

Laparoscopic retropubic prostatectomy: initial experience

Prostatectomia retropúbica videolaparoscópica: experiência inicial

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ABSTRACT

Introduction: The surgical treatment of benign prostatic hyperplasia includes transurethral resection and suprapubic prostatectomy depending on prostate volume. The laparoscopic access creates a minimally invasive alternative to conventional suprapubic prostatectomy. **Objective:** to assess the feasibility of the open laparoscopic technique. **Patients and methods:** Between June 2006 and October 2009, 15 patients underwent laparoscopic retropubic prostatectomy in the treatment of benign prostatic hyperplasia (BPH). Laparoscopic access was used as a minimally invasive alternative to open adenectomy. Patient characteristics and prostate volume were assessed, as well as complications in the early and late perioperative and postoperative stages. **Results:** Mean age was 68 years (62-75 years), mean prostate weight 123 grams (70-190 grams). Time of surgery ranged from 120 to 220 minutes. Mean estimated blood loss was 450 mL and transfusion was required for one patient. Mean hospital stay was three days. Time with indwelling catheter was six days and time of bladder irrigation was of one day for all patients. Anatomicopathological studies confirmed the diagnosis of BPH in all cases. Among postoperative complications, one patient had a superficial surgical wound infection, which responded well to antibiotic therapy. **Conclusions:** Laparoscopic retropubic prostatectomy appears to be a safe procedure that reproduces the principles of open surgery. In this study we observed a low rate of complications, similar to previous studies. **Key words:** Prostate Hyperplasia/Surgery; Laparoscopy; Prostatectomy, Transurethral Resection of Prostate.

RESUMO

Introdução: o tratamento cirúrgico da hiperplasia benigna da próstata inclui a ressecção transuretral e a prostatectomia suprapúbica, dependendo do volume prostático. O acesso videolaparoscópico criou alternativa minimamente invasiva à prostatectomia suprapúbica convencional. **Objetivo:** avaliar a viabilidade da técnica aberta por via laparoscópica. **Pacientes e métodos:** entre junho de 2006 e outubro de 2009, 15 pacientes foram submetidos à prostatectomia retropúbica videolaparoscópica no tratamento da hiperplasia prostática benigna (HPB). O acesso videolaparoscópico foi utilizado como alternativa minimamente invasiva à adenectomia aberta. Foram avaliadas as características dos pacientes, o volume prostático e as complicações no per e pós-operatórios imediato e tardio. **Resultados:** a idade média foi de 68 anos (62-75 anos); o peso prostático médio foi de 123 gramas (70-190 gramas); o tempo cirúrgico variou de 120 minutos a 220 minutos. A perda de sangue estimada foi de 450 mL na média, sendo necessária transfusão em apenas um paciente. A permanência hospitalar média foi de três dias. O tempo com sonda vesical de demora foi de seis dias; e o tempo de irrigação vesical de um dia em todos os pacientes. O estudo anatomopatológico confirmou o diagnóstico de HPB em todos os

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casos. Nas complicações pós-operatórias, um paciente apresentou infecção superficial da ferida operatória, com boa resposta à antibioticoterapia. Conclusões: a prostatectomia retropúbica laparoscópica parece ser procedimento seguro, que permite reproduzir os princípios da cirurgia aberta. Neste trabalho observou-se baixa taxa de complicações, similar à da literatura.

Palavras-chave: Hiperplasia Prostática/cirurgia; Laparoscopia; Prostatectomia; Ressecção Transuretral da Próstata.

INTRODUCTION

Simple open prostatectomy for adenoma removal by the transvesical or transcapsular route has been used as an alternative to Transurethral Resection of the Prostate (TURP) in the treatment of benign prostatic hyperplasia (BPH) in selected patients whose with large-volume prostate or in patients with coexisting surgical diseases such as large bladder calculus, bladder diverticulum or inguinal hernia.¹⁻³ It allows for optimal surgical outcomes with lower reintervention rates than TURP^{2,5} as result of the complete removal of the adenoma, which is possible in an open surgery. The choice of surgical treatment in symptomatic BPH cases depends mainly on prostate size as measured by ultrasonography.^{2,5}

First described in 1947 by Millin, simple retropubic prostatectomy allows a complete enucleation of the prostatic adenoma by a transverse incision of the prostate capsule on the anterior surface of the prostate gland.^{4,5} With the advent of transurethral resection, the treatment of prostate hyperplasia was made almost exclusively thought that route.^{4,6} All minimally invasive techniques recently introduced in the treatment of BPH, such as laser ablation, thermotherapy, needle ablation, electro vaporization and prostatectomy are used in cases of early BPH, in small prostates.^{1,2} Recently, the use of *laser holmium* has been proposed as an alternative for the treatment of prostates over 100 grams.^{1,2,4} However, very large prostates continue, in all major urology centers in the world, to be treated by open surgery,^{2,4} since resection time is a limiting factor for TURP. In 2001, Mirandolino Mariano described the laparoscopic simple prostatectomy technique, which allowed for a less invasive treatment for prostates over 75 grams.³

Despite the low morbidity and mortality in those surgeries, laparotomy causes pain and surgical wound complications in the postoperative phase. Laparoscopy has the advantages of an open surgery and offers the benefit of being a minimally invasive treatment.

PATIENTS AND METHODS

This observational retrospective study describes an experience with 15 patients submitted to laparoscopic retropubic prostatectomy at the Alberto Cavalcanti Hospital in Belo Horizonte, Minas Gerais, Brazil, from June 2006 to October 2009.

Epidemiological features of the patients and of the disease were analyzed, including age group, comorbidities, prostate volume, and immediate and late preoperative and postoperative complications.

Laparoscopic access was the alternative to open surgery in patients with prostates over 80 grams. The laparoscopic approach was also used in two patients who had prostates below 80 grams and coexisting bladder stones when endoscopic material was unavailable for a transurethral removal of the calculi. In one patient, both a right inguinal hernia and a concomitant bladder stone were found. The inguinal hernia was treated in the same surgery, also by the laparoscopic approach. A Permanent Vesical Catheter was used for two patients due to acute urinary retention. No patient had ever undergone laparotomy procedures. All patients were informed of the novelty of the procedure and duly authorized its performance.

The approach used was transperitoneal laparoscopy in 10 patients and extraperitoneal laparoscopy in five patients.

SURGICAL TECHNIQUE

The procedure may be performed by transperitoneal or extraperitoneal laparoscopy, both under general anesthesia. Patients were positioned in the Trendelenburg position (Figure 1).



Figure 1 - Trendelenburg Position.

The surgeon and assistant worked above the patient's head, and the image was placed before them.

After a 10-mm trocar puncture in the umbilical region, three other trocars were positioned under direct vision: a 5-mm trocar about 2 cm medial to the right anterior superior iliac spine, a 5-mm trocar on the left lateral border of the left rectus abdominis muscle and a 10-mm trocar on the lateral border of the right rectus abdominis muscle (Figure 2).



Figure 2 - Position of Trocars.

In the extraperitoneal technique, the Retzius preperitoneal space was accessed digitally.

In the transperitoneal approach, dissection began with access to the Retzius preperitoneal space, after opening the anterior parietal peritoneum. Both prostate and gallbladder were identified and dissected. Two homeostatic stitches were made using Vicryl® 2-0 on the prostate's lateral pedicles, on the prostatovesical junction of each side. The opening of the prostate capsule and the bladder neck was made by longitudinal incision. Adenoma enucleation was performed with the aid of a laparoscopic forceps and the prostate cutting device idealized by Sotello (Figure 3).



Figure 3 - Prostate cutting device.

After dissection, the adenoma was left in the retrocecal recess until the end of surgery, when it was

bagged and removed after morcellation through the umbilical incision (Figure 4).



Figure 4 - Morcellated surgical specimen.

Trigonization of the bladder neck was performed by suturing the bladder neck mucosa to the prostatic capsule with a simple catgut 3-0 stitch. Suture was performed for the gallbladder and the prostatic capsule using Vicryl® 3-0 continuous suture on two planes (Figure 5).

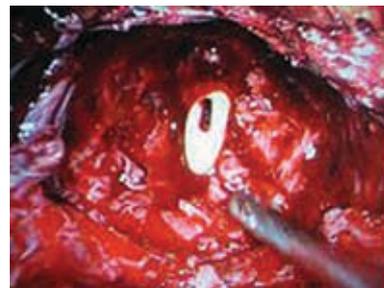


Figure 5 - Prostatic pocket.

A 3-way Foley 22 catheter was introduced and bladder irrigation was initiated. A Portovac® drain was set through the orifice of one of the portals. Bladder catheterization with the Foley catheter continued in the postoperative phase until the seventh day after surgery. The drain was removed when output became lower than 50 mL/24 hours.

RESULTS

Mean age was 68 (62-75) years of age, and mean prostatic weight was 123 grams (70-190 grams). Surgery time ranged from 120-220 minutes. Mean esti-

mated blood loss was 450mL, and transfusion was necessary for only one patient. Average length of stay was three days. Permanent Vesical Catheter time was six days, and bladder irrigation time was one day for all patients. The anatomopathological study confirmed the BPH diagnosis in all cases.

As for postoperative complications, one patient showed a superficial surgical wound infection with good response to antibiotic treatment.

DISCUSSION

Referrals for open prostatectomy include cases with prostates larger than 80 grams or the presence of associated diseases that cannot be treated by endourological methods. Both the transperitoneal and extraperitoneal laparoscopic routes allow for the complete enucleation of the prostate adenoma under direct view, with apparently less bleeding.^{1,4,7} Pneumoperitoneum and image magnification allow for the identification and cauterization of bleeding points. The extraperitoneal route theoretically reduces the risk of ileum and makes it easier to handle a possible urinary fistula. However, due to the smaller working space, it has the disadvantage of making reconstructive surgery difficult in case of very large adenomas.^{4,8-10} That difficulty may be overcome by using a laparoscopic morcellator. Open surgery does not offer the absorption risks present in TURP; however, these are more invasive procedures that involve longer hospital stays and higher morbidity.

As for postoperative complications, the incidence of bleeding was similar to that found in the literature.^{7,9,10}

Post-op complications were 13% in general, which is similar to what is found in the literature (0-28%).⁷⁻¹⁰

Despite the advance of medical treatment in BPH cases, surgical treatment is still very used in Brazil. The trend to operate increasingly larger prostates is observed, since drug treatment is effective in early cases. Thus, a considerable number of patients can benefit from the minimally invasive treatment.

CONCLUSION

Complication rates in the immediate preoperative and postoperative periods of simple transperitoneal and extraperitoneal laparoscopic prostatectomy in this series were comparable to those found in the literature, which suggests that this technique is an option for the treatment of BPH for patients with large prostates.

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