

Direct to cystoscopy: A prospective quality assessment of patient preferencesMark A. Assmus¹; Ryan McLarty¹; Ambikaipakan Senthilselvan²; Shubha K. De¹¹Department of Surgery, Division of Urology, Edmonton, AB, Canada; ²School of Public Health, University of Alberta, Edmonton, AB, Canada***Acknowledgments:** The authors would like to thank the entire Northern Alberta Urology Centre (NAUC) cystoscopy team.***Cite as:** *Can Urol Assoc J* 2019 November 5; Epub ahead of print.
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Abstract

Introduction: Cystourethroscopy is one of the most common procedures performed by urologists in both office and operative settings. With the recent centralization of cystoscopy at our center, we looked to assess our current delivery model, to determine whether patients prefer their initial visit to be in cystoscopy, or in the clinic, followed by a cystoscopy appointment later.

Methods: We administered 500 prospective questionnaires to adults undergoing cystoscopy by 14 urologists at our center in 2017. Patient demographics were collected, along with their questionnaire results that we compared to their urologist-reported indication, results, and plan. Our primary objective was to assess whether patients prefer to be seen direct to cystoscopy (DTC) vs. a clinic appointment (CA) before cystoscopy.

Results: A total of 500 questionnaires were analyzed, with 336/500 (67%) patients being male. Mean age was 66 years (21–93), with 30% under 60 years. Thirty-nine percent (n=193) were undergoing their first cystoscopy, with 85% preferring DTC. There was no difference in age, gender, first-time cystoscopy, or indication for cystoscopy when comparing those who preferred DTC vs. CA. Patients who had an accurate understanding of the indication for their cystoscopy had 6.23 times higher odds of preferring DTC ($p<0.05$). We also identified a deficiency in patient comprehension of cystoscopy results and followup plans.

Conclusions: With limited health resources, a large patient catchment area, and the

majority of patients preferring to be seen DTC, there is evidence to implement a default DTC approach to booking cystoscopy clinics.

Introduction

Cystourethroscopy is a crucial and commonly performed diagnostic and treatment tool utilized by all urologists in order to evaluate both benign and malignant diseases. At our center, 15 staff urologists perform over 7,500 outpatient cystoscopies annually. This high volume stems both from our vast patient catchment area (Northern Alberta & Northwest Territories, $1.17 \times 10^6 \text{ km}^2$) along with centralized urologic care in a Canadian province that has few community practicing urologists.

Despite its long-standing established role in medicine, cystoscopy is a widely under-recognized investigation from the perspective of the general public¹⁻⁴. Other invasive screening procedures have seen the benefits of mainstream education programs, familiarizing the general population with colonoscopy, mammograms, and pap smears. In contrast, patients often first hear about cystoscopy and its value on the day they require it.

Given the anecdotal knowledge gap we have identified in our patient population, we sought to better understand the patient experience and preferences when faced with cystoscopy. Currently there is little guiding literature with only a few validated hospital based anxiety scales applied to urologic procedures. One study evaluated a 40-question survey (State Trait Anxiety Inventory, STAI) while another examined Hospital Anxiety and Depression Scale (HADS, 14 question survey) scores associated with cystoscopy versus other invasive urologic investigations (Urodynamics, Transrectal ultrasound (TRUS) guided prostate biopsy)⁶⁻⁷. Surprisingly, higher rates of anxiety were associated with cystoscopy than TRUS guided biopsy of the prostate⁶. Specifically, anxiety was associated with the time awaiting cystoscopy (26%), and the procedure itself (17%) as the most stressful⁶. Additionally, there remains conflicting opinions in the literature regarding patient characteristics (ex. gender, age) associated with higher odds of cystoscopy-associated anxiety. Overall there is little research aimed at evaluating and improving patient related experiences for this procedure, despite its frequent use.

In analyzing our clinical pathways we struggled to understand whether patients preferred a consultation prior to their procedure, or to come direct to cystoscopy. Therefore we set out to perform a quality assessment of our delivery model. Our primary objective was to identify whether patients preferred to be seen DTC vs. CA prior to cystoscopy. Secondary objectives included differences in understanding and retention of information between patients who had seen their urologist prior, versus those who were seen direct to cystoscopy.

Methods

A 6-part patient questionnaire (Figure 1) was created with input from volunteer patients, cystoscopy nurses, urology residents and staff urologists. This questionnaire was then administered to consecutively evaluated adult (≥ 18 years old) patients after their cystoscopy (by one of 14 urologists). The questionnaires were provided to the patient by health care aids and cystoscopy nursing staff who were not directly involved in the patients cystoscopy. Completion of the questionnaire occurred in a private room once the patient had changed back into their own clothing at the completion of their clinical interaction with the urologic team. Prospective survey collection continued over a 4-week period from September to October 2017 until we had obtained 500 consecutive completed questionnaires. Patient characteristics, questionnaire responses and the indications and outcomes of their evaluation were added to an encrypted anonymized database. Cystoscopy at our center is performed in a dedicated 6-suite outpatient cystoscopy space within the Northern Alberta Urology Center (NAUC). This space offers in-house sterilization and reprocessing capabilities along with dedicated administration and nursing staff.

As our primary outcome, we assessed the proportion of patients who prefer to be seen DTC vs. CA prior to cystoscopy. Logistical regression and multivariate analyses were performed in order to evaluate if a specific patient population preferred the CA approach.

Continuous variables are expressed as mean and range while proportions were used for categorical variables. Both GraphPad Prism (v6.0 Inc., La Jolla, California, USA) and Stata statistical programs were used for our statistical analysis, including Chi-squared test and logistic regression for univariate and multivariate analysis. We included all of the individual univariate patient characteristics in our final multivariate analysis. Statistical significance was set at $p < 0.05^{9-10}$.

This manuscript adheres to the SQUIRE 2.0 standards of publishing quality initiatives in medicine¹¹.

Results

Patient characteristics

Table 1 highlights characteristics for the 500 patients that completed cystoscopy questionnaires. 336/650 (67%) patients were male. The mean age was 66 years old (21-93), with 30% of patients being under 60 years old. Thirty-nine percent ($n=193$) were undergoing their first cystoscopy.

Comprehension of cystoscopy indication

The majority (98%) felt they understood their indication for cystoscopy, however 5% misunderstood the indication when compared to the urologist reported indication. Table 2 identifies the frequency of cystoscopy indications for our patient cohort.

DTC vs. CA?

Overall, the majority (85%) of patients who responded to this question preferred DTC (8.4% omitted a response). In performing univariate and multivariate logistic regressions analysis, there was no difference in age, gender, whether it was their first-time cystoscopy, or what the indication for cystoscopy was when comparing those who preferred DTC vs. CA ($p>0.05$) (Table 3). When specifically comparing patients who were undergoing their first cystoscopy to those undergoing a repeat cystoscopy, 140/170 (82.4%) of first time cystoscopy patients that responded to this question preferred DTC while 246/285 (86.3%) of the repeat cystoscopy patients preferred DTC, $p>0.05$. Patients who identified their correct indication for cystoscopy had 6.23 times higher odds of preferring DTC (OR 6.23, 95% CI: 1.18-32.83, $p=0.03$).

Comprehension and retention of information

70/500 (14%) patients felt that no results of their cystoscopy examination were reviewed with them by the end of their visit. Of these patients, 22% (15/70) had abnormal clinically significant findings detected on cystoscopy; 1 of which was a bladder tumor. Of the 430 patients who felt that their urologist disclosed the results of their cystoscopy, only 56% patient reported results correctly matched their urologists' diagnoses. In total, 13 patients left their cystoscopy appointment unaware of a potential urologic malignancy diagnosis detected during their evaluation. 187 patients reported that they required no further urologic follow up or investigations. 69/187 (37%) of these patients required follow up. 59/500 (12%) of patients reported that they were unsure whether follow up was required.

Discussion

Our quality assessment of patients undergoing cystoscopy has helped us better understand our delivery mode, in respect to patient preferences. This has helped avoid unnecessary pre-procedural consultation thereby optimizing resources, and decreasing delays to diagnostic/interventional procedures.

Routinely patients may travel over five hours to our center. With that in mind, an attempt is often made to consolidate appointments to minimize return visits. Due to differing practice patterns some patients presenting to their CA expecting a cystoscopy were unhappy to find out their procedure would require another visit. In contrast, some patients seen DTC thought they would have the opportunity for a CA first in order to meet with the surgeon and clarify the reason for their referral. Overall, our study

identified that the vast majority of our patients referred for cystoscopy prefer to be seen DTC. A notable unanticipated finding from our study is that the same proportion of patients preferred DTC whether it was their first cystoscopy or a repeat cystoscopy. This information is valuable in optimizing efficiency of health care resource utilization, especially in light of prolonged time to urology consultation at our center.

One important factor to acknowledge is that there is no financial bias from the perspective of the treating urologists with respect to DTC vs. CA preference. In Alberta, you cannot concurrently bill a follow up appointment at the time of cystoscopy, therefore billing for a new consultation prior to or concurrently with cystoscopy yields the same remuneration and avoids bias. We do acknowledge that the timing of questionnaire administration may impart an unavoidable bias on patient responses. However, our goal was to evaluate the patient experience at the conclusion of the procedure, as this is the lasting patient opinion that they have when they leave the cystoscopy suite.

Traditionally, our patients are informed of their upcoming clinic and cystoscopy appointments via mail out letters. With the results from this study identifying that the majority prefer to be seen DTC, we recognized a small number of patients may prefer a pre-procedure consultation. Therefore, we have implemented an ‘opt out’ direct to cystoscopy policy in which the mailed notice of appointment informs patients on how to request a clinic visit instead of DTC.

Our statistical analysis did not identify specific characteristics which may predict patients who would prefer CA prior to cystoscopy. By providing resources (i.e. web link to on-line resources) familiarizing patients with cystoscopy and the expected experience, may help reduce anxiety and improve acceptance. We are currently in the process of creating a video series of all procedures at our center (cystoscopy, urodynamic, lithotripsy, etc.), in an attempt to pre-educate patients prior to their visits. Of note, our patient questionnaire has not been previously validated, which represents a future opportunity for us to validate this questionnaire for ongoing objective patient experience assessments.

Secondary outcomes of our patient quality assessment survey aimed to assess patient reported comprehension and retention of cystoscopy results and follow up plans. We identified that many patients were unaware of their results and follow up plans at the conclusion of their cystoscopy appointment. When we reviewed our care delivery at the NAUC we noted that the majority of patients results and follow up plans are communicated verbally throughout and at the conclusion of their procedure while they remain in the cystoscopy suite. Further quality improvement interventions will be required to bridge the gap in knowledge transfer and ensure patients know their urologic findings and follow up plans. Moving forward, we plan to evaluate the role of a physician-patient communication tool in order to improve patient understanding at our center.

DRAFT

In the context of the current literature, cystoscopy is a stressful procedure that the majority of the general public is unaware of. Ensuring that physicians continue to involve patients in their decision-making is critical to their care, and has been widely shown to reduce patient stress and improve outcome measures. With an increasing focus on patient centered care and empowering the voice of patients in the care that they receive, QA outcomes like those shown in this study should have merit in considering changes to traditional practice patterns.

Conclusions

We have identified a patient preference for being evaluated direct to cystoscopy, thereby reducing the need for pre-procedural consultation.

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Figures and Tables

Fig. 1. Template of our six-part patient questionnaire regarding their cystoscopy experience.

Patient Guided Quality Assessment Questionnaire: Cystoscopy
 Principal Investigator: Dr Shubha De Phone Number(s): 780-409-6282
 Study Coordinator(s): Dr Mark Assmus
 Dr Ryan McLarty

	<u>Yes</u>	<u>No</u>
Have you ever had a cystoscopy procedure before?	<input type="checkbox"/>	<input type="checkbox"/>
Do you prefer to see the urologist in clinic on a separate date BEFORE your procedure?	<input type="checkbox"/>	<input type="checkbox"/>
Do you know why you had this procedure today?	<input type="checkbox"/>	<input type="checkbox"/>
Reason for procedure: _____		
Did your urologist tell you the results of your procedure today?	<input type="checkbox"/>	<input type="checkbox"/>
Result: Normal <input type="checkbox"/>		
Other: _____		
Do you have questions/concerns that were not answered at the end of the procedure?	<input type="checkbox"/>	<input type="checkbox"/>
Question(s): _____		
Do you need a follow up appointment or procedure/surgery with your urologist?		
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> I Don't Know		
Follow up plan: _____		
Patient Name: _____		
Patient Signature: _____		
Date: _____		

Table 1. Characteristics of adult patients that underwent cystoscopy and completed a QA questionnaire from September to October 2017 at the NAUC

Characteristic	Male	Female	Total
# of patients (%)	336 (67)	164 (33)	500 (100)
Mean age at consult in years (range) SD	68 (25–93) 14	62 (21–92) 14	p=0.00002
Proportion ≤40 years old (%)	16 (5)	14 (8)	p=0.10
Proportion >60 years old (%)	244 (73)	95 (58)	p=0.001

NAUC: Northern Alberta Urology Centre; SD: standard deviation; QA: quality assessment.

Table 2. Frequency of cystoscopy indication for all 500 adult patients presenting for evaluation September to October 2017

Indication for cystoscopy	Number of patients (%)
Blood in urine	125 (25)
Bladder check	85 (17)
Bladder tumor re-check	75 (15)
LUTS	60 (12)
Bladder cancer	40 (8)
Postoperative followup	40 (8)
Stent exchange/removal	20 (4)
Calculi disease	20 (4)
Other (Botox, suprapubic/urethral catheter, mesh)	20 (4)
Infections	10 (2)
Stricture disease	5 (1)

LUTS: lower urinary tract symptoms.

Table 3. Univariate and multivariate logistic regression analysis for patients preferring DTC to CA

Characteristic	Univariate			Multivariate		
	OR	95% CI	p	OR	95% CI	p
Age	1.00	0.98–1.02	0.94	1.00	0.98–1.02	0.86
Sex (ref: males)	1.37	0.78–2.42	0.28	1.49	0.82–2.70	0.19
Prior cystoscopy (ref: no)	1.35	0.80–2.27	0.26	1.45	0.83–2.54	0.20
Known cystoscopy indication (ref: no)	5.91	1.17–29.90	0.03	6.23	1.18–32.83	0.03

CA: clinic appointment; CI: confidence interval; DTC: direct to cystoscopy; OR: odds ratio.