

A cohort study investigating patient expectations and satisfaction outcomes in men undergoing robotic assisted radical prostatectomy

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Abstract

Introduction Robotic assisted radical prostatectomy (RARP) is gaining widespread acceptance for the management of localized prostate cancer. However, data regarding patient expectations and satisfaction outcomes after RARP are scarce.

Methods We developed a structured program for preoperative education and evidence-based counseling using a multi-disciplinary team approach and measured its impact on patient satisfaction in a cohort of 377 consecutive patients who underwent RARP at our institution. Responses regarding overall, sexual, and continence satisfaction were assessed.

Results Fifty percent of our patient cohort replied to the questionnaire assessments. Ninety-three percent of responding patients expressed overall satisfaction after RARP with only 0.5% expressing regret at having had the operation. Biochemical recurrence and lack of continence correlated significantly with low levels of satisfaction, though sexual function was not

significantly different among those satisfied and those not. Most patients (97%) valued oncologic outcome as their top priority, with regaining of urinary control being the commonest second priority (60%).

Conclusions RARP appears to be associated with a high degree of patient satisfaction in a cohort of patients subjected to a structured preoperative education and counseling program. Oncologic outcomes are most important to these patients and have the largest influence on satisfaction scores.

Keywords Robotic assisted radical prostatectomy · Expectations · Satisfaction

Introduction

Prostate cancer is the commonest non-dermatological cancer in men in the Western world [1]. The majority of men with clinically diagnosed prostate cancer present when the disease is localized to the gland [2]. Treatment of localized prostate cancer is an emotionally challenging proposition for many men. Unlike many other cancers, the need for treatment is often unclear, given that most men with prostate cancer will die ‘with’ the disease rather than ‘from’ the disease [3]. This is because the natural history of the disease is long in many cases and the age demographic affected often have other co-morbidities threatening their lives in the medium to longer term.

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Further complicating the decision-making process is the morbidity associated with treatment, which varies significantly depending on the treatment modality chosen. Another consideration is that, for localized prostate cancer, there is good evidence of oncologic superiority neither for one radical treatment option over the other nor for any of the different methods of surgical extirpation (open, conventional laparoscopic, or robotic assisted).

All the above considerations make choosing treatment for localized prostate cancer a clinical minefield. Following any cancer diagnosis, patients are emotionally charged and often search for a treatment option that provides cure but at the lowest possible cost in terms of their daily activities and quality of life. Although active surveillance is appealing to many with its non-radical approach, its oncologic safety is still under review [4]. Hence, patients who want the certainty of or, at least, the best possible chance of cure usually elect for radical treatment options. These patients often gravitate toward newer minimally invasive procedures such as conventional laparoscopic and robotic assisted radical prostatectomy (LRP and RARP, respectively). The attraction of minimal invasiveness with these procedures is readily apparent, and thus improved cosmesis over the open operation is virtually guaranteed. However, the apparent lack of external wounds does not equate to a lack of surgical morbidity and there is a danger for both patients and surgeons of over-calling their benefits. We would thus caution that ‘what you see is not always what you get’. Added to the difficulty of maintaining realistic expectations for both patients and referring doctors is the wealth (or otherwise) of information easily available on the Internet. Even well-respected robotic surgeons and manufacturers are occasionally guilty of hyping up the robotic technique and downplaying its potential drawbacks.

The above can lead to patients developing unrealistically high expectations for the outcomes of minimally invasive surgery. Hence, actual outcomes become a source of disappointment in light of these expectations. This ultimately leads to regret in choosing a particular treatment modality [5–7].

In order to minimize this discrepancy between expectation and outcome, we developed a structured program for preoperative education and evidence-based counseling using a multidisciplinary team-based (physicians, nurses, nurse practitioners, and physician

assistants) approach. This included face-to-face interviews, education using published data, written materials, and video recordings of surgical steps. We measured the impact of this structured approach on patient satisfaction and present our findings.

Patients and methods

This was a retrospective cohort study of patients who underwent robotic prostatectomy by a single surgeon (AT) at our institution and participated in our structured preoperative education and counseling program which is our standard of care (Appendix 1) and responded to an anonymized follow-up questionnaire to evaluate their satisfaction with the procedure.

Data collection

Between January and September 2008, 377 consecutive patients underwent RARP at our institution. A short questionnaire that included six questions was administered postoperatively (Appendix 2). Four questions (#2–5) addressed the matter of satisfaction and were inspired from the satisfaction question (#32) in the Expanded Prostate Cancer Index Composite (EPIC) questionnaire [8]. The nature of the questions related solely to the subjective parameter of satisfaction with respect to the trifecta expectations (sexual function, urinary control and cancer control) [9]. The answer scale to the single best answer questions ranged from 0 ‘regret having the operation’ to 5 ‘extremely satisfied’.

Additionally, in an attempt to understand patients’ predominant reasons for choosing RARP as treatment, subjects were asked to rank the elements of the trifecta in their subjective order of importance. Whenever overall dissatisfaction was expressed, patients were asked to answer a sixth question that investigated the cause of dissatisfaction (#6, Appendix 2).

In an attempt to correlate subjective patient satisfaction responses with objective functional outcomes data, information about potency and continence status was extracted from our IRB-approved, prospectively maintained patient database. The validated Sexual Health Inventory- Male (SHIM) score [10] was used to record potency. Urinary function was reported by number of pads worn per day. The use of no pads or one security liner was used to define continence. In our patient cohort, no cases of postoperative acute urinary

retention occurred. In the cancer domain, PSA data (value and corresponding date) were collected from the cancer domain of the EPIC questionnaire, or from the electronic or paper medical charts. Recurrence was defined as one PSA recording exceeding 0.2 ng/mL [11]. Patients who had received adjuvant or neoadjuvant hormonal or radiation therapies were excluded from the biochemical recurrence analysis. Surgical margin status along with pre- and post-operative cancer characteristics (Gleason sum, number of positive biopsy cores, etc.) were imported from the preoperative data sheets and the pathology reports.

Data analysis

The data was compiled in Microsoft Windows Access sheets. PASW version 17.0 (SPSS, Inc., Chicago, IL) was used to generate descriptive data parameters of preoperative PSA, body mass index (BMI), age, clinical stage, biopsy Gleason sum, number of positive cores, maximum percentage of cancer involvement on biopsy cores, final pathology TNM stage, final pathology Gleason sum, preoperative IIEF and IPSS. As part of a validation of the satisfaction survey results, chi-squared tests compared patients who replied to the questionnaire with those who did not. In the analysis, levels of satisfaction were stratified into three groups: (1) satisfied (comprising 'extremely satisfied' and 'satisfied'), (2) neutral (comprising 'neutral') and (3) dissatisfied (for everything else). Overall satisfaction was the dependent variable.

Chi-squared, Pearson-Chi squared, Student's *t*-test (with Bonferroni correction for multiple group *p*-values), Fisher's exact test analysis, and ANOVA were employed to generate comparative tables between groups of satisfaction levels. The parameters age, use of erectile medication, postoperative erections, postoperative intercourse, postoperative orgasm status, time to intercourse, postoperative continence, number of pads used, time to continence, surgical margins, and biochemical recurrence were entered, and their abilities to predict overall satisfaction were analyzed.

Results

The response rate was 49.9% (188/377). The mean age of the study cohort (responders) was 60 with a mean Gleason score of 6 (3 + 3). The mean pre-operative

PSA was 5.67, and the mean IIEF and IPSS scores pre-operatively were 58 and 7.7, respectively. Over 95% of patients had T1c disease (Table 1). The median time elapsed at the time the satisfaction survey was taken was 4.8 (1–10) months. Over 75% of respondents were surveyed between 4 and 6 months postoperatively.

D'Amico risk groups [12] were identified: low-risk- LR (T1-T2a, PSA level ≤ 10 ng/mL, Gleason score ≤ 6), intermediate-risk- IR (T2b or PSA level 10–20 ng/mL or Gleason score 7), and high-risk- HR ($\geq T2c$ or PSA level >20 ng/mL or Gleason score ≥ 8). The distribution of all three risk groups in our cohort was: 76.2, 22.5 and 1.3 percent for LR, IR and HR, respectively.

Statistical analysis failed to show significant differences between the responder and non-responder

Table 1 Preoperative patient characteristics

Variable	Cohort
Age; mean (range)	60 (42–82)
BMI; mean (range)	26.78 (16.7–37.3)
PSA; mean (range)	5.67 (0.4–45)
Clinical stage	
T1b	1 (0.5%)
T1c	180 (95.7%)
T2	7 (3.7%)
Biopsy Gleason sum	
≤ 6	113 (60.1%)
3 + 4	44 (23.4%)
4 + 3	16 (8.5%)
≥ 8	15 (8.0%)
Number of positive biopsy cores; mean (range)	3.25 (1–16)
Max % cancer on biopsy; mean (range)	25.97 (1–100)
Final pathology Gleason sum	
≤ 6	63 (33.5%)
3 + 4	88 (46.8%)
4 + 3	26 (13.8%)
≥ 8	9 (4.8%)
pTNM	
$>2c$	32 (17%)
2c	136 (72.3%)
$<2c$	19 (10.1%)
Preop IIEF; mean (range)	58 (6–75)
Preop IPSS; mean (range)	7.7 (0–33)

Table 2 Objective differences between questionnaire responders and non-responders

	Responders	Non-responders	Significance (chi square)
Erections			
Yes	82.1%	69.8%	NS
No	17.9%	30.2%	NS
Biochemical recurrence			
Yes	2.4%	3.3%	NS
No	97.6%	96.7%	NS
Continent			
Yes	90.4%	80.4%	$p = 0.006$
No	9.6%	19.5%	
# of pads (mean)	0.7	1.5	$p < 0.05$

groups with respect to postoperative sexual and cancer outcomes ($p > 0.05$). However, continence ($p = 0.006$) and pad usage (ANOVA $p < 0.05$) were statistically significantly higher among the non-responders (Table 2). Ninety-three percent of the responding patients expressed overall satisfaction, 3% were not satisfied, and 5% remained neutral (Table 3). However, only 0.5% expressed regret at having had the operation. When asked about the urinary domain, 71% expressed satisfaction, 8% did not express satisfaction or dissatisfaction (neutral), and 9% were dissatisfied, with 11% of the cohort not answering. Regarding the sexual satisfaction domain,

Table 3 Satisfaction outcomes

Satisfaction domain and level	All responders ($n = 188$)
Urinary satisfaction (%)	
Satisfied	71
Neutral	8
Not satisfied	9
Did not answer	11
Sexual satisfaction (%)	
Satisfied	40
Neutral	27
Not satisfied	21
Did not answer	12
Overall satisfaction (%)	
Satisfied	93
Neutral	5
Not satisfied	3
Did not answer	0

the replies were 40, 27, 21, and 12% for 'satisfied', 'neutral', 'not satisfied', and leaving the question unanswered, respectively (Table 3). Out of 13 patients, 10 (76.9%) patients who did not express satisfaction (neutral and dissatisfied) gave no reason for their dissatisfaction. Out of 13 patients, two patients (15.4%) said their unhappiness was due to unmet expectations regarding postoperative functional outcomes and one patient (7.7%) stated poor clinical care as the reason.

On question 1 of Appendix 2, 97% of patients stated that their major concern was to achieve a disease-free state. Of those, 60% thought their second priority was to achieve urinary control, whereas 26% reported that return of sexual potency was their second priority (ahead of urinary continence) and only 0.8% reported sexual function as their first priority.

In the Pearson chi-squared analysis, all the parameters dealing with sexual outcomes (erectile aid medications, orgasmic status, etc.) and the outcome itself (ability to perform intercourse, time to intercourse, etc.) were not statistically significantly different between patients regardless of their satisfaction status (Table 4). Contrary to this, continence correlated with a higher level of overall satisfaction. The number of pads used was the lowest among satisfied patients (mean 0.54), with a mean of 1.4 pads used for the neutral and 2.75 for the unsatisfied patients (Table 4). This result was highly statistically significant ($p = 0.01$; ANOVA). In patients who were using no pads or using a security liner, the average time to return to continence was 4 weeks among the satisfied patients, 10 weeks among the neutral patients, and 4 weeks among the dissatisfied. There was no statistically significant difference between these values, but this may be due to small numbers in the neutral and dissatisfied groups. In the entire cohort, only four (2%) patients suffered biochemical recurrence. The biochemical recurrence correlated significantly with low levels of satisfaction ($p = 0.03$).

Discussion

In various urological cancers, especially invasive bladder cancer and penile cancer, the aggressive nature of the disease means that patients value oncological control and survival as the overwhelming predominant factor affecting their satisfaction with the treatment.

Table 4 Postoperative predictors of satisfaction

Variable	Satisfied (%)	Neutral (%)	Not satisfied (%)	<i>p</i> -value Chi square, ANOVA, or Fisher exact
Age (mean)	60	60	63	NS
Age group				NS
Youngest (≤ 65)	91 (93.8%)	5 (5.2%)	1 (1%)	
$75 \geq, >65$	80 (92.0%)	3 (3.4%)	4 (4.6%)	
Old (>75)	3 (75.0%)	1 (25.0%)	0 (0.0%)	
BMI (mean)	26.90	25.41	25.04	NS
BMI groups				NS
$BMI \leq 25$	60 (87.0%)	6 (8.7%)	3 (4.3%)	
$25 < BMI \leq 30$	1 (1.2%)	1 (1.2%)	2 (2.4%)	
$BMI > 30$	2 (5.7%)	2 (5.7%)	0 (0.0%)	
PSA (mean)	5.75	5.11	3.90	NS
PSA group				NS
$PSA \leq 4$	67 (91.8%)	3 (4.1%)	2 (4.1%)	
$10 \geq PSA > 4$	95 (93.1%)	5 (4.9%)	2 (2.0%)	
$PSA > 10$	12 (92.3%)	1 (7.7%)	0 (0.0%)	
Final path Gleason sum				NS
≤ 6	59 (93.7%)	1 (1.6%)	3 (4.8%)	
$3 + 4$	81 (92.0%)	5 (5.7%)	2 (2.3%)	
$4 + 3$	25 (96.2%)	1 (3.8%)	0 (0.0%)	
≥ 8	8 (88.9%)	1 (11.1%)	0 (0.0%)	
pTNM				NS
$>2c$	29 (90.6%)	3 (9.4%)	0 (0.0%)	
$2c$	127 (93.4%)	4 (2.9%)	5 (3.7%)	
$<2c$	17 (89.5%)	2 (10.5%)	0 (0.0%)	
Use of erectile medications	133 (94%)	6 (4%)	3 (2%)	NS
No use of erectile medications	11 (92%)	–	1(8%)	
Erections	139 (95%)	6 (4%)	2 (1%)	NS
No erections	35 (85%)	3 (7%)	3 (7%)	
Intercourse	83 (96%)	2 (2%)	1 (1%)	NS
No intercourse	91 (89%)	7 (7%)	4 (4%)	
Orgasms : same/better	113 (93%)	5 (4%)	3 (2%)	NS
Orgasms: diminished	11 (100%)	0 (0%)	0 (0%)	
Orgasms: none	27 (90%)	1 (3%)	2 (7%)	
Time to intercourse; mean	8.6 weeks ($n = 82$)	3 weeks ($n = 2$)	26 weeks ($n = 1$)	NS
Continent	161 (95%)	6 (3%)	3 (2%)	$*p = 0.002$
Not continent	13 (72%)	3 (17%)	2 (11%)	
Number of pads; mean	0.54 ($n = 61$)	1.4 ($n = 5$)	2.75 ($n = 4$)	$*p = 0.01$
Time to continence mean	4 weeks ($N = 159$)	10 weeks ($N = 6$)	4 weeks ($N = 3$)	
Negative surgical margin	160 (92%)	7 (77.8%)	4 (80%)	NS
Positive surgical margin	4 (8%)	2 (22.2%)	1 (20%)	
Biochemical recurrence	3 (75%)	1 (25%)	0 [†]	$*p = 0.03$
No biochemical recurrence	157 (95%)	4 (2%)	4 (2%)	

[†] This category is not used in comparisons because its column proportion is equal to zero or one

Morbidity and quality of life issues thus assume a lesser importance. However, in view of its often slow-growing nature, patient satisfaction with treatments for localized prostate cancer are heavily dependent on morbidity and quality of life issues and not just on cancer outcomes. In fact, postoperative satisfaction is affected by the trifecta of sexual potency, urinary control and biochemical recurrence [9].

We developed this ‘multi-pronged’ model of multi-step, multi-faceted, comprehensive counseling and found it to be associated with a very high satisfaction rate of 93% and a very low regret rate of 0.5% at a median follow-up of 4.8 months after surgery. Although certain questionnaire studies have had response rates higher than in the current study [5, 6], our response rate of 50% compares favorably with many questionnaire studies assessing quality of life parameters [13]. The only predictor in our study of not completing the questionnaire was a lack of continence postoperatively. Otherwise, there were no statistical differences between responders and non-responders. It is intuitive to assume that patients who suffer worse continence outcomes are less likely to respond (as per this finding), and are perhaps less likely to be satisfied. Our data could thus be biased in favor of high levels of satisfaction. In fact, this is true for any questionnaire study, where the persons who respond are more likely to do so because they are satisfied with their outcome. At least in the current study, we were able to compare functional outcomes between responders and non-responders due to our IRB-approved follow-up database; this is not commonly done in other questionnaire studies [13].

Other investigators have reported satisfaction and regret outcomes in the radical prostatectomy population. Clark and Talcott [14] reported a 57% confidence with the treatment choice in a cohort that included different treatment modalities (surgical monotherapy, non-surgical monotherapy, and combination therapy). Schroeck et al. [6] retrospectively interviewed patients after radical prostatectomy (median 1.5 years after surgery) and found that out of 400 responses, 84% were satisfied and 19% regretted their decision of having undergone this procedure. Lower income, shorter follow-up, open retropubic approach (compared to robotic), and better urinary outcome scores were associated with higher levels of satisfaction.

The satisfaction levels of our patients were generally higher than those reported by these investigators,

and this may have partly resulted from differing definitions of satisfaction, or the fact that we questioned the patients much sooner after the procedure. Nonetheless, it is likely that at least part of the high overall satisfaction rates in our study was due to the structured counseling patients received. This has been corroborated by another recent study showing that improved preoperative counseling yielded less decision regret [15].

Looking at the sexual domain, 85% of preoperatively potent patients who were not having erections at the time of the questionnaire were still satisfied. Furthermore, 89% of those not having intercourse were also satisfied. From our own published data, 87% of previously potent patients having bilateral nerve-sparing regain potency by the end of the first postoperative year [16]. However, the high early sexual satisfaction rates do not match the mediocre erectile function rates achieved at this time point. It is therefore likely that patients are satisfied because they have been adequately counseled regarding their future chances of regaining potency.

The vast majority (93.2%) of satisfied patients reported some degree of orgasmic function, and thus patient numbers of those without orgasm were too small to make clinically meaningful comparisons regarding the relationship between restoration of orgasmic function and satisfaction.

Schroeck et al. [6] reported that lower continence levels are associated with poorer quality of life (QOL) scores. We also found higher levels of satisfaction in continent patients (95% vs. 72%; $p = 0.002$). Moreover, among incontinent patients, levels of incontinence as measured by the number of pads did have a bearing on the satisfaction level ($p = 0.01$); dissatisfied patients had significantly worse levels of continence. Nevertheless, a large proportion of incontinent patients (72%) were still satisfied. We have previously reported a continence rate of 97% at 1 year after RARP [17], and this information is shared with the patients during the counseling sessions. The difference in satisfaction rates may have resulted from apprehension of permanent incontinence, negative impact on immediate QOL, and an unmet expectation of a rapid return to continence. Even though the risk of postoperative leaks causing frank incontinence is stressed by our staff pre-operatively, this element of the trifecta remains the patients’ chief complaint in the early postoperative phase. This is a reflection of the burden of being

incontinent with regard to activities of daily living such as work and social interaction. We would therefore infer from our results that further efforts are warranted during the preoperative counseling sessions with regard to urinary outcomes. Despite the impact of prostate cancer surgery on QOL issues, most patients still considered oncologic results their top priority in our study. In fact, 97% of the respondents chose 'oncologic clearance/cancer-free' as their most important goal to be achieved.

We did not find any correlation between positive surgical margin (PSM) status and satisfaction levels. PSMs occurred more frequently in those with high-risk disease, who one would intuitively think would be more likely to be dissatisfied and/or express regret with their treatment choice. Again, therefore, it is likely that this did not occur due to adequate preoperative counseling in these high-risk patients. We recognize though that we cannot make this statement with certainty as the number of PSMs in our cohort was small ($n = 7$), and thus differences may not have been found in terms of satisfaction levels due to a low power effect. In an earlier study [14], patients did not require definitive cancer control in order to express satisfaction with their treatment decision. Less than 2% of our patients suffered biochemical recurrence at the follow-up time of our questionnaire. Patients who expressed regret had significantly higher recurrence rates than those who were satisfied, though this result needs to be interpreted with caution given the small numbers compared. If it were a true result however, this might be explained by the rationale that patients can accept PSMs if adequately counseled, but recurrence is tough to bear because of its psychologic impact and the subsequent adjuvant therapy (radiotherapy or hormonal deprivation) that is usually required.

Our study has a number of limitations. It would have been interesting to investigate the effect of clinical stage and Gleason score on satisfaction outcomes. We performed a subgroup analysis and found that neither clinical stage nor Gleason score impacted satisfaction outcomes, but given that there were relatively few patients that did not have T1c or Gleason 6 disease in our cohort, we believe that the lack of any correlation might simply have been due to a low power effect and thus do not feel that we can reliably make any comment regarding the effect of stage or Gleason on satisfaction. A larger study would be necessary to investigate this question properly.

Another limitation is that the questionnaire was administered relatively soon after surgery (median 4.8 months), and at a single time point, making this a cross-sectional study. It is possible that a longer follow-up could have influenced our findings and that satisfaction/regret outcomes change with time after surgery. As the majority of our patients were surveyed at a single time point (4–6 months postoperatively), we cannot make comment from this study as to whether satisfaction outcomes remain robust in the longer term. Indeed, other studies seem to support the view that satisfaction outcomes change with time after surgery [6, 18]. We therefore plan to administer the same questionnaire to this patient cohort at 2 years postoperatively and compare our findings with this data. Finally, the questionnaire we used in the assessment of satisfaction/regret has not been validated for that purpose. Such validated tools on patients with prostate cancer are not currently available, and we feel that we appropriately adapted the well-validated EPIC questionnaire to provide clinically meaningful information.

Conclusions

Our patient cohort expressed high levels of overall satisfaction during the first year following RALP reaching an overall satisfaction rate of 93%. This is likely, at least in part, to our structured preoperative education and counseling program. Further investigation at a later postoperative time point will evaluate whether these satisfaction rates are robust in the longer term. Despite our high early satisfaction rates, incontinence remains a major predictor of dissatisfaction and thus we suggest that RARP still needs further technical advancement to improve further early continence outcomes as well as even more detailed preoperative counseling of patients regarding this element of the trifecta.

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Conflict of interest The authors declare no conflict of interest.

Appendix 1: Patients education protocol

We follow a structured preoperative education and counseling program. This program involves two

preoperative sessions with nurses, physician assistants, nurse practitioners, fellows, surgeons, or surgical coordinators. In the first session, patients undergo multi-step counseling comprising a thorough explanation about the disease, as well as discussion of different treatment modalities and their possible outcomes. The second session focuses on preoperative, perioperative, and postoperative surgical issues. An effort is made to match clinical outcomes discussion with the patient's unique demographic, oncological and medical data. For example, we highlight that obese patients can have a more challenging recovery and higher grades, and stages of cancer can negatively impact longer-term functional recovery.

Preoperative preparations

The preoperative issues include discontinuation of known and potential blood thinners, weight loss, an exercise protocol, as well as preoperative medical and cardiac consults in appropriate patients. High-risk patients are also encouraged to meet the anesthesiologist preoperatively. A list of possible complications such as bleeding, fever, port site hernias, bowel injury, urinary leakage, pain expectations, cardiac and thrombotic complications are mentioned, and measures to minimize these events such as exercise and weight loss are also discussed [19–22]. Patients with a BMI >30 are counseled for their greater risk of anesthesia-related, perioperative, and surgical complications. This includes thrombo-embolic disease, anesthesia side-effects, incontinence, and sexual dysfunction following surgery [23–25]. We therefore institute a weight loss program for these patients and monitor them regularly. Once adequate progress is noted, a surgical date is finalized. Non-compliant patients are either referred to a weight loss specialist for more intensive programs or even recommended alternative treatments such as radiation ± hormonal therapy.

Postoperative expectations

Physical activity expectations

We highlight the value of ambulation following surgery. Patients who are sedentary prior to surgery are encouraged to follow a cardio and resistance training program following clearance from their internist. We motivate patients to start walking on their first

postoperative day. They continue on a walking program of 2–3 miles/day for the first 6–12 weeks, and are encouraged to continue moderate exercise, other co-morbidities permitting, in the long term. We ask patients to refrain from strenuous exercise so as to protect the port site sutures. We also warn against cycling in the early postoperative period as this can be painful. Patients are given written materials regarding the above issues.

Return to work expectations

Our own data suggests that the average time to return to work is around 17 days. Naturally, the suggested resting time before return to work depends on the type of job. Desk jobs require less time (*circa* 2 weeks) than jobs that require strenuous physical activity (*circa* 3–4 weeks). We advise that return to work should be gradual with rests in the afternoon and no heavy lifting.

Pain expectations

Preoperatively, patients are told that pain might be experienced during the first postoperative week; it usually peaks in the first 24–48 h and declines thereafter. Our own data suggests that by the end of the first postoperative week, pain is usually limited to the incision sites and managed with non-steroidals. Narcotic use is very rarely required. The other common source of pain is the laparoscopy-related insufflations which usually peaks on postoperative days 2–3 and gets better once the patient starts passing flatus. Mobilization usually helps in expulsion of flatus and is encouraged. The catheter can be a source of penile pain and is managed by intraurethral lidocaine 2%. Upon catheter removal acute urinary retention can rarely occur, and patients are warned to inform the team and head immediately to the nearest emergency room if it does happen.

Cancer control expectations

We discuss our own series' outcomes regarding margin rates and PSA recurrence. We highlight their individual risk of extraprostatic extension (EPE), contralateral involvement, and PSMs. We also warn patients with higher Gleason grades that their functional outcomes might be compromised in an attempt to afford them the best chance of cure. We tell patients

that oncologic outcomes are program-dependent and always counsel based on our own results. We also discuss adjuvant and salvage therapy in the event of EPE, PSM, or biochemical recurrence. We also have a discussion about the possibility of lymph nodal positivity and the management options if that should occur. High-risk patients with Gleasons 8–10, clinical T3 disease, and multiple positive biopsy cores are counseled about the need for adjuvant therapies, and consults with the medical oncologist and the radiation therapist are set up preoperatively.

Expectations of return of urinary continence

Urinary incontinence has a significant negative impact on most patients' QOL. We tell patients that immediately after the catheter is removed, they will usually experience some degree of leakage, although in most cases this is relatively mild. However, the vast majority of patients become continent with time in our series. The small percent that remain incontinent are counseled about Kegel exercises, biofeedback, sling procedures, and artificial urinary sphincters.

We provide the patients with our own results such that they go into the surgery with realistic expectations [17]. High-risk scenarios for incontinence or delayed continence include high BMI, large prostatic volume, non-nerve-sparing surgery, short urethral stump, previous urethral/prostatic surgery, and any idiopathic or neurologic condition affecting bladder storage.

Expectations of sexual function recovery

This is one of the most sensitive (for the patient) and challenging (for both surgeon and patient) aspect of prostate cancer surgery. Recovery of the sexual function following RARP depends on a vast list of oncologic [26], demographic [27, 28], medical, social [29], technical [30–33], and surgical experience [34, 35] related factors. Since most of the published data reports best case scenarios, patients often have very high expectations for sexual recovery [6]. This often becomes a source of lasting regret. We thus spend a lot of our preoperative education and counseling time discussing this aspect of the trifecta and use our own results to explain likely recovery times based on individual patient risk factors.

We highlight challenges of nerve preservation in the context of competing goals for nerve-sparing and

complete eradication of cancer [36]. We use anatomic diagrams and cartoons to supplement patients' understanding. MRI images and biopsy maps are generated to further aid the discussions. We ensure that by the end of our structured education and counseling program prospective surgical candidates have a clear idea of the extent and rationale for the proposed nerve sparing.

Appendix 2: Patient questionnaire

1. Please rank the following in order of your PRE-OPERATIVE priorities for treatment: (1= most important, 3= least important). Each number may be used only once.
 - Preservation of sexual function
 - Post operative urinary continence (no urine leakage)
 - Oncologic clearance (cancer-free)
2. Considering your current level of urine control ONLY, how satisfied are you with your decision to have had robotic surgery (select one)?
 - Regret having operation (0)
 - Extremely dissatisfied (1)
 - Dissatisfied (2)
 - Neutral (3)
 - Satisfied (4)
 - Extremely satisfied (5)
3. Considering your current level of sexual function ONLY, how satisfied are you with your decision to have had robotic surgery (select one)?
 - Regret having operation (0)
 - Extremely dissatisfied (1)
 - Dissatisfied (2)
 - Neutral (3)
 - Satisfied (4)
 - Extremely satisfied (5)
4. Overall, how satisfied are you with the treatment you received for your prostate cancer (select one)?
 - Regret having operation (0)
 - Extremely dissatisfied (1)
 - Dissatisfied (2)
 - Neutral (3)

- Satisfied (4)
 - Extremely satisfied (5)
5. Given your treatment experience, would you recommend robotic surgery to your friends/family (select one)?
- Yes—No
6. If you would not recommend robotic surgery, please place an “X” on the line next to the SINGLE most influential factor in your dissatisfaction (a,b) and the specific reason (i–iii) if any.
- a. Unrealized expectations of robotic surgery—
 - b. Poor clinical care (hospital staff, operating rooms, outpatient, etc.)—
 - i. Disappointing postoperative functional outcomes, specifically urine control or return of sexual function—
 - ii. Disappointing cancer control (i.e. biochemical recurrence)—
 - iii. Greater than expected degree of pain or time away from work—

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