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Climacturia after robot-assisted laparoscopic radical prostatectomy

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KEYWORDS
Prostatectomy;
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Abstract
Introduction: Adverse effects in the sexual sphere are common in patients who have undergone radical prostatectomy (RP). Climacturia, involuntary loss of urine during orgasm, occurs in 20-40% of cases after PR. We analyse its prevalence and associated risk factors after Robotic-assisted laparoscopic radical prostatectomy (RALRP).
Objectives: We analyse the climacturia prevalence after robotic-assisted laparoscopic radical prostatectomy (RALRP) and the association with other related factors.
Materials and methods: Retrospective study of 100 patients underwent PRLAR from May 2011 to July 2014. After excluding patients who received radiotherapy after surgery (17), those who did not have sexual activity (7) and those with whom it could not be possible contacted (14), a structured telephone interview was conducted in 62 patients, investigating: presence and intensity of climacturia, orgasmic quality, incontinence and erectile dysfunction (ED). Other factors analysed included neurovascular preservation and rehabilitative treatment for ED.

The statistical analysis consisted of *Chi^2 test* and logistic regression to evaluate associated factors.
Results: The mean age was 56 *vs* 59 years and the mean follow-up time was 26.6 *vs* 20.3 months, in the group with climacturia and without climacturia, respectively.

The prevalence of climacturia was 17.9% (slight leaks-82% and severe leaks-18%). In 37% of these patients occurred in all orgasms. The quality of orgasm after surgery was worse in 47%, better in 13% and equal in 40%. The quality of the orgasm worsened more frequently in the climacturia group (63% *vs* 37%).

The urinary incontinence rate was 41%, always effort incontinence. It was more frequent in patients with climacturia (62% *vs* 38%). In all patients with climacturia, bilateral neurovascular bundles preservation was performed. 32% of the patients had undergone post-surgical erectile rehabilitation with oral drugs.

No statistically significant differences were found between patients with or without climacturia respect to the parameters analysed.

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Conclusions: Climacturia rate after PRLAR in our series was 17.9%.

Patients with climacturia presented worse quality orgasms and a higher incontinence rate (p> 0.05).

None of the analysed parameters could be defined as predictors of climacturia.

PALABRAS CLAVE
Prostatectomía radical;
Climacturia;
Función sexual

Climacturia tras prostatectomía radical laparoscópica asistida por robot

Resumen

Introducción: Los efectos adversos en la esfera sexual son comunes en pacientes sometidos a prostatectomía radical (PR). La climaturia, pérdida involuntaria de orina durante el orgasmo, se presenta en un 20-40% de casos tras PR. Analizamos su prevalencia y asociación con otros factores relacionados tras prostatectomía radical laparoscópica asistida por robot (PRLAR).

Objetivos: Analizamos la prevalencia de climaturia tras PRLAR y su asociación con otros posibles factores riesgo relacionados.

Material y métodos: Estudio retrospectivo de 100 pacientes, sometidos a PRLAR desde mayo-2011 a julio-2014. Tras excluir a pacientes que recibieron radioterapia tras la cirugía (17), a los que no tenían actividad sexual (7) y aquellos con los que no se pudo contactar (14), se realizó entrevista telefónica estructurada a 62 pacientes, indagando sobre: presencia e intensidad de climaturia, calidad orgásmica, incontinencia y disfunción eréctil (DE). Otros factores analizados incluyeron la preservación neurovascular y el tratamiento rehabilitador para DE.

El análisis estadístico consistió en prueba de Chi^2 y regresión logística para evaluar factores asociados.

Resultados: La edad media fue 56 *vs* 59 años y el tiempo medio de seguimiento de 26,6 *vs* 20,3 meses, en el grupo con climaturia y sin climaturia respectivamente.

La prevalencia de climaturia fue del 17.9% (pérdidas leves el 82% y severas el 18%). En el 37% de estos pacientes ocurrió en todos los orgasmos. La calidad del orgasmo tras cirugía fue peor en el 47%, mejor en el 13% e igual en el 40%. La calidad del orgasmo empeoró con más frecuencia en el grupo con climaturia (63% *vs* 37%).

La tasa de incontinencia urinaria fue del 41%, siempre de esfuerzo. Fue más frecuente en pacientes con climaturia (62% *vs* 38%). El 68% de los pacientes usaba fármacos para DE. En todos los pacientes con climaturia se realizó preservación nerviosa bilateral. El 32% de los pacientes habían realizado rehabilitación eréctil postquirúrgica con fármacos orales.

No se encontraron diferencias estadísticamente significativas entre pacientes con o sin climaturia respecto a los parámetros analizados.

Conclusiones: La tasa de climaturia tras PRLAR en nuestra serie fue del 17,9%.

Los pacientes con climaturia presentaron orgasmos de peor calidad y una tasa de incontinencia superior (p > 0,05).

Ninguno de los parámetros analizados pudieron definirse como factores predictivos de climaturia.

Introduction

Radical prostatectomy (PR) is the curative treatment of choice in patients with low-risk or intermediate-risk prostate cancer (PCa) with a life expectancy longer than 10 years. Thus, in recent years, minimally invasive laparoscopic surgery and robotic-assisted laparoscopic radical prostatectomy (PRLAR) have displaced open surgical techniques, establishing themselves as *Gold Standard* in patients with localised PCa.

Adverse effects on the sexual sphere and urinary continence are widely known in patients undergoing radical prostatectomy (PR). However, a new concept has emerged, coined as climacturia or urinary incontinence during orgasm, according to series, it appears in approximately 20–40%[1] of patients after radical prostatectomy and which further complicates the urological challenge that these disorders suppose because of their high prevalence and the deterioration of the quality of life that they generate.

In this way, our main objective is to evaluate the prevalence rate of climacturia in our series and to analyse prognostic factors that were related to this symptom.

Material and methods

We performed a retrospective study analysing 100 patients underwent PRLAR in the period from May 2011 to July 2014.

Those cases that were pre-treated with brachytherapy or radiotherapy, as well as surgical rescues were excluded.

Patients were interviewed by telephone answering a non-validated survey on orgasmic function where we included information about the presence of climacturia, orgasmic quality, urinary incontinence and current treatment for erectile dysfunction (ED). On the other hand, we evaluated the intention of neurovascular preservation during surgery and the use of rehabilitation treatment for postoperative ED. Those patients who stated not have sexual activity (coitus, masturbation, foreplays, etc.) as well as those who did not complete the interview were also excluded from the study.

The severity of climacturia was defined as ''mild'' (drip) or ''severe'' as complete leaks. Their frequency was also classified as ''always'' if it occurred in all orgasms or ''sometimes'' if the leakages were sporadic.

The presence of urinary incontinence was defined as the use of more than 1 absorbent per day, without counting those cases with minimal losses using a safety absorbent.

Neurovascular preservation encompasses those cases with attempts to nerve sparing surgery, uni or bilaterally.

After defining the selected variables, we analysed 62 patients evaluating the prevalence of climacturia and the variables previously reviewed to determine their status as prognostic factors related to this symptom.

The statistical analysis was the Chi-square test and the logistic regression study to evaluate associated predictive factors. The statistical software used was the IBM-SPSS software 20.0.

Results

Among 62 patients evaluated, 12 had urine leakages during orgasm. Thus, the prevalence of climacturia in our series was 18%.

The mean age of both groups was similar, 56 years in the climacturia group and 59 in non-climacturia group ($p > 0.05$). The follow-up time was 26.65 and 20.35 months, respectively ($p > 0.05$).

Regarding the severity of climacturia, patients reported mild leaks in 81% and only 19% defined them as severe. Climacturia appeared ''always'' in 37% of patients and ''once'' in the remaining 64%.

The orgasmic quality after surgery was rated as worse in 47% of patients, better in 13% and similar in 40% of patients.

Analysing in both groups the worsening of orgasmic quality after surgery was more frequent in the climacturia group (63.7% *vs* 44.7%), although without statistically significant differences ($p > 0.05$).

The incontinence was effort incontinence in all cases and its overall prevalence was 41%, with a higher rate in the climacturia group (62% *vs* 38%) without statistical significance ($p > 0.05$).

In all patients with climacturia, uni or bilateral neurovascular bundles preservation was performed *vs* 97% in non-climacturia group. We did not find statistical significance ($p > 0.05$) between groups.

The 68% of patients were performing some kind of treatment for ED and the 32% of them had postoperative rehabilitative treatment with similar percentages in both groups (27.3 *vs* 27.4) ($p > 0.05$).

Discussion

Surgical treatment of PCa causes multiple side effects in the sexual sphere, beyond ED and urinary incontinence, both of which are widely known and studied. The management of disorders of the sexual sphere goes through keeping the sexual desire, satisfactory erections and a proper orgasmic function.

Climacturia is a disorder of orgasmic function that consists in unnoticed urine leaks during orgasm. Its prevalence rate is oscillating according to the series but it is around 20–40%[1,2] of patients underwent radical prostatectomy, although, not many studies outline the epidemiology of this entity.

In our series, its prevalence rate is about 18% and therefore within the prevalence range which appears in the literature.

There are several factors that could be predictive factors[2,3] such as age, morphological changes and penile shortening after surgery,[4] surgical technique with nerve-sparing surgery, painful orgasm or urinary incontinence.

In our study, none of analysed factors: age, orgasmic quality, incontinence, neurovascular preservation and rehabilitation treatment for ED obtained significant statistically differences, although a negative trend was observed in the climacturia group regarding the incontinence rates and orgasmic quality.

The association between urinary incontinence and climacturia is under discussion in several published studies. In 2011, Mitchell[5] showed a statistically significant association between climacturia and urinary incontinence ($p < 0.01$) with clinical improvement over time, reducing the rate of climacturia to 12% in the 24 months after surgery.

In 2007, Basurto's urology group[6] published one series, showing the tendency of patients with climacturia to have a higher rate of incontinence with more severe leaks with urinary urgency component, compared to the group without climacturia. As in our study, they did not obtain a significant statistically *p*-value.

On the other hand, the orgasmic function is affected in a wide and diverse way in these patients: anorgasmia, painful orgasm, decrease of the intensity, etc. In 2012, Dubbelman et al.[7] found that the orgasmic function was age-dependent, being impaired in patients older than 60 years in 77% after PR and only in 61% of those under age ($p < 0.0001$). However, in our series, in spite of the evident tendency to the postoperative orgasmic quality deterioration in climacturia group, we have not obtained significant statistically results in this point.

According to the technique, in 2016, Capogrosso et al.[8] compared the results between open and robotic prostatectomy in terms of painful orgasm and climacturia rate and they concluded that PRLAR showed lower rate of postoperative painful orgasm with greater and faster recovery of climacturia.

In order to avoid these problems, never-sparing RP is the ideal technique according to European Guidelines (AEU) in patients with organ-confined PCa with preserved erectile function. Likewise, Dubbelman et al.[7] presented results about orgasmic function of patients with and without neurovascular preservation with $p = 0.001$ and $p = 0.002$ in uni and multivariate analysis in favour to sparing-surgery to reach a better postoperative orgasmic function.

Conclusions

Disorders in the sexual sphere after RP such as anorgasmia, painful orgasm, worsening of orgasmic quality and climacturia are problems with high prevalence, causing significant emotional stress and psychological disorders in relation to the body image and self-esteem of these patients, who avoid sexual relations and seriously reduce their quality of life.

The climacturia rate in our series was approximately 18%, similar to other studies, depending on the different series.

In our sample, patients with climacturia presented worse quality orgasms and a higher urinary incontinence rate, without obtaining significant statistically differences.

Other parameters analysed (age, nerve preservation, rehabilitative treatment) did not obtain significant statistically differences to define them as predictive factors of climacturia.

Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that they have followed the protocols of their work centre on the publication of patient data.

Right to privacy and informed consent. The authors declare that no patient data appear in this article.

Conflict of interest

No conflicts of interest.

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