Does information provided to men before a urodynamic study affect their expectation of pain?

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OBJECTIVE
To evaluate the effect of a routine explanation provided to men on their expectation of pain associated with a urodynamic study (UDS).

PATIENTS AND METHODS
The purpose of UDS is to reproduce patient’s symptoms during the urine storage and voiding phases, and thus understand the causes of the patient’s symptoms. UDS may cause discomfort and pain, mainly from the urethral instrumentation; the fear of pain related to UDS may affect the patient’s behaviour and the information provided by them, and thus may alter the conclusions drawn from the study. Routinely as with any other invasive procedures, patients are provided with an explanation about the UDS. Sixty-three men referred for UDS in an outpatient clinic, who had not had previous UDS, were included (mean age 56.4 years, range 25–89). Of these patients, 15 had had previous instrumentation of the urethra (urethral catheterization, cystoscopy), and 14 had had a prostatectomy. One urologist provided a detailed explanation of the different stages of the UDS. Use of an anaesthetic gel, and instrumentation of the urethra and anus by an experienced urologist, were emphasized. Pain was assessed using a visual analogue pain scale three times, to provide an expected pain score (EPS) on entering the examination room, after the explanation, and the actual pain felt during the UDS.

RESULTS
The mean EPS before the explanation was 4.2, significantly higher (5.17) after the explanation (\(P = 0.02\)) and the actual pain scored during the UDS was 3.76, lower than both the previous EPS. In patients who had had previous instrumentation of the urethra, the EPS after the explanation was significantly higher, at 6.06 (\(P < 0.05\)). Pain scores were not significantly different in patients after prostatectomy.

CONCLUSIONS
The routine guidance provided to male patients undergoing UDS enhances their expectations of pain, especially in those who have had previous instrumentation of the urethra. As the fear of pain may alter the information provided by the patient, different strategies of providing patients with information about UDS should be devised.

KEYWORDS
pain, urodynamic study, patient education

INTRODUCTION
The purpose of a urodynamic study (UDS) is to reproduce patients’ symptoms, and their usual urine storage and voiding patterns. This interactive process between the patient and the examiner, and the appropriate measurements and observations, serve to provide an understanding of the causes of a patient’s symptoms. The UDS may be accompanied by discomfort and pain, mainly caused by the urethral instrumentation necessary for the ‘pressure-flow’ study. As with any other invasive procedures, patients are provided with an explanation about the procedure, the associated complications, and alternative methods for the test if applicable, and are routinely requested to sign an informed-consent form. Pfingsten et al. [1] showed that the anticipated pain after an explanation about pain during a test, and the patient’s fear-avoidance beliefs, significantly influenced the behaviour of patients with low back pain, by promoting behaviour to avoid motion. The dread of pain related to UDS may similarly affect the patient’s behaviour and the subjective information provided on the level of pain associated with the procedure, thereby altering the conclusions drawn from the UDS. Thus the aim of the present prospective study was to evaluate the effect of routinely provided information on the expectation of pain associated with UDS.

PATIENTS AND METHODS
Men aged >18 years who were referred for a UDS in an outpatient clinical setting and who had not had a previous UDS were enrolled. Participants were referred for UDS as they had LUTS. The patients scored their expected pain and that after UDS using a Likert-type visual analogue scale, with 0 = no pain and 10 = unbearable pain. A detailed explanation of the different stages of a UDS was provided to the patient in a standardized fashion. The explanation included information about the patient’s position during the flowmetry and the pressure-flow phases of the study, the use of an intraurethral anaesthetic gel during the study, the size of the urethral and anal catheter to be used by an experienced urologist, and possible dysuria and haematuria that might occur after UDS. Information about a prophylactic i.m. injection with antibiotics was also provided. Additional details were given if requested by the patient or an accompanying person, after which a signed informed consent form was obtained.

Data on any previous prostate surgery or urethral instrumentation (i.e. catheter insertion, cystoscopy) were recorded after the urologist’s explanation and after the patient signed the informed consent form. Patients graded their expected pain score (EPS) 5 min before and after the explanation. They were
instructed to complete the flowmetry stage of the study in private, and were then placed supine on the examining table. The genitalia were cleansed by iodine solution, and 2% lidocaine gel was introduced into the urethra from a 10-mL syringe. A 14 F Tieman coude catheter was used to drain the bladder, followed by the introduction of a double-lumen 7 F urodynamic catheter. The rest of the examination was performed with the patient upright; at 5 min after the UDS each subject graded the level of pain they perceived during the test. One-way ANOVA and Pearson correlation tests were used to analyse the data.

RESULTS

The study included 63 men (mean age 56.4 years, range 25–89); 40 had never had prostate surgery or urethral instrumentation for any reason but 15 had had prostatic surgery and a further eight had had only urethral instrumentation (cystoscopy and/or urethral catheter insertion) previously.

The EPS and the pain scores described by the men during the UDS are shown in Table 1. The EPS after the explanation was significantly (P < 0.02) higher than all the other scores. Patients who had had prostate surgery had a higher EPS, at 6.06 (2.3) after the explanation (P < 0.05) than patients who had never had any invasive urethral procedure. There was a correlation between age and the perceived level of pain during the UDS; 42 older men (>50 years old) graded their pain level during the UDS as being lower than their 21 younger counterparts, regardless of whether or not there was a history of previous procedures, at 3.24 (SD, 2.2) and 4.88 (2.2), respectively (r_p = 0.27, P = 0.036).

DISCUSSION

Invasive procedures like UDS are undertaken after an explanation of the expected course of events, followed by obtaining the patient’s informed consent. It is commonly felt that when patients are provided with information about the nature of an examination and why it was required, they would be less anxious and would cooperate more willingly during the examination [2]. Ku et al. [3] assessed several emotional variables in males and females who had a UDS. They concluded that these evaluations are well tolerated by both genders, although male patients described having experienced more pain. They therefore recommended gender-based emotional support to improve patient cooperation.

The present results in men show that the guidance offered by the examining physician before UDS did not lessen the anxiety of undergoing a UDS, but rather heightened the anticipated pain level. It seems that the pain level anticipated before a UDS is higher than the actual pain level described after the procedure. Furthermore, patients who had previous experience with prostate surgery had the highest EPS after the explanation. Likewise, patients who had urethral instrumentation in the past reported a higher EPS after the explanation than patients with no experience with invasive urethral procedures or prostate surgery. Apparently a previous unpleasant experience with invasive urological procedures (cystoscopy, catheterization and prostate surgery) causes patients to have a higher EPS after an explanation about UDS. It is possible that the detailed explanation about the UDS brought back unpleasant memories and increased the anxiety and anticipation of pain. Thus, while it would be more appropriate to compare groups which received a detailed explanation or did not, this is not feasible as it is unethical not to provide an explanation before an invasive investigation and before requesting informed consent from the patient. All EPS were directly reported to the UDS investigator, thus this could be seen as an effort by the patient to indicate that they are very pain-sensitive, i.e. they exaggerate their expectations.

Men generally report urethral instrumentation to be more painful than do women [3]. The present results obtained only from men are supported by data reported for women from Ellerkmann et al. [4], who examined the anticipated pain and that reported after the procedure in 100 women who had UDS. Their results were similar to the present; the pain anticipated by the patients was higher than the pain reportedly experienced during the procedure. The women in that study reported an EPS before UDS of 4.35, similar to that reported by the present men (4.24). Moreover, it seems that previous experience effects pain perception.

Forty-two older men (>50 years old) graded their actual pain level during the UDS as being lower than that of their younger counterparts, regardless of whether or not there was a history of previous procedures. We have no explanation for this finding.

The dread of pain may apparently cause physiological changes potentially affecting neurological responses associated with UDS. Porro et al. [5] used functional MRI to assess the activity of cortical nociceptive networks in healthy volunteers while they expected a potentially painful somatosensory stimulation. The authors reported that the anticipation of pain modulated the cortical systems involved in sensory and affective components of pain, even in the absence of an actual noxious input, and suggested that the activity of cortical nociceptive networks may be directly influenced by cognitive factors. It follows then that lowering the patients’ level of anticipated pain before UDS would have an important influence during the procedure.

How can the anticipated pain levels be reduced to realistic ones and thus relieve the patients of anxiety before the procedure? The

<table>
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<th>TABLE 1 The mean (sd) EPS and the level of pain reportedly experienced during UDS by the patients</th>
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<tr>
<td>Patients (n)</td>
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<tr>
<td>Study group (63)</td>
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<tr>
<td>Urethral procedure:</td>
</tr>
<tr>
<td>First-ever (40)</td>
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<tr>
<td>Previous (8)</td>
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<tr>
<td>Previous prostatectomy:</td>
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<td>No (48)</td>
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standard information provided immediately before UDS did not satisfactorily ameliorate their pain anticipation. Withholding basic information about the procedure is ethically unacceptable. Zelikovsky et al. [6] attempted to relieve the distress in children associated with a voiding cysto-urethrogram (a procedure very similar to UDS in several aspects) by providing comprehensive information, coping-skills training, and parental coaching. Although the children had fewer episodes of distressed behaviour and were more cooperative, pain and fear scores were not significantly different. Additional measures that might relieve the dread of undergoing a UDS, e.g. brochures, visits to the clinic before UDS, video instructions, etc., might be costly, so that the value of such methods should first be tested and the effective methods applied judiciously.

In conclusion, the level of anticipated pain increased after men had received the ethically required information before a UDS. Patients with previous experience of urethral catheterization or prostate surgery had higher levels of expected pain than those with no experience of invasive urethral procedures.

Different strategies of patient education and information are needed because the current methods do not serve to ameliorate the patients’ anticipated pain.

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CONFLICT OF INTEREST

None declared.

REFERENCES


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Abbreviations: UDS, urodynamic study; EPS, expected pain score.