



PERIOPERATIVE OUTCOMES OF ROBOTIC AND LAPAROSCOPIC SIMPLE PROSTATECTOMY: A EUROPEAN-AMERICAN MULTI-INSTITUTIONAL ANALYSIS

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Open simple prostatectomy (OSP) has represented the standard surgical treatment for bladder outlet obstruction due to benign prostatic enlargement for a century, and it is still recommended as a standard therapy for large (>80-ml) glands (1). However, this procedure can be associated with a high risk of perioperative complications and prolonged hospitalization times. Thus, alternative minimally invasive options have been introduced and implemented with the aim of reducing surgical morbidity. Laparoscopic simple prostatectomy (LSP) was first described in 2002 by Mariano et al (2) and has since been reported by several investigators with encouraging outcomes. The aim of this study is to provide an outcome analysis of LSP and robot-assisted simple prostatectomy (RASP) and to identify factors associated with a favorable surgical outcome.

Between 2000 and 2014 at 23 participating institutions in the Americas (United States, Venezuela, Brazil, and Chile) and Europe (France, Italy, Portugal, Poland, Belgium, Turkey, and Sweden) were included in this retrospective study. The LSP was performed using different personal techniques developed based on the principles of transcapsular (Millin) (3), transvesical (Freyer) (4), or transvesicocapsular (Bourque) (5) approaches described for OSP. Each investigator adopted specific intraoperative strategies and technical nuances to optimize the procedure. RASP was also performed using a variety of techniques based on the same technical principles. A multivariable analysis was conducted to identify factors associated with a favorable trifecta outcome, arbitrarily defined as a combination of the following postoperative events:

International Prostate Symptom Score <8, maximum flow rate >15 ml/s, and no perioperative complications.

Overall, 1330 consecutive cases were analyzed, including 487 robotic (36.6%) and 843 laparoscopic (63.4%) cases. Median overall prostate volume, operative time and estimated blood loss was 100 ml, 100 min and 200 ml, respectively. An intraoperative transfusion was required in 3.5% of cases, and the median hemoglobin level drop on postoperative day 1 was 2 (range: 1–3.2) mg/dl. Median length of stay was 4 d (range: 3–5), whereas median time to Foley removal was 5 d (range: 4–7) d. An intraoperative complication was recorded in 2.2% of cases, and the conversion rate was 3% (2.9% for LSP and 3.1% for RASP). The postoperative complication rate was 10.6% (7.1% for LSP and 16.6% for RASP), most of complications being of low grade (Clavien 1–2). Trifecta outcome was not significantly influenced by the type of procedure (robotic vs laparoscopic; $p=0.136$). Operative time (RASP>LSP, $p=0.01$) and estimated blood loss (LSP>RASP, $p=0.03$) were the only two significant factors associated with higher likelihood of obtaining a favorable outcome.

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This article demonstrated multiple surgical approaches for LSP and RASP in patients suffering from LUTS from large prostatic adenomas. LSP and RASP is a technically feasible and viable treatment option that also allows management of other pathologies concomitantly. Studies with longer follow-up are needed to assess the long-term results and clarify the cost effectiveness of this procedures.

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