TOLERABILITY OF FLEXIBLE AND RIGID CYSTOSCOPY DURING DJ STENT REMOVAL IN WOMEN

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ABSTRACT

Cystoscopy is routinely done in urological practice. It may be for diagnostic or therapeutic purpose. Generally, it is done to rule of urethra and bladder pathology. Many of time cystoscopy is performed under local anesthesia, however sometime patient need spinal or general anesthesia. DJ stent is another surgery which is routinely practiced after many endourological as well as open surgery in Urology. It is general practice to remove DJ stent within 6 weeks to 3months but this duration may vary on type of surgery, need of DJ stent and development of complications like lower urinary tract symptoms(LUTs) due to DJ stent. Cystoscopy is done to remove all DJ stent. Its surgeon's choice to remove DJ stent with either rigid cystoscopy or flexible cystoscopy. This observational study was conducted in Nepal Medical College Teaching Hospital with objective to evaluate the tolerability of flexible versus rigid cystoscopy in women during DJ stent removal and to find out the pain (VAS SCORE); intraoperative, post-operative and need for analgesia following Cystoscopy. Total 64 patients fulfilling the inclusion criteria were included and were randomly divided into 2 groups i.e. group A and group B. Storz 18 Fr flexible cystoscopy was used for group A and 18 Fr rigid cystoscopy was used for group B. Cystoscopy was done in both group, DJ stent was identified and removed. VAS score was calculated during and after the procedure. Mean age for group A was 40.84 years and group B was 36.8 years. VAS score intraoperative for group A was 3.7±1.4 and for group B was 6.1±0.7. Postoperative VAS score for group A was 2.4±1.2 and group B was 5.3±0.7, VAS showing P value <0.001 for both intraoperative and postoperative which is statically significant. In addition, need of analgesia was less in flexible cystoscopy during and after cystoscopy (P value <0.0001).

KEYWORDS

Tolerability, flexible and rigid cystoscopy, DJ stent, women, Nepal

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INTRODUCTION

Cystoscopy is routine procedure in urology. Cystoscopy is performed under local anesthesia. Pain and discomfort during procedure is great concern for patient as well as surgeon.[1] Cystoscopy with local anesthesia is painful in comparison to general anesthesia. However, it protects patients from morbidity related to general anesthesia.[2] During local anesthesia, diverting patients mind by talk them, playing music can improve patients comfort. There are two types of cystoscopies i.e. rigid and flexible. Rigid cystoscopy have diameter of 18 Fr to 27 Fr and length is of 22cm uses 30 degree lens. However, flexible cystoscopy is of 14 F/ 16.2 F with length between 37cm and 40 cm, inbuilt fibro optic lens in it. During procedure aseptic measures are taken, urethra is cleaned, xylocane gel 2% is inserted per urethra for about 5 minutes and then cystoscopy was inserted with normal saline irrigation.[3] Flexible is made up fibrotic thinner flexible fiber and don't need lithotomy position, so patient feel comfortable with less discomfort.[4]

Flexible cystoscopy was used in 1970s. Flexible cystoscopy is beneficial in terms of post-operative hematuria, pain and need of medications after the procedure. Although flexible cystoscopy is costly, it gives better comfort and has lesser postoperative morbidity which makes it cost-effective.[5] There are many studies related to patients comfort and cystoscopy. However, patients comfort using flexible cystoscopy is evaluated only in few studies. In this study, we evaluated patient comfort during and after flexible and rigid cystoscopy.

MATERIALS AND METHODS

An observational study was conducted from 1st January 2024 to 31st July 2024 in Urology Department of Nepal Medical College Teaching Hospital (NMCTH), Attarkhel, Kathmandu. Sixty four patients fulfilling the inclusion criteria were included in our study after approval from Institutional Review Committee (IRC), NMCTH and an informed consent from patients. Inclusion criteria were all female patients with DJ stent insitu who came for DJ stent removal within age group of 18-55 years. Exclusion criteria were urinary tract infection and hematuria. Patients were randomly divided into 2 groups i.e. group A and group B. Patients were admitted in ward through OPD after investigations and categorized into groups on alternate day basis. All the information was entered in a structured proforma. Procedures were performed by urologist. Dorsal lithotomy position was made and under aseptic measures and 2% xylocane jelly was installed per urethra as local anesthesia in all cases. During procedure, 18 Fr Storz flexible cystoscopy was used for group A and 17 Fr rigid cystoscopy was used for group B. VAP score was calculated during and after the procedure.

Need for analgesia was documented for pain management in both the groups. Diclofenac sodium was given during the procedure to relieve the pain as per need of patients in all the cases. Patients were kept in post-operative ward for one hour and then were discharged on diclofenac sodium 50 mg tablet on SOS basis if needed for post-operative pain management. Follow up was done as per the need. Outcome was measured in terms VAS SCORE (Table 1) during and after procedure, analgesia requirement, presence of lower urinary tract symptoms (LUTS).

RESULTS

Sixty four female patients in two group, i.e 32 in each group were there. Mean age for group A was 40.84 years and group B was 36.8 years (Table 2). Youngest patient was 16 years and oldest patient was 78 years. VAS score intraoperative for group A was 3.7±1.4 and for group B was 6.1±0.7. Post-operative VAS score for group A was 2.4±1.2 and group B was 5.3±0.7, P value <0.001 for both intraoperative and postoperative VAS (Table 3). P value <0.05 showing intraoperative VAS and postoperative VAS has statistical significance. Intraoperative VAS group A showed mild pain in 16, severe pain in 16 patients. Group B showed mild pain in 0, moderate to severe pain 32 patients, P Value = 0.0001 (table 4). Similarly, post-operative VAS score group A showed mild pain 27 and moderate to severe pain in 5 patients. For group B mild pain was seen in 0 and moderate to severe pain in 32 patients, P=0.0001 (Table 5). In group A, 12 patients required analgesia and 21 in group B during cystoscopy p value <0.024 (Table 6). In addition, 4 patients needed analgesia in group A and 22 in group B after cystoscopy. P value <0.0001(table 7).

Table 1: VAS score

VAS score	Mild pain	Moderate pain	Severe pain	Very severe pain
Points	1-3	4-6	7-9	10

Table 2: Detail age wise distribution			
Age (Years)	**Group A (n=32)**	**Group B (n=32)**	**P value**
	40.84±6.7	36.8±9.1	0.056
Mean	38.8±8.24 years		

Table 3: Intraoperative and postoperative VAS for Group A (flexible cystoscopy) and Group B (rigid cystoscopy)				
MEAN (VAS)	**n**	**Group A**	**Group B**	**P value**
Intra-operative VAS	32	3.7± 1.4	6.1±0.7	0.001
Post-operative VAS	32	2.4±1.2	5.3±0.7	0.001

Table 4: Intraoperative VAS stratification				
GROUP	**VAS <4 (mild)**	**VAS ≥ 4 (moderate/ severe)**	**Total**	**P-value**
A: Flexible	16	16	32	0.0001
B: Rigid	0	32	32	
Total	16	48	64	

Table 5: Postoperative VAS stratification				
GROUP	**VAS <4 (mild)**	**VAS ≥ 4 (moderate/ severe)**	**Total**	**P-value**
A: Flexible	27	5	32	0.0001
B: Rigid	0	32	32	
Total	27	37	64	

Table 6: Analgesia during cystoscopy				
GROUP	**n**	**Need of analgesia**	**No need of analgesia**	**P value**
A: Flexible	32	12	20	0.024
B: Rigid	32	21	11	

Table 7: Analgesia after cystoscopy				
GROUP	**n**	**Need of analgesia**	**No need of analgesia**	**P value**
A: Flexible	32	4	28	0.0001
B: Rigid	32	22	10	

DISCUSSION

DJ stenting is one of the routine urology practice following many of endourological as well as open surgery.[6] Urological interventions includes percutaneous nephrolithotomy (PCNL), uretero-renoscopy (URSL), retrograde intrarenal surgery (RIRS), pyeloplasty, ureteric strictures, pyelolithotomy etc. DJ stenting is generally placed after these surgery in anticipation to prevent ureteric mucosal damage, edema, erosion, hematuria etc. during the procedures.[7] The time for removal of DJ stent varies according to the purpose of DJ stent placement. For example, DJ stent is generally kept for 4-6 week following RIRS, and even for 2 weeks after URSL if there is complete clearance of stone. Similarly, DJ stent can be placed for 3 months after pyeloplasty and even up to one year in few cases of ureteric strictures.[8] All DJ stent has to be removed or replaced as per the need. In general practice, DJ stent removal is done under local anesthesia. Most of urologist remove it with rigid cystoscopy and some cases with flexible cystoscopy. Our study is focused on the tolerability of pain in this procedure during rigid vs. flexible cystoscopy, so that it helps in making a guideline for this procedure.[9]

Pain during cystoscopy and its tolerability is main concern in several studies.[10] There are few studies comparing flexible cystoscopy with rigid cystoscopy in term of pain by VAP score. We found flexible cystoscopy as better in terms of tolerability. Patients feels less pain and no need or minimal need of analgesic after flexible cystoscopy. In addition, short term morbidity like hematuria, dysuria, and admission in hospital was not seen after flexible cystoscopy. This was same as the findings noted in the study conducted by Flannigan *et al*[8] and Patel *et al*.[14]

Flexible cystoscopy equipment is a bit expensive and need a slow learning curve to attend expertise in its use. Rigid cystoscopy is less expensive tool, have higher risk hematuria, dysuria, and admission in hospital. Iatrogenic infections are common after cystoscopy either rigid or flexible. Although it is a minimal invasive procedure, about 10% patients develops UTI. Few studies demonstrated less UTI with flexible cystoscopy which may be due to smaller caliber scope and less traumatic procedure.[11]

Studies demonstrated flexible cystoscopy as a superior tool than rigid cystoscopy during DJ removal.[12] We included only female patients as male patients have longer urethral length that might jeopardize our outcome in terms of pain. Female patients included from different

age groups. VAS score was significantly less in flexible cystoscopy group in comparison to rigid cystoscopy group. Similarly, need of analgesia was also less during and after cystoscopy in flexible cystoscopy group.

Both flexible and rigid cystoscopies are well tolerated by women, but flexible cystoscopy has less pain than rigid cystoscopy. Either the flexible or rigid technique may be used with a comparable pain tolerance and ease of use in women.

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