Preliminary evidence of the impact of social distancing on psychological status and functional outcomes of patients who underwent robot-assisted radical prostatectomy

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Introduction
Social distancing is considered the best strategy to prevent the spread of COVID-19 (COronaVIrus Disease 19). We aimed to analyse the effect of ‘social distancing’ on the emotional state, post-operative pain and functional outcomes of patients undergoing robot-assisted radical prostatectomy (RARP).

Material and methods
We retrospectively reviewed data of male patients who underwent RARP within the study period (from March to April 2019 [Group A = 27 patients] and from March to April 2020 [Group B = 29 patients]). Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) results were collected on the first day of hospitalization. Post-operative pain was assessed using the numerical rating scale (NRS) and visual analogic scale (VAS) after surgery in the post-anesthesia care unit (PACU) and at 24 hours. Functional outcomes were evaluated at the one-month follow-up. Demographic, pathological and peri-operative data were collected for all patients.

Results
There were no significant differences in demographics and pathological characteristics amongst the groups. We observed that patients in Group A had a statistically lower value on the PHQ-9 and GAD-7 questionnaires than patients of Group B. Moreover, Group A showed statistically significant better post-operative pain control in PACU and at 24 hours. At one-month follow-up, patients in Group B required more diapers for incontinence than Group A, showing poor early continence. Patients in Group A showed interest in sexual rehabilitation after 1.11 ± .320 months while patients in Group B after 2.59 ± .712 months (p < .001). Moreover, 17 out of 29 patients (58.62%) in Group B were referred to an andrologist, compared to 100% of patients from Group A (p = 0.0006).

Conclusions
Social distancing during the COVID-19 pandemic is associated with a poor pre-operative emotional state, as well as influencing post-operative pain, early urinary continence and desire for sexual rehabilitation.

Key Words: COVID-19 robot-assisted radical prostatectomy social distancing outcomes depression

INTRODUCTION

The COVID-19 pandemic has generated a revolution in outpatient and inpatient care management [1]. Social distancing is considered the best strategy to prevent the spread of COVID-19 (COronaVIrus Disease 19) [2]. Particularly, in our Department hospitalized patients are completely isolated and visits from relatives and friends are absolutely abolished. Moreover, all patients are admitted to a single room. Literature data shows that depression is a common cause of morbidity in patients who undergo surgery. Depression can be considered an independent risk factor for postoperative delirium and may cause...
a long and incomplete recovery after surgery [3]. We aimed to analyse the effect of ‘social distancing’ on the emotional state, post-operative pain and functional outcomes of patients undergoing robot-assisted radical prostatectomy (RARP).

MATERIAL AND METHODS

We retrospectively reviewed data of male patients who underwent RARP [4] within the study period (from March to April 2019 [Group A = 27 patients] and from March to April 2020 [Group B = 29 patients]). Despite the continued debate on the performance of minimally invasive surgery during the COVID-19 pandemic due to the risk of viral diffusion in the operating theatre, all prostatic cancers were managed with a robot-assisted approach using the AirSeal Intelligent Flow System [5]. After orotracheal intubation, a bilateral Transversus Abdominis Plane (TAP)-block was performed according to Rafi’s technique [6]. Retropubic RARP and posterior musculofascial reconstruction according to Rocco’s technique was performed in all patients [7].

Since 2017 our Urology Department provides psychological support for all patients undergoing surgery for pelvic cancer and some questionnaires are administered to the patients. Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) results were collected on the first day of hospitalization [8]. Post-operative pain was assessed using the numerical rating scale (NRS) and visual analogic scale (VAS) after surgery in the post-anesthesia care unit (PACU) and at 24 hours. Functional outcomes were evaluated at the one-month follow-up. Demographic, pathological and peri-operative data were collected for all patients. All data was collected in a prospectively maintained database and retrospectively analysed. Descriptive statistics of categorical variables focused on frequencies and proportions. Mean values with standard deviations (±SD) were computed and reported for all items. Yates’ chi-square and Student’s t-tests were used to compare the statistical significance of differences in proportions and means, respectively. Statistical significance was achieved if p-value was ≤0.05 (two-sides). Statistical analyses were performed using SPSS version 23.0 (Armonk, NY: IBM Corp.).

RESULTS

There were no significant differences in demographic characteristics amongst the groups. Moreover, rates of pelvic lymphadenectomy, nerve-sparing and bladder neck sparing techniques were similar across groups. Pathological stage and Gleason Score were also similar amongst the groups (Table 1). No urine leakage [9] and post-operative complications were detected.

Table 1 summarizes the differences in questionnaires, post-operative pain and functional outcomes between the two groups. We observed that patients

| Table 1. Differences between the two groups in demographic and pathological characteristics of patients, questionnaires, post-operative pain and functional outcomes |
|-----------------------------------------------|-----------------|-----------------|-------------|
|                                | Group A n = 27 (2019) | Group B n = 29 (2020) | p value |
| Age (years)                     | 63.71 ±6.82       | 64.43 ±6.91      | .6965     |
| BMI                             | 26.81 ±1.62       | 26.32 ±1.30      | .2158     |
| Diabetes                        |                  |                  |           |
| Prostate volume                 | 5/27 (18.52%)     | 6/29 (20.69%)    | .8948     |
| Prostate volume                 | 45.07 ±20.59      | 47.7 ±16.15      | .5956     |
| Unilateral nerve-sparing        | 5/27 (18.52%)     | 6/29 (20.69%)    | .8948     |
| Bilateral nerve-sparing         | 12/27 (44.44%)    | 11/29 (37.93%)   | .8233     |
| Non-nerve-sparing               | 23/27 (85.19%)    | 26/29 (89.66%)   | .9195     |
| Pelvic lymphadenectomy          | 13/27 (48.15%)    | 14/29 (48.28%)   | .7964     |
| Duration of indwelling catheter | 6.86 ±1.04        | 7.07 ±1.11       | .4690     |
| Gleason Score 6                 | 5/27 (18.52%)     | 6/29 (20.69%)    | .8948     |
| Gleason Score 7                 | 10/27 (37.04%)    | 9/29 (31.03%)    | .8480     |
| Gleason Score 7                 | 9/27 (33.33%)     | 11/29 (37.93%)   | .9364     |
| Gleason Score 8                 | 3/27 (11.11%)     | 3/29 (10.34%)    | .7341     |
| Pathological stage pT2          | 16/27 (59.26%)    | 19/29 (65.52%)   | .8359     |
| Pathological stage pT3a         | 8/27 (29.36%)     | 7/29 (24.14%)    | .8715     |
| Pathologically positive lymph nodes | 3/27 (11.11%)    | 3/29 (10.34%)    | .7341     |
| GAD-7                           | 7.37 ±1.11        | 8.48 ±1.36       | .002      |
| PHQ-9                           | 9.59 ±1.65        | 11.21 ±3.26      | .024      |
| NRS-PACU                        | 1.37 ±1.49        | 1.83 ±7.1        | .007      |
| NRS-24 hours                    | .02 ±.42          | .59 ±.63         | .015      |
| VAS-PACU                        | 2.93 ±.87         | 3.72 ±1.16       | .006      |
| VAS-24 hours                    | .48 ±.58          | 1.24 ±1.15       | .003      |
| N°diapers/day                   | .48 ±.51          | 1.07 ±.80        | .002      |
| Months to sexual rehabilitation | 1.11 ±.32         | 2.59 ±.71        | <.001     |

BMI—body mass index; GAD-7—Generalized Anxiety Disorder-7; PHQ-9—Patient Health Questionnaire-9; NRS—Numerical Rating Scale; PACU—Post-Anesthesia Care Unit; VAS—Visual Analogic Scale.
in Group A had a statistically lower value on the PHQ-9 and GAD-7 questionnaires than patients in Group B. Moreover, Group A showed statistically significant better post-operative pain control in PACU and at 24 hours. At the one-month follow-up, patients in Group B required more diapers for incontinence than Group A, showing poor early continence. Patients in Group A showed interest in sexual rehabilitation after 1.11 ± 0.320 months while patients in Group B after 2.59 ± 0.712 months (p < .001). Moreover, 17 out of 29 patients (58.62%) in Group B were referred to an andrologist, compared to 100% of patients from Group A (p = 0.0006).

DISCUSSION

Stress, anxiety, depressive symptoms, and insomnia have been documented during the COVID-19 outbreak [1]. Literature data reports that pre-operative depression can predict post-operative pain in patients who underwent open radical prostatectomy [10]. Our results highlight how the pre-operative psychological status of patients who underwent minimally invasive surgery affects post-operative pain. Moreover, depression and anxiety are shown to be risk factors for developing urinary incontinence with a dose-dependent trend [11]. Particularly, pre-operative depression or anxiety were associated with worse urinary continence status in a retrospective analysis of 5862 patients who underwent radical surgery for prostate cancer [12]. Depression was also found to be significantly associated with sexual functioning in men with a medical or surgical comorbidity, substance use, or other comorbid psychiatric disorders [13].

In our Department, outpatient visits were reserved only for oncological patients during the COVID-19 pandemic [4]. Despite this, all patients of Group B were consulted over the telephone about their desire for sexual rehabilitation. In our experience, during the COVID-19 pandemic, a lot of patients refused recommended sexual rehabilitation protocols. The missed or late sexual rehabilitation will possibly have an influence on future sexual function [14]. Moreover, sexual activity is considered by patients to a lesser degree because sexual needs are composed of a biological, psychological and social component [15]. Our results provide a further demonstration of the need of psychosexual counseling in patients who underwent pelvic surgery [16]. However, other large-scale prospective studies are needed to evaluate post-operative and functional outcomes of ‘social distancing’ on patients undergoing pelvic surgery. In particular, a multivariate analysis of factors influencing continence and sexual rehabilitation should be evaluated. Some home-based programs could expand to accommodate patients who are displaced from on-site care, enabling uninterrupted care while both patients and providers can remain at home [17].

CONCLUSIONS

Social distancing during COVID-19 pandemic is associated with a poor pre-operative emotional state, influencing post-operative pain, early urinary continence and desire for sexual rehabilitation.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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