

Case Report

Simple Modified Transvesical Prostatectomy with Minimum Incision and Endoscopic Vascular Control: A Case Report

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Abstract

This work aims to report a case where a minimum incision and with vascular control endoscopically assisted transvesical prostatectomy was carried out to control hemostasis after prostate digital enucleation.

Introduction

Simple open prostatectomy surgical techniques first began with the suprapubic (transvesical) approach by Eugene Fullen (1894) and were popularized by Peter Freyer (1902) [1]. In 1946, Terence Millin developed the retropubic (transcapsular) technique, and for several decades these were the only options for prostate surgical treatment, notwithstanding the size [2].

Benign prostatic hyperplasia is common in men and is the main cause of urinary retention [1]. A transurethral resection of the prostate continues to be the gold standard for small-volume prostates [3]. A simple open prostatectomy via transvesical or transcapsular approaches is still the most widely used technique for prostates weighing more than 80 grams, although minimally invasive techniques such as laser enucleations; robotics; and video laparoscopic are being more described [4-6]. We present herewith a clinical case with some modifications of the transvesical technique, to show that it is possible to reduce the surgical incision and obtain a better control of surgical bleeding.

Case report

The patient in question was a sixty-five-year-old man, presenting important Lower Urinary Tract Symptoms (LUTS) which developed into increased urinary retention. The pre-operative exams showed a specific prostatic antigen (13.2 ng/ml); the ultrasound presented a 110-gram prostate; and the prostate biopsy revealed nodular hyperplasia of the prostate. The patient was placed in a lithotomy position,

while a drape that allows rectal digital examination during enucleation was employed.

A 3.6-centimeter suprapubic medial surgical incision was carried out (Figures 1,2). After dissecting the Retzius space, a longitudinal opening of the bladder was made,

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Figure 1: Incision.



Figure 2: Surgical specimen.

where the edges were separated using a vaginal speculum. A circular incision was then made in the bladder neck, carefully cauterizing it with greater emphasis on the five and seven o'clock positions, followed by digital dissection on the adenoma, (the right lobe was dissected with the right index finger and the left lobe with the left index finger). This was carried out with the aid of a digital rectal prostate elevation examination, thus facilitating access to the prostatic apices. After the removal of the surgical specimen, hemostasis of the bladder neck was performed, using four simple 2.0 catgut hemostatic stitches at the three, five, seven and nine o'clock positions. Next, a 26Fr bipolar resectoscope was introduced through the urethra, and the bleeding control was performed endoscopically (Figures 3,4). These arteries, at the points described, are technically inaccessible for hemostasis at the bladder neck level. During endoscopy, the edges of the bladder were momentarily occluded with Allis clamps, to distend the prostate compartment.

A 22Fr three-way bladder catheter was introduced into the urethra inserting the balloon into the prostate compartment. A cystostomy was then performed using a 16Fr Foley catheter. Single plane bladder suture with Polyglactin 2.0 was carried out, followed by bladder irrigation with saline solution.

Operative blood loss was 260 ml. Hemoglobin levels, immediately before surgery and 24 hours after, showed a drop from 14.1 g/dL to 13.3 g/dL. Surgical time was 65 minutes and the hospital stay time was 48 hours. There were no short- or medium-term complications. The anatomopathological study revealed nodular hyperplasia of the prostate and uroflowmetry, after three months, showed a maximum flow of 25.5 ml/sec.



Figure 3: Endoscopic hemostasis.

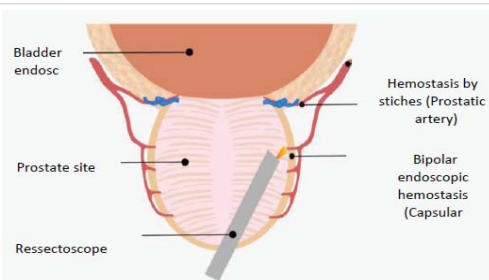


Figure 4: Prostatic arterial anatomy/hemostasis.

Discussion

Simple open prostatectomy, whether performed via the transvesical or transcapsular route, is still the most widely used technique for treating obstructive symptoms related to benign prostatic hyperplasia in large prostates [7].

Simple open prostatectomy, along with other enucleations, are the most effective and durable ways of controlling symptoms related to Benign prostatic hyperplasia and are available in the vast majority of centers [2,4].

Endoscopic, video laparoscopic, and robotic enucleations have been gaining ground recently because they present advantages concerning hospital stay time, surgical trauma, bleeding, and small incisions [4-6]. However, they are still expensive technologies that require a long learning curve [7]. The gold standard for prostates with a volume of less than 80 grams is still transurethral resection, despite presenting higher retreatment rates [7,8].

Simple minimum incision and endoscopic vascular control assisted transvesical prostatectomy has the same indications as the classic open prostatectomy techniques and offers potential advantages, which are reduced incision and effective control of bleeding, making it a minimally invasive surgical procedure with rapid recovery and short hospital stay, implying in cost reduction and greater bed turnover rate. This surgery can be performed in most hospitals and is potentially viable even in the poorest regions in Brazil and the world, where modern technologies are as yet not available. However, it does present a limitation which is greater technical difficulty due to the size of the incision, thus requiring a higher level of training.

Conclusion

Simple, transvesical prostatectomy with minimal incision and endoscopic vascular control is feasible due to little bleeding and short hospital stay time.

Ethical committee approval statement

The Ethical Committee of Alakh Prakash Loyal Shimia University, Shimla Himachal Pradesh has reviewed and approved the study titled "Drug Rehabilitation-Based Survey on Drug Dependence in District Shimla, Himachal Pradesh." This study adheres to the ethical principles outlined in the Declaration of Helsinki and relevant national and institutional guidelines for research involving human subjects.

The following key aspects were ensured during the review process:

1. Informed consent: All participants were adequately informed about the purpose, procedures, potential risks, and benefits of the study. Written informed consent was obtained prior to participation.



2. Confidentiality and anonymity: The confidentiality of participant data was maintained throughout the study, and information was anonymized to safeguard participant identities.
3. Voluntary participation: Participation in the study was entirely voluntary, with no coercion or undue influence. Participants were allowed to withdraw from the study at an stage without any repercussions.
4. Minimizing risk: The study design ensured that risks to participants were minimal, and measures were in place to address any discomfort or distress experienced during the survey.
5. Community benefit: The research aimed to contribute valuable insights into drug dependence in the region, ultimately serving to inform and improve interventions and policies in the community.

The Ethical Committee finds this study to be in compliance with all ethical standards and approves its conduct..

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