Medical Journal of the
Islamic Republic of Iran

Volume 19
Number 4
Winter 1384
February 2006

Original Articles: Clinical Sciences

ASSESSMENT OF THE EFFICACY OF PARACERVICAL BLOCK IN CONJUNCTION WITH CONSCIOUS SEDATION ON PAIN CONTROL DURING OUTPATIENT HYSTEROSCOPY

S. ATASHKHOII, M.D.,* S. NEGARGAR, M.D., AND S. TAGAVI, M.D.*****

From the Department of Anesthesiology, Alzahra Hospital, Tabriz University of Medical Sciences, Tabriz, Iran.

ABSTRACT

Background and Objective: Hysteroscopy is considered as very important in the investigation of abnormal uterine bleeding. It is usually performed as an outpatient procedure under either local or no anesthesia. This study was designed to compare the combination of paracervical block (PCB) and conscious sedation with paracervical block or conscious sedation alone for outpatient hysteroscopy in terms of pain control and patient satisfaction.

Methods: A total of 60 women with abnormal uterine bleeding were considered eligible for the study. Patients were randomized into three groups. Group A (20 patients) underwent diagnostic hysteroscopy with conscious sedation, in group B (20 patients) paracervical block was performed, and group C (20 patients) received both conscious sedation and paracervical block. Main outcome measures were pain control during the procedure, the postoperative pain score at 15 min, 60 min, and 24 h after the procedure, and patient's satisfaction rate.

Results: There were significant differences between combination therapy with other groups in terms of pain control during the procedure (paracervical block plus sedation versus the other two groups: $p<0.001$), and in postoperative pain at different intervals (group C versus A and B groups, $p<0.001$). Satisfaction rate in group C patients was higher than the other patients (paracervical block + sedation versus group A and B, $p<0.001$).

Conclusion: Both paracervical block and conscious sedation anesthesia can be used for diagnostic hysteroscopy, but their combination resulted in improved analgesia both during the procedure and postoperative pain and patient satisfaction compared with monotherapy.

MJIRI, Vol. 19, No. 4, 281-285, 2006.

Keywords: Hysteroscopy, Paracervical Block, Conscious Sedation, Anesthesia.

***Corresponding Author:** Dr. Simin Atashkhoii, Iran, Tabriz, Department of Anesthesiology, Alzahra Hospital, Artesh Jonoobi Ave, e-mail:siminatashkhoii@yahoo.com, Tel:0098914-1148861

Fax:0098411-5566449

** Dr. Sohrab Negargar, Assistant professor of Anesthesiology.

***Dr. Simin Tagavi, Assistant professor of Obstetrics and Gynecology.

INTRODUCTION

Outpatient hysteroscopy is now regarded as the investigation of choice for abnormal uterine bleeding[1] as there is no longer any doubt that hysteroscopy is more effective than conventional curettage at identifying intrauterine pathology as it allows direct inspection of the uterine cavity, direct biopsy, and appropriate therapeutic management.[2]

Appropriate investigation of abnormal uterine bleeding can be carried out in an outpatient setting.[3] Another important advantage of hysteroscopy is that it can be performed without general anesthesia for reduced cost and time.[3,4] Although some authors[5,7] have reported that intracervical or paracervical nerve block (PCB) failed to reduce pain during outpatient hysteroscopy, others have shown that local anesthesia[8-11] (PCB or topical anesthesia) and conscious sedation[9,12] can be used for this procedure.

The aim of this prospective randomized double blind study is to compare paracervical block or conscious sedation with their combination in terms of pain control and patient satisfaction during diagnostic hysteroscopy.

PATIENTS AND METHODS

Sixty patients aged 35-45 years in ASA class I or II were studied at the Alzahra hospital. Exclusion criteria were pregnant women, menorrhagia at the time of the procedure, and a history of anesthetic or surgical complications. These patients were randomized into three equal groups (20 patients each), using a computer generated randomization: group A (conscious sedation), group B (PCB), and group C (PCB in conjunction with conscious sedation). Each patient signed an informed consent form for the procedure and anesthesia.

All patients were placed in the lithotomy position. After the vaginal examination, a bivalve speculum was inserted, and the cervix was exposed, and cervix, fornix, and vagina were cleaned with Povidone Iodine 10% solution and then swabbed dry.

Conscious sedation (group A) was performed immediately before surgery with the i.v. administration of 0.5 mg (0.02 mg/kg) atropine and 50-100 μg (1-2μg/kg) fentanyl, followed by an i.v. slow injection of 2.0 mg (0.03mg/kg) midazolam. Paracervical block (group B) was performed 5 minutes before the procedure with 10 mL 0.5% bupivacaine hydrochloride solution injected with a 22 gauge spinal needle on four sites (at 3, 5, 7 and 9 o'clock positions) at the junction of the cervix and vagina. Group C received first PCB and then conscious sedation with the above method. All patients maintained control of their airways, and additional analgesia was provided on request.

All patients underwent diagnostic hysteroscopy using a standard 5.5 mm hysteroscope. Normal saline was used as the distending medium. A complete inspection of the uterine cavity was made, and endometrial sampling was done.

During and after the procedure, patients were asked to record their degree of pain by means of a visual analogue scale (VAS) from 1-5, indicating: l=no pain; 2=slight pain; 3=tolerable pain; 4= severe pain; 5=intolerable pain.[9] Postoperative pain score was evaluated immediately after surgery, 15 min, 60 min, and 24h after the procedure.

Postoperatively, analgesics (Tramadol 100 mg) were administered when requested by the patient.

Satisfaction rate was assessed before the patient's discharge. Women had to choose between three different assessments of satisfaction: high satisfaction, moderate satisfaction and no satisfaction.[8] Patients were discharged once they had no discomfort.

Statistical analysis was performed with the use of the two-tailed Student's t-test. Satisfaction rate was compared with the χ^2 test. $p<0.05$ was considered as statistically significant.

RESULTS

The demographic data of the three groups of patients are presented in Table I. There were no statistically significant differences between the groups with regard to mean age, parity, and indications for hysteroscopy.

Operative data are shown in Table II. The amount of saline used varied from 200-600 mL. All procedures finished within 15 min. No differences were noted between the groups in terms of operative and discharge times (Table II). No significant complications occurred during surgery. The main complication was related to vagal reaction and associated symptoms (e.g. pallor, nausea and vomiting) (Table II).

Pain control during and after hysteroscopy are reported in Table III. There were no significant differences in the pain experienced during the procedure between groups A (3.9 + 1.2) and B (3.7 + 1.1) ($p>0.05$), but women in group C (1.2 + 0.9) had significantly less pain during the procedure (group C versus A and B groups; $p<0.001$). Postoperative pain score didn't differ between groups A and B, at 15, 60 min, and 24 h. Mean of postoperative pain score of group C was significantly less than A and B groups at the same times (group C versus A and B groups; $p<0.001$) (Table III).

Only ten patients (4, 5 and 1 patient in groups A, B and C, respectively) required postoperative analgesics (group C versus A and B groups; $p<0.01$) (Table III).

Table I. Clinical characteristics and indications of 60 patients undergoing diagnostic hysteroscopy.

Variables	A: Conscious Sedation group	B: PCB Group	C: Sedation + PCB group	P
No of patients	20	20	20	NS
Age (years)	43.5 ± 4.1	42.6 ± 3.9	41.9 ± 3.7	NS
Parity	3. 62 ± 0.9	3.67 ± 1.1	4.0 ± 1.5	NS
Indications (%)				
Postmenopausal bleeding		4 (20)	6 (30)	NS
Menorrhagia	3 (15)	4 (20)	5 (25)	NS
Irregular period	9 (45)	10 (50)	8 (40)	NS
Others	1(5)	2 (10)	1(5)	NS

Values are presented as mean ± SD

Table II. Operative data and complications data of 60 patients undergoing diagnostic hysteroscopy.

Variables	A: Sedation Group	B: PCB Group	C: Sedation + PCB group	P
Operative time (min)	12.2 ± 3.5	11.8 ± 2.8	12.0 ± 3.1	NS
Volume of normal saline (mL)	400 ± 170		380 ± 160	NS
Discharge time (min)	105 ± 20	95 ± 25	100 ± 22	NS
Complications				NS
Uterine perforation (n)	-	-	-	
Fluid overload (n)	-	-	-	
Hemorrhage (n)	-	-	-	
Hypotension (n)	2	3	1	
Nausea-vomiting (n)	1	2	-	

Values are presented as mean ± SD

Table III. Pain control and satisfaction rate of 60 patients undergoing diagnostic hysteroscopy.

Variables	A: Sedation group	B: PCB Group	C: sedation + PCB group	P
Pain during the procedure	3.90 ± 1.20	3.70 ± 1.10	1.20 ± 0.9	<0.001
Postoperative pain				
at 15 min	3.00 ± 0.7	2.80 ± 0.9	0.8 ± 0.2	<0.001
at 1 h	2.50 ± 0.5	2.2 ± 0.7	0.5 ± 0	<0.001
at 24 h	1.30 ± 0.3	1.30 ± 0.4	0.2 ± 0	<0.001
Requirements for postoperative analgesics (patients=n)	4	5	1	<0.001
Satisfaction rate (%)				
Very satisfied	4 (20)	4 (20)	12 (60)	
Moderately satisfied	6 (30)	5 (25)	6 (30)	
Not satisfied	10 (50)	11 (55)	2 (10)	

Values are presented as mean ± SD

Satisfaction rates are also reported in Table III. No significant difference in the satisfaction rate was observed between women treated with local anesthesia (45%) and conscious sedation (50%), but 90% of group C patients were satisfied with the procedure.

DISCUSSION

Although diagnostic hysteroscopy with endometrial biopsy can be performed in the outpatient setting under either local or no anesthesia, pain and vasovagal reaction are a concern to women and their gynecologists.[1,2]

No anesthesia during hysteroscopy can cause unnecessary patient discomfort, although it has been demonstrated that 29.1-35.8% of these procedures can be performed with no anesthesia and patients tolerate this well.[3,4]

Vercellini et al.[5] reported that paracervical anesthesia could only reduce pain during insertion of the hysteroscope but failed to suppress pain during uterine distention and aspiration of the endometrium, probably this is related to the different innervations of the uterine body and the cervix, and these patients required additional intravenous sedation during the procedure. Also local anesthesia protocols are not effective in reducing pain during hysteroscopy,[6,7] although a study by Soriano et al.[8] showed that lidocaine aerosol spray on the cervix reduced pain and discomfort in the majority of patients during the procedure.

Conscious sedation is widely used for pain relief during hysteroscopy.[9] Guida et al.[9] compared the efficacy of intravenous midazolam-fentanyl (conscious sedation) or paracervical block in terms of satisfaction, intra- and postoperative pain in 166 patients during hysteroscopy. Both groups of women had significantly less pain.

Our study suggests that there is no difference between PCB and conscious sedation in terms of pain control and patient satisfaction. Our results showed that pain levels during hysteroscopy were significantly lower in the conscious sedation and PCB groups than those patients who received sedation or PCB alone.

PCB alone might not reduce the pain stimuli arising from the fundal region,[5] and using sedation alone may be required to level IV or V on the sedation scale, and thus be associated with postoperative side effects; nausea or vomiting, dizziness, drowsiness, and delayed recovery and patient discharge[12,13] (our study patients were at level I or II on the sedation scale).

The explanation for lower pain levels in group C may be the amnesia and analgesia caused by the use of sedative, and the small size of the hysteroscope (5.5 mm diameter) that requires minimal cervical dilatation.[13,14]

In summary, patients receiving only PCB or sedation during diagnostic hysteroscopy experienced 3 times higher pain levels, compared with those receiving both PCB and sedation. Both PCB and conscious sedation alone can be used for hysteroscopy, but these may be considered for selected patients.

REFERENCES

1. Donnes J, Nisolle M: An atlas of operative laparoscopy and hysteroscopy. 2nd ed., New York: The Parthenon Publishing Group, pp. 403-8, 2001.
2. Jaff RA, Samuels SI: Anesthesiologist's Manual of Surgical Procedures. 2nd ed., Philadelphia: Lippincott Williams and Wilkins, pp. 579-82, 1999.
3. Kremer Ch, Barik S, Duffy S: Flexible outpatient hysteroscopy without anesthesia: a safe, successful and well-tolerated procedure. Br J Obstet Gynecol 105(6): 672-6, 1998.
4. Bettocchi S, Ceci O, Nappi, L, Di Venere R, Masciopinto V, Pansini V, et al: Operative office hysteroscopy without anesthesia: analysis of 4863 cases performed with mechanical instruments. J Am Assoc Gynecol Laparosc 11(1): 59-61, 2004.
5. Vercellini P, Colombo A, Mauro F, Oldani S, Bramante T, Crosignani PG: Paracervical anesthesia for outpatient hysteroscopy. Fertil Steril 62(5): 1083-5, 1994.
6. Wong AYK, Wong KS, Tang LCH: Stepwise pain score analysis of the effect of local lignocaine on outpatient hysteroscopy: a randomized, double blind, placebo controlled trial. Fertil Steril 73(6): 1234-7, 2000.
7. Lau WC, Tam WH, Lo WK, Yuen PM: A randomized double-blind placebo-controlled trial of transcervical intrauterine local anesthesia in outpatient hysteroscopy. Br Obstet Gynecol 107(5): 610-3, 2000.
8. Soriano D, Ajaj S, Chuong T, Deval B, Fauconnier A, Darai E: Lidocaine spray and outpatient hysteroscopy: randomized placebo-controlled trial. Obstet Gynecol 96(5): 661-4, 2000.
9. Guida M, Pellicano M, Zullo F, Acunzo G, Lavitola G, Palomba S, et al: Outpatient operative hysterescopy with bipolar electrode: a prospective randomized study between local anesthesia and conscious sedation. Hum Reprod 18(4): 840-3, 2003.
10. Readman E, Maher PJ: Pain relief and outpatient hysteroscopy: a literature review. J Am Assoc Gynecol Laparosc 11(3):315-9, 2004.
11. Zullo F, Pellicano M, Stigliano CM, Di Carlo C, Fabrizio A, Nappi C: Topical anesthesia for office hysteroscopy. A prospective, randomized study comparing two modalities. J Reprod Med 44(10): 865-9, 1999.
12. Wiener-Kronish JP, Gropper MA: Conscious sedation. 1st ed., Philadelphia: Hanley & Belfus, pp. 60-1,143-4, 2001.

13. Ng EHY, Chi Chui DK, Tang OS, Ho PC: Paracervical block with and without conscious sedation: a comparison of the pain levels during egg collection and the postoperative side effects. Fertil and Steril 75(4): 711- 7, 2001.
14. Hitchings S: Paracervical anesthesia in outpatient hysteroscopy: a randomized double-blind placebo controlled trial. BJOG 107(1):143-4, 2000.