



ORIGINAL ARTICLE

Preservation of the internal vesical sphincter and proximal urethra during retropubic radical prostatectomy may improve earlier recovery of continence in selected patients[☆]



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Radical prostatectomy;
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Abstract

Objectives: To evaluate the influence of preservation of the muscular internal sphincter and proximal urethra on continence recovery after radical prostatectomy (RP).

Materials and methods: Fifty-five consecutive patients with organ confined prostate cancer were submitted to RP with the preservation of muscular internal sphincter and the proximal urethra (group 1) and compared to 55 patients submitted to standard procedure (group 2). Continence rates were assessed using a self-administrated questionnaire at 3, 7, 30 days and 3, 12 months after removal of the catheter.

Results: Group 1 had a faster recovery of continence than group 2 at 3 days (50.9% vs. 25.5%; $p = .005$), at 7 days (78.2% vs. 58.2%; $p = .020$), at 30 days (80.0% vs. 61.8%; $p = .029$) and at 3 months (81.8% vs. 61.8%; $p = .017$); there were no statistical difference in terms of continence at 12 months among the two groups. Multivariate logistic regression analysis of continence showed that surgical technique was significantly associated with earlier time to continence at 3 and 7 days. The two groups had no significant differences in terms of surgical margins.

Conclusions: Our modified technique of RP with preservation of smooth muscular internal sphincter as well as of the proximal urethra during bladder neck dissection resulted in significantly increased early urinary continence at 3, 7, 30 days and 3 months after catheter removal. The technique does not increase the rate of positive margins and the duration of the procedure.

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PALABRAS CLAVE

Prostatectomía radical;
 Esfínter urinario;
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La preservación del esfínter interno vesical y la uretra proximal durante la prostatectomía radical retropúbica puede mejorar la recuperación temprana de la continencia en pacientes seleccionados

Resumen

Objetivos: Evaluar la influencia de la preservación del esfínter interno muscular y la uretra proximal en la recuperación de la continencia después de la prostatectomía radical (PR).

Material y métodos: Cincuenta y cinco pacientes consecutivos con cáncer de próstata confinado al órgano se sometieron a PR con preservación del esfínter interno muscular y la uretra proximal (grupo 1), y se compararon con 55 pacientes sometidos a un procedimiento estándar (grupo 2). Las tasas de continencia se evaluaron mediante un cuestionario autoadministrado a los 3, 7 y 30 días y 3 y 12 meses después de la retirada del catéter.

Resultados: El grupo 1 tuvo una recuperación más rápida de la continencia que el grupo 2 a los 3 días (50,9 vs. 25,5%; $p=0,005$), a los 7 días (78,2 vs. 58,2%; $p=0,020$), a los 30 días (80,0 vs. 61,8%; $p=0,029$) y a los 3 meses (81,8 vs. 61,8%; $p=0,017$); no hubo diferencia estadísticamente en términos de continencia a los 12 meses entre los 2 grupos. El análisis de regresión logística multivariante de la continencia mostró que la técnica quirúrgica se asoció significativamente con un tiempo temprano hasta la continencia a los 3 y 7 días. Ninguno de los 2 grupos presentó diferencias significativas en cuanto a márgenes quirúrgicos.

Conclusiones: Nuestra técnica modificada de PR con preservación del esfínter interno muscular liso, así como de la uretra proximal durante la disección del cuello de la vejiga, dio como resultado un aumento de la continencia urinaria temprana a los 3, 7 y 30 días y 3 meses después de la retirada del catéter. La técnica no aumenta la tasa de márgenes positivos ni la duración del procedimiento.

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Introduction

Radical retropubic prostatectomy (RRP) is one of the standard surgical methods for the treatment of clinically localized prostate cancer (PCa). The preservation of urinary continence is one of the most important endpoints of the procedure.¹⁻⁷ During the last few years, many technical modifications have been described in order to improve the clinical results. In particular, the Rocco stitch has shown an important potential role for the early recovery of continence. In 2010 (during the 20th Italian Society of Uro-Oncology SIUrO Meeting – Abstract 223)⁸ and more recently⁹ we described our technical modification consisting in the preservation of smooth muscular internal (vesical) sphincter (MIS) as well as of the proximal urethra (PA) during bladder neck dissection.⁹ Other authors described the same technique recently, with first promising results.¹⁰ In this paper we describe our approach of preservation of MIS as well as of the PA during bladder neck dissection and we present our results in a prospective case-control study evaluating the early recovery of urinary continence.

Anatomic considerations and surgical technique

The first part of the procedure is similar to the standard retropubic radical prostatectomy described by Walsh and co-workers¹¹; concerning the maintenance of the anterior and posterior urethral supports, in all cases we preserved the pubourethral and puboprostatic ligaments and we

reconstructed the posterior musculofascial plate as described by Rocco⁶; great attention was paid to preserve the integrity of the external urethral sphincter muscle. In the second part of the prostatectomy, the procedure becomes anterograde, with the aim of preserving the internal vesical sphincter and the proximal urethra.^{8,9} We cut the fibers of the detrusor muscle at the insertion of the ventral aspect of the base of the prostate; at this level, the inner circular smooth muscle of the bladder neck forms a sphincteric ring of the smooth muscle that extends distally to the verumontanum and covers the longitudinally oriented smooth muscle component of the urethral musculature (the cranial prolongation of the lissosphincter); these structures represent the internal (vesical) sphincter that cover the proximal urethra (Fig. 1).¹² Presence of nodules of benign prostatic hyperlasia within the wall of the internal sphincter, previous surgery for benign prostatic obstruction (BPO), as well as loss of the integrity of the circular smooth muscle during radical prostatectomy may impair the function of the internal sphincter. A blunt dissection is continued until the ring-shaped vesical sphincter is separated from the prostate and the longitudinally oriented smooth muscle component of the urethral musculature is identified. Thus, the base of the prostate is gently separated from the urethra until the maximal length of the internal (vesical) sphincter is preserved and the urethra is incised to remove the catheter. To assess the oncologic safety of our surgical technique, we perform circumferential biopsies of the proximal urethra and of the base of the prostate during the dissection in all cases.

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