

A single institution study on patient's self-reporting appraisal and functional outcomes of the first set of men following radical perineal prostatectomy

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KEY WORDS

radical prostatectomy ▶ radical perineal prostatectomy ▶ functional outcomes ▶ satisfaction with treatment

ABSTRACT

Introduction. This study evaluates the functional outcomes and satisfaction of an initial series of 47 patients after radical perineal prostatectomy performed in our department.

Material and methods. The first set of 47 consecutive patients underwent perineal prostatectomy during 2008 and 2009. Continence, sexual outcomes, and satisfaction of the treatment were evaluated using a self-reporting questionnaire, which was mailed to all patients after 15 to 33 months of follow-up. 26 patients (55.3%) returned a completed form and participated in the study. Additionally, final outcomes were compared to results reported elsewhere.

Results. Amid respondents, 91.7% were satisfied with the chosen treatment and 8.3% regret the previous decision. 38.5% patients reported any urine leakage, 15.4% drip up to 100 ml a day, and only one patient (3.8%) was totally incontinent. 76.9% men report a decline in prior sexual function. Six patients (23.1%) patients have any degree of spontaneous erections and undertake sexual activity. However, as erectile outcomes are adjusted to nine nerve-sparing cases, 66.7% have spontaneous erections and 55.5% undertake sexual activity, but only 40% of them describe their sexual function as satisfying.

Conclusions. Our survey demonstrates that, because of short operating time, fast recovery, low postoperative pain score, early patient mobilization and feeding, and a small (8-10 cm) and inconspicuous skin incision, radical perineal prostatectomy fully deserves to be recognized as a low-morbidity procedure. The perineal approach provides a quality of life and patients satisfaction rate comparable to trendy, highly equipped procedures and emerges as an attractive alternative to them. Even novice "perineal surgeons" may achieve favorable results.

same indications apply to all of them, but the latter two are in the limelight now – considered "minimally invasive procedures" and presumably less harmful. Particularly, robot-assisted prostatectomy has become a buzzword topic for mass-media and to some extent for medical journals. Its popularity grows sharply, especially in the USA [1]. A conviction that highly equipped and technologically sophisticated surgery is far more efficacious than the "classical" one is the main reason why sparks fly [2, 3, 4]. Furthermore, ill-informed patients accept this view as truthful, being unable to distinguish marketing and conjectures from facts – but as WJ Catalona stated, "*caveat emptor*" irrevocably. Currently, well-documented studies revealed data concerning outcomes of different procedures. The odds are that no modality provides substantial benefits over another and does not demonstrate an overwhelming superiority. Each option has characteristic advantages and disadvantages and inevitably impacts the patient's former way of life. Morbidity and complications following each method are similar [5].

The valuation of any method, beside assessment of objective medical parameters, should encompass patients' personal opinions and feelings. Satisfaction or regret of past treatment is an important issue and molds final aims. Functional outcomes determine social relations; significantly thwarting objective results of prostatectomy. The logic of removing a malignant tumor might be foiled by the need for continence and sexual status, which are regarded as independent and reliable predictors of satisfaction. Possible incontinence and/or impotence mostly have a negative impact on a patient's quality of life. However, many patients accept the post-prostatectomy consequences in exchange for cancer removal [6] while others do not reconcile with a deterioration in their previous quality of life. A given patient may assess mild incontinence as acceptable but, for another, even a subtle drip may be devastating. An objective measure of those subjective assessments is readiness to undergo the same treatment again, correlating with patient satisfaction even under the threat of similar complications. Such vague variables may be surveyed by self-reported questionnaires. Detailed evaluations of men after prostatectomy have been published previously as a multicenter or comparative study (Tables 2 & 3). However, such surveys have limitations linked to their essential subjectivism. The point at issue is a discrepancy between the outcomes reported by patients and those reported by scholars – the incidence of side effects is usually higher when reported by patients [6].

The purpose of the following paper is to estimate social outcomes of perineal prostatectomy performed at the same institution by the same team, examined by means of mail-in questionnaires. The term "social" refers to the patient's personal assessment of continence and sexual status, recovery rate with reference to the preoperative expectations, and individual quality of life.

The perineal approach for treatment of prostate carcinoma was described and performed by Young in 1904. After being improved by other contributors, the procedure gained acceptance until the retropubic approach was introduced. From then on,

INTRODUCTION

Surgery is still the leading treatment of locally advanced prostate carcinoma. Contemporary urology offers four types of prostatectomy: retropubic, perineal, laparoscopic, and robot-assisted. The

Table 1.

No	Premise	Options	Results: patients and % of all respondents
Q1	Do you experience any inconveniences that you relate to prostate surgery?	A. yes B. no	A. 18 (69.2%) B. 3 (11.5%)
Q2	Do you currently suffer (to any degree) from:	A. urine leakage? B. a decline in sexual function?	A. 10 (38.5%) B. 20 (76.9%)
Q3	If you answered A to Q2, how often do you experience urinary leakage?	A. a few times a day B. once daily C. only during strenuous activity	A. 5 (19%) B. 0 C. 8 (30.8%)
Q4	Under which circumstances do you drip or leak urine?	A. sporadically in the daytime, only under strain B. sporadically in the daytime, slight urinary incontinence C. only in the daytime irrespective of activity level D. constant urinary leakage, day and night E. a sense of urgency with subsequent leakage	A. 8 (30.8%) B. 1 (3.8%) C. 1 (3.8%) D. 1 (3.8%) E. 4 (15.4%)
Q5	How would you estimate (roughly) the volume of urine usually leaking out?	A. a few drops B. up to 100 ml C. a continual stream of urine	A. 9 (34.6%) B. 4 (15.4%) C. 1 (3.8%)
Q6	If necessary, how many protective pads do you use in a 24-hour period?	A. quite unusually, only for preventive purposes B. less than 3 pads C. 3-5 pads D. more than 5 pads	A. 6 (23.1%) B. 5 (19.2%) C. 2 (7.7%) D. 1 (3.8%)
Q7	If you have been continent since the beginning or have experienced considerable improvement in continence status with time, please select one of the following:	A. I am continent since the beginning B. I regained continence after 1 month C. I regained continence after 3 months D. I regained continence after 6 months E. I regained continence after 12 months	A. 2 (7.7%) B. 3 (11.5%) C. 4 (15.4%) D. 4 (15.4%) E. 2 (7.7%)
Q8	If you are sexually active, please evaluate the level with reference to the preoperative status.	A. the same as prior to surgery B. weaker erection, but its firmness is sufficient for intercourse C. weaker erection, some sexual activity but not firm enough for satisfying intercourse D. periodic erections at night E. erections do not occur	A. 0 B. 2 (7.7%) C. 3 (11.5%) D. 1 (3.8%) E. 20 (76.9%)
Q9	Have you been bothered (post prostatectomy) by other types of voiding disorders?	A. slow, tapered stream B. nocturnal or early-morning urge to void once at night C. nocturnal or early-morning urge to void 2-3 times per night D. nocturnal or early-morning urge to void 4 or more times per night	A. 1 (3.8%) B. 5 (19.2%) C. 1 (3.8%) D. 1 (3.8%)
Q10	Please characterize your satisfaction with the course of treatment.	A. I am very satisfied and I fully accept its consequences B. I am satisfied and I fully accept its consequences C. I am dissatisfied, I don't accept its consequences D. none chosen	A. 7 (29.2%) B. 15 (62.5%) C. 2 (8.3%) D. 2

the radical perineal prostatectomy (RPP) fell into oblivion while the retropubic approach became a gold standard in the treatment of localized prostate carcinoma [7]. Later, however, both of these procedures were overshadowed by the introduction of laparoscopic and robot-assisted procedures. Only recently has the perineal procedure gained renewed interest at many institutions. Its advantages and shortcomings have been evaluated extensively elsewhere. Given the number of published data, for economic and medical reasons, perineal prostatectomy has become recognized as an excellent minimally invasive procedure by many authors [8]. RPP has been implemented in our center after training under the kind auspices of Doctor H-J Keller in the Department of Urology, Hof, Germany.

MATERIAL AND METHOD

In the years 2008-2009, the first set of 47 patients with localized prostate adenocarcinoma underwent perineal prostatectomy (average age: 62.5 years). Two of the patients had simultaneous transperineal lymphadenectomy, and 11 of them (23.4%) underwent a nerve-sparing procedure. Operation parameters: average time was

110 min; mean blood loss was 350 ml. Postoperative period: mobilization and oral nutrition on 1st day postop; median hospital stay was 3.8 days; catheter removal on 7-10th day; suture removal on 10th day. Time-span between surgery and evaluation ranged from 15 to 33 months. Patients were assigned to RPP as candidates unsuitable for laparoscopy – some due to the patient's deliberate choice. Participants were mailed a uniform questionnaire (constructed by one of authors) consisting of 10 polynomial items regarding continence, potency, and self-perceived satisfaction of treatment. The men were neither counseled by sexual therapists nor medicated post-operatively. Professional status was not taken into account. Questions and answers are presented in Table 1.

RESULTS

From among 47 patients to whom questionnaires were sent, 26 patients returned a completed form (response rate 55.3%). The same person surveyed all the returned questionnaires. The sums of certain items do not equal "26" because some answers overlapped (ie. Q2A and Q2B) or a given situation did not occur (ie. Q5). Since evaluation was based on a patient's subjective opinions, some

Table 2.

Authors and year of publication	Type of procedure	No. of surveyed patients	Definition of continence	Continence rate
Weldon VE, Travel FR, Neuwirth H 1997	Perineal	220	Return of continence at 10 th month postoperatively	95%
Harris MJ 2003	Perineal	508	Report free of pad at 1 year	96%
Matsubara A, Yasumoto H, Mutaguchi K, et al. 2005	Perineal	41	Only occasional dribbling at 1 year	94%
Albayrak S, Cangouven O, Goktas C, et al. 2010 (Rpp continence)	Perineal	107	No use of a pad	95.3%
Demirkesen O, Bulent Onal B, Tunc B, et al. 2007	Retropubic	72	Leakage up to once a day - socially continent	92%
Lepor H, Kaci L, Xue X. 2004	Retropubic	621	Up to 1 pad a day	97.1%
Kao TC, Cruess DF, Garner D, et al. 2000	Retropubic	1,069	No self-reported incidence of any degree of incontinence Patients not requiring protection	34.5% 67%
Moul JW, Mooneyhan RM, Kao TC. (Moul survey)	Retropubic	374	Patients not requiring protection	55.1%
Roumeguere T, Bollens R, Vanden Bossche M, et al. 2003	Retropubic	77	No protection after 1 year	83.9%
Roumeguere T, Bollens R, Vanden Bossche M et al. 2003	Laparoscopic radical prostatectomy	85	No protection after 1 year	80.7%
Schmeller N, Keller H, Janetschek G. 2007	Laparoscopic radical prostatectomy	50	Up to one pad 2 years after procedure	91.9%
Guillonneau B, Cathelineau X, Doublet JD, et al. 2001	Laparoscopic radical prostatectomy	133	No protection necessary	85.5%
Eden CG, Cahill D, Vass JA, et al. 2002	Laparoscopic radical prostatectomy	100	No protection by 1 year	90%
Rassweiler J; Stolzenburg J; Sulser T, et al. 2006	Laparoscopic radical prostatectomy	5824	Total continence	84.9%
Krambeck AE, DiMarco DS, Rangel LJ et al. 2009	Robot-assisted radical prostatectomy	294	Continence after 1 year	91.8%
Ko YH, Coelho RF, Chauhan S, et al. 2012	Robot-assisted radical prostatectomy	1299	No pad and no urinary leakage by 3 months	86.3%
Zorn KC, Gofrit ON, Orvieto MA, et al. 2007	Robot-assisted radical prostatectomy	300	Return to baseline urinary function at 1 year Subjective continence at 1 year	71% 90.2%
Novara G, Ficarra V, D'elia C, et al. 2010	Robot-assisted radical prostatectomy	308	No leak in response to the question by 1 year	90%

items might have been answered imprecisely (ie. Q8) or were not filled by all participants (ie. two patients did not answer Q10).

Amid respondents, 91.7% were satisfied with the chosen treatment and 8.3% regret their previous decision and do not accept its consequences despite the fact that they were informed before the surgery (two patients did not answer). Such favorable results are interesting in light of Q1, where 69.2% patients reported the presence of any inconvenience related to the past surgery. In particular, 38.5% of the patients reported any degree of incontinence and 76.9% reported sexual dysfunction. From ten incontinent patients: 80% leaked sporadically in the daytime only during strenuous activity and 40% suffered from urgency with subsequent leakage. Volume of reported leakage was generally a little: 40% patients up to 100 ml, and 90% of them only a few drops. From among all respondents, 34.6% drip a few drops and 15.4% up to 100ml. Incontinent patients used protective pads – 60% for prevention only, and 50% used up to three pads daily. In summation, 69.3% of all patients are fully conti-

nent, 19.2% are "social dry" according to established classifications defined as using up to three pads per day, and 11.5 % are essentially incontinent. Only one patient reported a tapered stream. A significant number of patients reported considerable improvement in continence with time (50% of the entire cohort). This favorable trend was observed essentially during the first six months after the procedure (nearly 90% of initially incontinent cases). Overactive bladder symptoms such as nocturnal or morning urge to void affected nearly 27% of patients, but with moderate intensity – 85.7% of them reported up to three involuntarily bladder contractions per night.

In terms of sexual function, the survey yielded less advantageous results (with the reservation that patients did not use pharmacological or other aid). Self-assessed loss of pre-treatment sexual efficiency was reported by 76.9% of all respondents and only 23.1% had various degrees of erection. From among all the respondents, only five men (19.2%) were able to keep an erection to penetrate, but only two (7.7%) described intercourse as

Table 3.

Authors and year of publication	Type of procedure	No. of surveyed patients	Definition of potency acc. to survey	Potency rate
Weldon VE, Travel FR, Neuwirth H 1997	Perineal	50	Return of potency by 1 year	50%
Harris MJ 2003	Perineal	508	Return of any erections in nerve-sparing procedures	80%
Ruiz-Deya G, Davis R, Srivastav SK, et al. 2001	Perineal	54	Erection sufficient for vaginal penetration after nerve sparing procedure	41%
Tewari A, Srivasatava A, Menon M, et al. 2003	Robot-assisted radical prostatectomy	200	Erections adequate enough for penetration at 6th month after nerve sparing procedure	50%
Tewari A, Srivasatava A, Menon M, et al. 2003	Retropubic	100	Erections adequate enough for penetration by 1 year after nerve sparing procedure	50%
Kao TC, Cruess DF, Garner D, et al. 2000	Retropubic	1,069	Potency as preoperative	11.6%
Moul JW, Mooneyhan RM, Kao TC, et al. 1998	Retropubic	374	Potency as preoperative Potency after injection	12.8% 10.7%
Roumequere T, Bollens R, Vanden Bossche M, et al. 2003	Retropubic	77	Potency 1 year after bilateral nerve sparing procedure	55%
Talcott JA, Rieker P, Propert KJ, et al. 1997	Retropubic	94	Fully potent at 1 year after bilateral nerve sparing Potent after unilateral nerve sparing and non-nerve sparing procedure	11% 0%
Roumequere T, Bollens R, Vanden Bossche M, et al. 2003	Laparoscopic radical prostatectomy	85	Potency 1 year after bilateral nerve sparing procedure	65%
Schmeller N, Keller H, Janetschek G. 2007	Laparoscopic radical prostatectomy	50	IIEF-5 > 17 points after 2 years	0%
Eden CG, Cahill D, Vass JA, et al. 2002	Laparoscopic radical prostatectomy	100	Erections by 1 year after bilateral nerve-sparing procedure	62%
Rassweiler J, Stolzenburg J, Sulser T et al. 2006	Laparoscopic radical prostatectomy	5824	Erections by 1 year after bilateral nerve-sparing procedure	52.5%
Krambeck AE, DiMarco DS, Rangel LJ, et al. 2009	Robot-assisted radical prostatectomy	294	Any potency 1 year after surgery	70%
Madeb R, Golijanin D, Knopf J, et al. 2007	Robot-assisted radical prostatectomy	55	Fully potent at 12th month	32.7%
Zorn KC, Gofrit ON, Orvieto MA, et al. 2007	Robot-assisted radical prostatectomy	300	Baseline sexual function at 1 year after nerve-sparing procedure Subjective potency at 1 year	53% 80.4%
Novara G, Ficarra V, Fracalanza S, et al. 2010	Robot-assisted radical prostatectomy	41	Any erectile function after bilateral nerve sparing	81%

"satisfying" for adequate penile firmness and one (3.8%) has only nocturnal erections.

However, preceding proportions may lead to misinterpretation of outcomes of our survey. As erectile outcomes are converted with reference to nerve sparing cases (nine of the 26 responders), 66.7% have spontaneous erections, 55.5% undertake sexual activity, but only 40% of them describe sexual function as "satisfying".

DISCUSSION

The presented study has some limitations. First, this is an evaluation of the first group of patients undergoing radical perineal prostatectomy at our institution. Thus, our initial experience and

skills may have affected the functional outcomes. However, this should improve along with the learning curve. Secondly, questionnaires were completed by patients whose answers may not have reflected their actual status – answers obtained during physician interview may differ (be more precise) [6]. Thirdly, the majority of evaluated patients underwent RPP as unsuitable for laparoscopy (previous surgery, comorbidity, obesity, etc.). This group might be considered as "difficult patients" in terms of surgical determinants, usually prone to less favorable outcomes. Some patients opted for RPP as the preferred treatment after preoperative counseling and presentation of pros and cons of different methods.

Satisfaction surveys after a given procedure are by no means a new concept in medical literature. Many publications brought

Table 4.

Authors and year of publication	Type of procedure	No. of surveyed patients/No. of returned questionnaires	Satisfaction rate	Willingness to choose the same procedure again
Ruiz-Deya G, Davis R, Srivastav SK, et al. 2001	Perineal	200/124	94.8%	Not applicable
Demirkesen O, Bulent Onal B, Tunc B, et al. 2007	Retropubic	143/72	89%	87%
Schroeck FR, Krupski TL, Sun L, et al. 2008	Retropubic	372/219	87.1%	85.1%
Kao TC, Cruess DF, Garner D, et al. 2000	Retropubic	1396/1069	Not applicable	77.5%
Moul JW, Mooneyhan RM, Kao TC, et al. 1988	Retropubic	374/458	Not applicable	75.1%
Klein EA, Grass JA, Calabrese DA et al. 1996	Retropubic	/150	89.2%	Not applicable
Hara I, Kawabata G, Miyake H, et al. 2003	Retropubic	57/54	Not applicable	85.2%
Hara I, Kawabata G, Miyake H, et al. 2003	Laparoscopic radical prostatectomy	54/52	Not applicable	98%
Schroeck FR, Krupski TL, Sun L, et al. 2008	Robot-assisted radical prostatectomy	283/181	80.1%	73.9%

up this issue as an important assessor for a variety of procedures, even after anesthesia. Though not substantial, the number of our patients is comparable with other single-institution studies cited in worldwide literature (see Tables 2 and 3). It should be noted that massive cohorts usually come from multicenter, or even multinational databases and cover the outcomes of numerous urologists. However, the analysis of accumulated diverse results, otherwise admirable, interesting and worthwhile, raises some reservations as well.

The outcomes presented in our material (Table 1) are convergent in terms of continence, potency, and patients' satisfaction with other reported outcomes after retropubic, laparoscopic, or robot-assisted procedures and approximate to the results of other authors who may have been more skilled in the RPP procedure. Those retrospective studies are collected in Tables 2, 3, and 4. The risks of incontinence and/or erectile dysfunction are generally similar after all procedures. Overall, studies locate continence rate from 96% to 71%. However, one large (1,069 participants) multicenter survey revealed only a 34.5% rate of self-reported total continence (see Table 2) [9]. The urinary outcomes presented in our survey – 88.5% fully continent or "social dry" (69.3% and 19.2% respectively), only one patient fully incontinent – are satisfactory in comparison to such outcomes after retropubic (from 97.1% "socially continent" to 61% "not requiring protection"), laparoscopic (from 91.9% "up to one pad" to 80.7% "no protection"), or robot-assisted (from 90% "no leak in response to the question" to 71% "return to baseline") procedures. Furthermore, our results are close to other published results of RPP (from 96% "free of pad" to 94% "occasional dribbling").

In turn, numerous researchers have disclosed far less favorable sexual outcomes (Table 3). The issue is that definitions in "erectile surveys" vary considerably with different sources, possibly due to the sensitive and elusive nature of this matter, the author's bias, and/or ambiguity of classification. Last but not the least, it is difficult to compare different groups of surveyed patients. Evidently, the outcomes of a diverse set of patients compare unfavorably with the highly selected ones (homogenous with respect to T, Gleason score, pretreatment erectile status, age, comorbidity, body composition, etc.). The definition of satisfactory sexual outcomes differs according to different

authors from "return of any erections" through "erection sufficient for vaginal penetration" up to "potency as preoperative" (Table 3). Postoperative erectile status of our patients may be a reliable estimate with reference to the nerve-sparing subset. Of those men, 66.7% had spontaneous postoperative erections and 55.5% undertook sexual activity (described as "satisfactory" by 22.2%). This small group bears comparison with the published sexual outcomes of nerve sparing procedures – retropubic: from 50% "erections adequate enough for penetration" to 11% "fully potent", laparoscopic: from 62% and 52.5% "erections within one year" to 0% "IIEF-5 >17 points after two years", robot-assisted: from 81% "any erectile function" to 50% "erections adequate enough for penetration at 6th month" to 32.7% "fully potent at 12th month". Our results are similar to the sexual outcomes of RPP published elsewhere (from 80% "any erections" to 41% "erection sufficient for vaginal penetration").

Satisfaction outcomes evolving from completed surveys of our patients are approximate to and stand in comparison with the data presented in Table 4. The vast majority of men (91.7%) accept their overall quality of life following prostate surgery and confirm satisfaction with the chosen treatment. The interpretation and analysis of patient's satisfaction after a given therapy is seemingly uncomplicated. It should be emphasized that simple answer "yes" or "no" may not reflect actual status. The point at issue is that satisfaction is molded by awareness of the goals of an undertaken treatment and the disease at hand. It is worthy to mention that patients' satisfaction seems to be unrelated to the type of chosen treatment. An oft-cited article states that 19% of patients after prostatectomy regret their choice regardless of its type [10]. Surprisingly, the most discontent are patients after the robot-assisted procedure due to groundless sky-high expectations driven by media misinformation and touted by some market-oriented professionals. For this reason: "...urologists need to stop telling patients that one technique of performing RP is better or worse than any another because this assertion is currently unsupported by published data. ...evidence available to date strongly suggests that all techniques will perform as well, or as badly, as each other, in contrast to the surgeons utilizing them" [11]. Moreover the highest regret rate is noted among patients with low socioeconomic status [10, 12]. Other surveys reveal that functional outcomes, post-treatment quality of life, and

satisfaction with the past treatment are similar regardless of prostate cancer treatment type (surgery vs. brachy- or radiotherapy) as long as effective oncologic goals were accomplished [5,13]. An interesting comprehensive article on post-treatment satisfaction among patients who chose from prostatectomy, brachytherapy, conformal radiotherapy, or active surveillance revealed that nearly 88% were satisfied with therapy and that proportion was similar regardless its type [14].

It is wholly justified to name laparoscopic and robot-assisted procedures as "minimally invasive surgery". The authors intentionally used the aforementioned term (originally by previous authors) with reference to RPP only to emphasize its limited, "low-morbidity" impact on a patient's state when compared to the laparoscopic procedure [7, 8].

CONCLUSIONS

Our study demonstrates radical perineal prostatectomy as an outcome-effective method of surgical treatment of localized prostate carcinoma. This procedure enables radical cancer resection with favorable functional results comparable to outcomes reported for other types of prostatectomy. Even novice "perineal surgeons" might attain such results. Acceptance and satisfaction rate of our patients does not lag behind other surveys.

In our opinion, perineal prostatectomy undoubtedly meets the requirements of a well-tolerated surgery for patient's comfort, cosmesis (8-cm-long hidden incision), omission of muscle groups, short recovery, and satisfying functional outcomes. Operating time and hospital stay are short. This method deserves kudos and further renewed popularization. Its advantages have been recapped by a prominent urologist: "There is no doubt that ...perineal prostatectomy meets every goal of minimally invasive surgery" [15].

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