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Pudendal Block Effectively Relieves Early Post-operative Urinary Catheter Related Pain and Bladder Discomfort After Robot-Assisted Radical Prostatectomy (RARP): A Single Center Cohort Study

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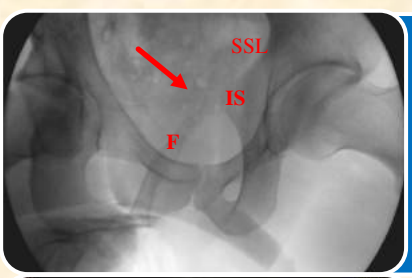
Introduction

Catheter-related bladder discomfort (CRBD) is a frequent problem especially after use of urethral catheter in male patients between 47 to 90% after different types of surgeries. The aim of this study was to evaluate the efficacy of pudendal nerve block on discomfort level in patients undergoing robot-assisted radical prostatectomy (RARP).

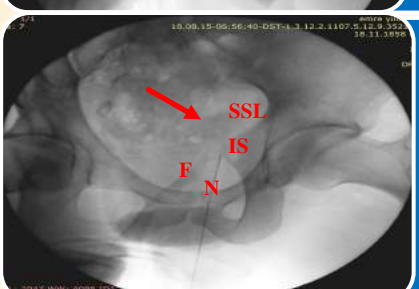
Materials and Methods

The data of 30 consecutive patients undergoing RARP was collected. All RARP procedures were performed by an experienced surgeon at a robotic surgery center from 2017 to 2018. All patients received 20 Fr foley catheter with a balloon inflated 15 mL. The patients were randomly divided into two groups either receiving pudendal nerve block group (PDC-Group) and control group (C-Group).

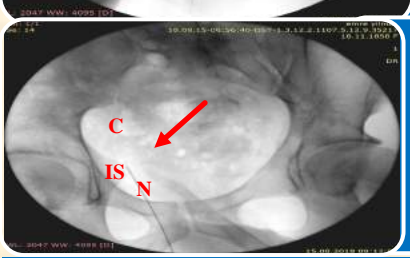
Under fluroscopic (with cranially-oblique angle) view over pelvic region and using transrectally index finger guidance, the ischial spine (IS) and sacrospinous ligament (SSL) were palpated through the rectal wall. Ischial spine was fixed with index finger and flouroscopy, subsequently 10-12 cm length spinal needle inserted percutaneously from perianal region until reaching to ischial spine and sacrospinous ligament. 10 mg of Bupivacaine 0.5% and 40 mg of methylprednisolone mixture (10 ml) was given at each side for PNB, beneath the IS and SSL where the pudendal neurovascular bundle has been localized.



Ischial spine is located on left side and SSL is identified by finger through rectal wall.



Left pudendal block: After palpation of IS and SSL through rectum, needle is introduced perineally and analgesic/prednol solution is injected.



Same procedure is repeated on right side of patient.

IS: Ischial spine ,F:Finger,C: Contrast,N:Needle, SSL:Sacrospinous ligament

Pain scores, degree of discomfort experienced were evaluated by using the self-reported validated questionnaire the Wong-Baker FACES (WB-FACES) immediately after the procedure and at postoperative 1, 2, 6, and 12th hours.

The WB-FACES scale is consistent with the numeric rating scale of 0 to 10. To assess the CRBD, we asked our patients an additional 4 questions. ''Q1: Do you feel any pain on your penis? '', ''Q2: Do you feel the catheter in your penis?'', ''Q3: Do you have an urgency?'', ''Q4: Do you feel any urge to urinate and but unable to urinate? The answers were classified in four categories (none, mild, moderate, severe).

Results

There was no perioperative or early post-operative major complication related to the intervention. Patients in the PDC-Group had statistically significant lower postoperative pain intensity values and lower WB-FACES scores (0.7± 0.6) when compared to the control group (1.5±2.4) ($p < .01$) at post operative 6 hours. Furthermore, patients showed statistically significant improvement in the other four questions at most of the measurement times and none of the patients in PDB-Group had additional analgesic requirements for up to 12 hours. Figure 1 shows pain and CRBD at immediate and early postoperative periods in patients with or without bilateral PNB.

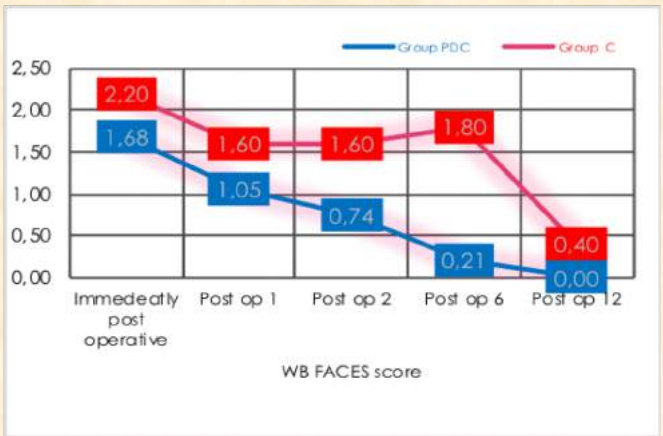


Figure 1: Pain and CRBD at postoperative periods in patients with or without bilateral PNB.

		Group PDC		Group C		p
WB FACES score						
Immedeatly post operative	Mean±s.d.(Median)	1,7 ± 1.3 (2)		2,2 ± 3.2 (1)		0,844 m
Post op 1	Mean±s.d.(Median)	1,1 ± 1.1 (2)		1,6 ± 3.1 (0)		0,715 m
Post op 2	Mean±s.d.(Median)	0,7 ± 1.0 (0)		1,6 ± 2.5 (1)		0,395 m
Post op 6	Mean±s.d.(Median)	0,2 ± 0.6 (0)		1,8 ± 2.7 (0)		***0,044*** m
Post op 12	Mean±s.d.(Median)	0,0 ± 0.0 (0)		0,4 ± 1.3 (0)		0,168 m
Question 1						
Immedeatly post operative	n-%	10	52,6%	10	100,0%	***0,009*** x^1
Post op 1	n-%	7	36,8%	10	100,0%	***0,001*** x^1
Post op 2	n-%	0	0,0%	10	100,0%	***0,000*** x^1
Post op 6	n-%	1	5,3%	8	80,0%	***0,000*** x^1
Post op 12	n-%	0	0,0%	3	30,0%	***0,033*** x^1
Question 2						
Immedeatly post operative	n-%	8	42,1%	10	100,0%	***0,002*** x^1
Post op 1	n-%	10	52,6%	10	100,0%	***0,009*** x^1
Post op 2	n-%	15	78,9%	10	100,0%	0,268 x^1
Post op 6	n-%	15	78,9%	10	100,0%	0,118 x^1
Post op 12	n-%	7	36,8%	10	100,0%	***0,001*** x^1
Question 3						
Immedeatly post operative	n-%	15	78,9%	10	100,0%	0,268 x^1
Post op 1	n-%	11	57,9%	10	100,0%	***0,016*** x^1
Post op 2	n-%	2	10,5%	8	80,0%	***0,000*** x^1
Post op 6	n-%	1	5,3%	5	50,0%	***0,005*** x^1
Post op 12	n-%	0	0,0%	4	40,0%	***0,009*** x^1
Question 4						
Immedeatly post operative	n-%	13	68,4%	10	100,0%	***0,046*** x^1
Post op 1	n-%	10	52,6%	10	100,0%	***0,009*** x^1
Post op 2	n-%	2	10,5%	8	80,0%	***0,000*** x^1
Post op 6	n-%	1	5,3%	4	40,0%	***0,036*** x^1
Post op 12	n-%	0	0,0%	3	30,0%	***0,012*** x^1
CRBD						
Immedeatly post operative	n-%	11	57,9%	10	100,0%	***0,016*** x^1
Post op 1	n-%	12	63,2%	10	100,0%	***0,028*** x^1
Post op 2	n-%	5	26,3%	10	100,0%	***0,000*** x^1
Post op 6	n-%	2	10,5%	8	80,0%	***0,000*** x^1
Post op 12	n-%	0	0,0%	5	50,0%	***0,001*** x^1

x^1 Chi-square test / ^{m} Mann-whitney u test

Conclusion

Our data suggested that use of PNB after RARP significantly decreases CRBD and pain after urinary catheterization. Relief of pain in the early postoperative period (as postoperative 6 hours) improves patient comfort and may provide decreased analgesic use and thereby reduce hospital stays after RARP.