

Pain modulation by audiovisual distraction during cystoscopy

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Abstract

Introduction: Cystoscopy is one of the most common urological procedures used for either diagnostics, therapeutics, or for surveillance. It may be performed under local or general anesthesia. The procedure is associated with pain and discomfort.

Aims: The aim of the study was to compare the levels of perceived pain during local cystoscopy with and without audiovisual distraction (AVD).

Methodology: A randomized control study was performed at our academic hospital local cystoscopy theater of the urology division. Approximately half the patients already booked for the local rigid cystoscopy procedure were exposed to a distracting musical video during the procedure (study group), while the control group was not.

Statistical Analysis: Descriptive statistics were used to determine percentage, mean, and standard deviation (SD) for categorical data. The Mann–Whitney U-test for nonparametric data was used for comparing pain levels.

Results: A total of 91 patients participated in the study with 48 patients in the study group and 43 patients in the control group. The visual analog scale (VAS) ranged between 1 and 5/10 in the study group and 1–8/10 in the control group, while the mean VAS was 2.52 ± 1.2 SD in the study group and 4.97 ± 1.35 SD in the control group. The AVD intervention was statistically significant ($P < 0.0001$).

Conclusion: AVD during local rigid cystoscopy is highly recommended, especially in patients undergoing the procedure for the first time.

Keywords: Audiovisual distraction, cystoscopy-induced pain, cystoscopy

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INTRODUCTION

Cystoscopy is associated with pain,^[1] with first-time patients experiencing a higher pain level than in a repeated scope ($P < 0.001$).^[2] Although flexible cystoscopy inflicts less pain than rigid scoping on first-time scope men, it

did not cause less pain in patients who had the procedure previously.^[3]

Types of distraction to aid in pain relief during cystoscopy procedures is controversial. In one study where patients watched their own procedure, a 40% pain reduction was

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shown,^[4] while another study showed no effect.^[5] Music, video, or stress ball distractions decreased pain during rigid cystoscopy,^[6] and audiostimulation reduced pain during flexible cystoscopy.^[7]

Study rationale

There is currently no data in South Africa on the effect of audiovisual distraction (AVD) during cystoscopy. Therefore, this study is not only the first in our institution but also in the country.

Study aim

The aim of this study was to determine the level of pain and to demonstrate the effect of AVD on pain perception during local rigid cystoscopy in adult male patients.

Study objectives

The study objectives were to describe the level of perceived pain and to compare the levels of perceived pain during local rigid cystoscopy with and without AVD.

METHODOLOGY

Sample population

Adult male patients (91) over the age of 18 years, without any of the exclusion criteria (poor vision or blindness, hard of hearing or deaf, mentally challenged, spinal cord injury or any other sensory deficits of the perineum, any form of intervention during the scope including optical urethrotomy, biopsy or double J stent removal, and patients refusing participation in the study) but already booked for diagnostic local cystoscopy were included in the study.

Procedure

The effect of AVD on pain during rigid cystoscopy was determined by testing the VAS pain level in both the study and in the control group. This single-center randomized control study was designed to illustrate the significance of AVD intervention. A questionnaire was designed for the patients to describe their experience after the procedure.

Data was statistically analyzed to express the VAS pain level of each group and to determine the difference between the two groups.

All 91 patients were counseled before the procedure, given an information sheet and only once consent was given and signed, and each patient randomly chose a piece of white paper with either the letter C or S, to allocate patients to one of the two groups (control-or study group). Patients were thus randomly distributed into two groups: The first group had the procedure done under the current conditions without AVD (control group), while the second group

watched a video clip with music (time lapse with sunsets, clouds, and stars) on a tablet during the procedure (test group).

The patients were placed in the lithotomy position, cleaned with Savlon solution if not allergic, or otherwise either betadine or normal saline was used. The procedure commenced 15 min after applying 2% Remicaine jelly in the urethra of all patients (control and test).^[8] Normal saline was used for irrigation and bladder overdistension was avoided. The bladder was emptied at the end of the procedure and an oral analgesic (painblock tablets) was prescribed if so indicated. All the cystoscopy procedures were done by the principal investigator. Approximately 15 min (time to dress) after the procedure each patient (in a private room) filled in a questionnaire.

Data analysis

The collected questionnaire data was entered into a Microsoft Excel spreadsheet. The STATA Version 14.2 (College Station, TX, USA) statistical software package was used to analyze the collected data. Descriptive statistics for categorical data using percentage, mean, and standard deviation (SD) for normally or median and range for skew distributed data were done. The Mann–Whitney U-test for nonparametric data was used to compare the pain levels. $P < 0.05$ was considered to be statistically significant.

RESULTS

A total of 16 (17.6%) patients had been scoped before and attended the clinic for follow-up cystoscopy [Figure 1].

Age was not considered an important factor in cystoscopy with or without AVD and was not statistically significant ($P = 0.17$).

VAS ranged between 1 and 5/10 in the study group and between 1 and 8/10 in the control group, while the mean VAS was (2.52 ± 1.2 SD) in the study group and (4.97 ± 1.35 SD)

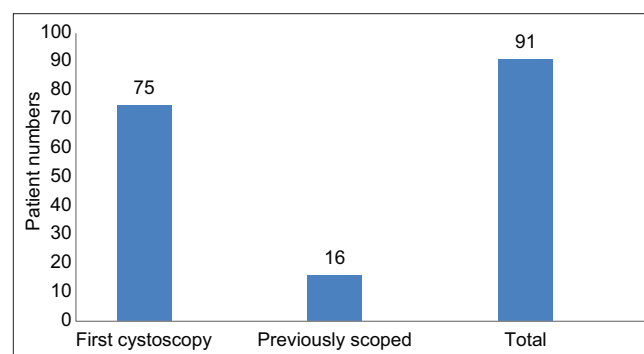


Figure 1: Patients who had cystoscopies

in the control group. The AVD intervention was statistically significant ($P = 0.000$) [Table 1].

Early complications after the cystoscopy procedure were also determined: 57 patients (62.6%) did not have any early complications, while 23 patients (25.2%) suffered from pain after the procedure, 10 patients (10.9%) had urethral bleeding, and one patient (1.1%) had both pain and urethral bleeding [Figure 2].

DISCUSSION

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage as per the International Association for the Study of Pain. VAS is a pain measurement tool, which is validated for the measurement of acute pain.^[9]

Many measures are used to decrease pain perception during cystoscopy, such as the scope sheet size and using a flexible scope instead of rigid, but were found independent factors affecting pain level.^[3] However, introducing 2% lidocaine intra-urethral jelly 15 min before the procedure significantly decreased pain.^[8] Listening to music was associated with less pain during cystoscopy and less sedation (midazolam) was needed during colonoscopy.^[7,10,11]

Patients who have transurethral catheters for any reason experienced less pain and were more comfortable during the procedure than patients without chronic transurethral catheters. Four patients had chronic transurethral catheters,

Table 1: Mean visual analog scale and P values for study and control groups

	Study group VAS	Control group VAS	P
Mean±SD	2.52±1.20	4.97±1.35	<0.001

VAS: Visual analog scale, SD: Standard deviation

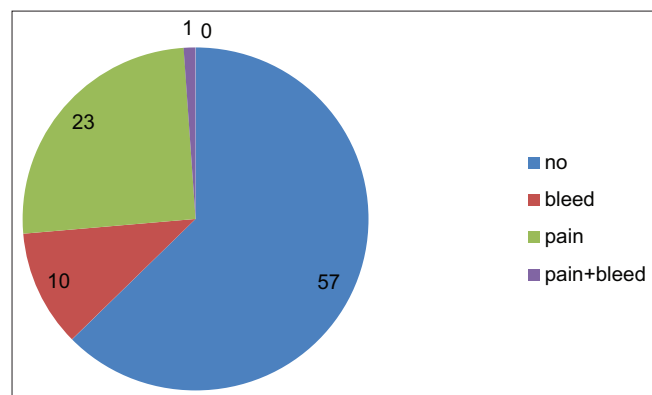


Figure 2: Numbers of early complications post cystoscopy

three were in the study group and one in the control group. All four patients had a VAS of one.

CONCLUSION

In this study, AVD is confirmed to be a reliable tool to decrease pain perception during local rigid cystoscopy under local anesthesia and is thus highly recommended, especially in patients who are undergoing the procedure for the first time.

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Conflicts of interest

There are no conflicts of interest.

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