5, 6, 7].

We propose to prolong the analgesic effect by depositing the Local Anaesthetic (LA) with dexamethasone as an adjunct to prolong the effect of LA [11] in the Pudendal canal by landmark guidance, thus blocking the pudendal nerve as depicted in Figure 2.

Case presentation

We present here a case report of 15 patients. All patients posted for surgeries below the pectinate line were included in the study. The anaesthesia plan was discussed with the patient and surgeons and written informed consent was taken from each patient during pre-anaesthetic check-up (PAC). The data recorded included age, gender, weight, height, comorbid conditions and ASA physical status as recorded in Table 1; diagnosis, wearing off of spinal anaesthesia (Bromage score 1), time to micturition , rescue analgesia in recovery / in ward and the Visual Analogue Score (VAS scores) in recovery , in wards and at discharge and follow-up on 5th postoperative day was noted as recorded in Table 2. All the 15 patients were operated after adequate NPO. Surgery was conducted under spinal anaesthesia. Under all aseptic precautions and standard monitoring, spinal was given with patients in sitting position at either L3 – L4 or L4 -L5 intervertebral space. All 15 patients received 2 ml of 0.5% Bupivacaine (Heavy). Patients were immediately placed in lithotomy position and surgery proceeded. Intraoperatively vitals monitored and oxygen given at 2l/m to all patients. Only very anxious patients were sedated

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Submitted: 14/02/2023; Reviewed: 11/03/2023; Accepted: 16/03/2023; Published: 10/05/2023

DOI: https://doi.org/10.13107/jaccr.2023.v09i02.216

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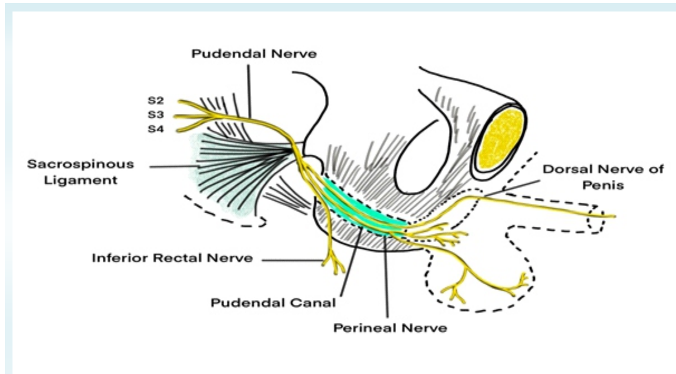

Figure 1: Clinical anatomy of Pudendal Nerve

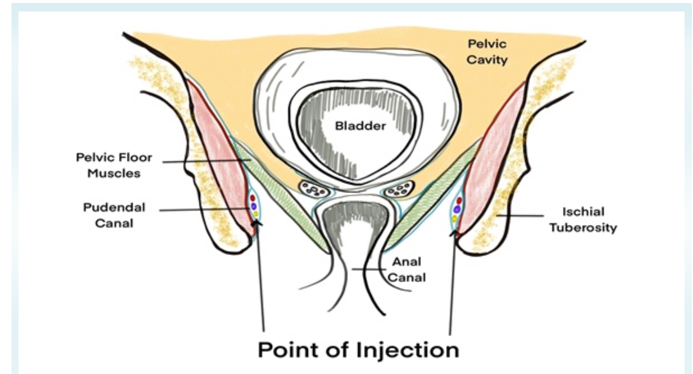

Figure 2: Point of injection

with 2 mg midazolam. After the surgery, Perianal block was administered in the same lithotomy position.

Ischial tuberosity was first palpated at the same level as anus. A 20 ml syringe was loaded with 0.75% Ropivacaine with 4 mg of dexamethasone. The one and half inches 21g hypodermic needle was directed perpendicular at the ischial tuberosity. Once the bone was hit, the needle was directed slightly medially to a maximum of another 1 to 1.5 cm. and once a pop off / giveaway of needle was felt, a negative aspiration for blood was checked, and if this was clear 10 ml of drug was given at point of injection as depicted in Figure 2. The same procedure was repeated on the other side and 10 ml was given at the other side too.

As part of Multi modal analgesia all patients received 1 gm Paracetamol IV infusion and Injection Diclofenac 75 mg IM twice a day till discharge , on day 2 or day 3. On discharge patients were prescribed a tablet comprising a combination of diclofenac and paracetamol to be taken twice a day for 5 days. The patients were monitored for pain scores after their surgery in the post-operative ward, on discharge and on follow-up on day 5 and VAS scores noted (Table 2).

Discussion

Surgeries of the perineum are usually performed under Spinal anaesthetic or General Anaesthesia [2, 3]. Opioids, NSAIDs, Paracetamol form the main stay of managing post operative pain in these cases. Most neglected were the routine regular surgeries with high day 1 postoperative pain [1].

TABLE 1: Patient demographics with co-morbidities and ASA Grade Types

Sr.No.	Age	Sex	Height (inches)	Weight (Kg.)	Co-morbidities	ASA Grade
1	43	M	5'7	65	Nil	I
2	38	M	5'5	68	Nil	I
3	58	F	5'2	65	Nil	I
4	65	F	5'1	57	DM, HT	II
5	70	M	5'8	75	DM, HT	II
6	33	M	5'7	78	Nil	I
7	48	M	5'9	75	DM	II
8	57	F	5'5	80	DM	II
9	62	M	5'7	68	Nil	I
10	56	M	5'9	72	RA	II
11	55	F	5'4	80	DM, HT	II
12	48	F	5'4	68	Nil	I
13	50	M	6'0	72	Nil	I
14	70	M	5'7	68	HT	II
15	65	M	5'5	65	HT	I

DM – Diabetes Mellitus, HT – Hypertension, RA - Rheumatoid arthritis

Postoperative pain was reduced when perianal block was given as an adjuvant to spinal or general anaesthesia as seen by reduced VAS scores in postoperative period [7, 8, 10]. The need for rescue analgesia in form of NSAID's or opioids were almost nil till discharge. This gave improved patient satisfaction and recovery [9, 10].

Perianal block involves infiltration in circumferential area around the anus and at four points, i.e. 12° clock, 3° clock , 6° clock and 9° clock positions, involving large volumes of local anaesthetic agents. Some gave a total of 6 "columns" 5 ml each injected peri-sphincteric area along with 10 ml of subcutaneous infiltration around the anus and some 8 points of injections involving painful injections and complications of infection, hematomas and inadequacy of effect [2, 4, 6, 7, 8, 9].

As below the pectinate line, the anal canal receives somatic innervation derived from branches of the pudendal nerve [3, 8, 9], we chose to block the pudendal nerve by depositing the LA in the Pudendal canal by landmark guidance in the novel Two Point injection technique avoiding multiple injections. To prolong the benefit of pain relief dexamethasone was used as adjuvant [11]. The technique is simple, easy and effective as shown by the data of postoperative VAS scores. The VAS scores of zero to one showed effectiveness of block and no need for rescue opioids and NSAID's, hence it was a procedure specific pain relief block [10] which is cost effective as need for these drugs were reduced and patients were discharged early and returned to work

TABLE 2: Type of surgery and block parameters recorded

Sr.No.	Surgery	Spinal wear off (mins)	First Urine (mins)	VAS on Post-operative		
				Day 1	On discharge at Day 2	Day 5
1	FIA	240	400	1/10	0/10	0/10
2	Fissure	300	350	0/10	0/10	0/10
3	Piles	320	400	0/10	0/10	0/10
4	Piles	310	440	0/10	0/10	0/10
5	FIA	200	300	0/10	0/10	0/10
6	Abscess	200	280	1/10	1/10	0/10
7	Fissure + Sentinel Tag	240	350	0/10	0/10	0/10
8	Piles	220	400	1/10	0/10	0/10
9	Piles	350	450	0/10	0/10	0/10
10	FIA	240	400	0/10	0/10	0/10
11	Piles	300	360	0/10	0/10	0/10
12	Fissure	240	320	0/10	0/10	0/10
13	FIA	220	300	0/10	0/10	0/10
14	Piles	200	300	1/10	0/10	0/10
15	Piles	280	360	1/10	1/10	0/10

FIA - Fistuala-in-ano

Conclusion

Two-point perianal block can be used as a novel technique to give a simple, easy and effective post operative pain relief to most commonly done proctological procedures, thereby facilitating less usage of opioids and NSAIDS and early recovery and discharge.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his/her consent for his/her images and other clinical information to be reported in the Journal. The patient understands that his/her name and initials will not be published, and due efforts will be made to conceal his/her identity, but anonymity cannot be guaranteed.

Conflict of interest: Nil **Source of support:** None

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How to Cite this Article

Eswaran K, B Anilkumar | Novel Two-point Perianal Block Injection for Postoperative Pain in Proctological Surgeries | Journal of Anaesthesia and Critical Care Case Reports | May-August 2023; 9(2): 05-07 | https://doi.org/10.13107/jaccr.2023.v09i02.216