

HOLMIUM LASER ENUCLEATION OF THE PROSTATE (HoLEP) IN AMBULATORY SURGERY

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ABSTRACT

The focus of this work is the need to give an update on the holmium laser enucleation of the prostate (HoLEP) technique in ambulatory surgery. Indeed, over the last two decades, there has been a significant change in surgical treatment of benign prostatic hyperplasia. Laser surgery has been growing in popularity as an alternative to standard transurethral prostatectomy. Our goal was to analyse the opportunity to perform HoLEP in one-day surgery. Furthermore, there is a willingness of the French Ministry of Health to develop this kind of management. A pilot study was performed in 50 selected patients to evaluate HoLEP feasibility in ambulatory surgery from June 2013 to April 2014. The results were good with minimal morbidity and a high satisfaction rate, but excellent organisation is necessary, leaving no room for improvisation.

Keywords: Holmium laser enucleation of the prostate (HoLEP), ambulatory surgery, benign prostatic hyperplasia (BPH).

INTRODUCTION

The surgical treatment of benign prostatic hyperplasia (BPH) has been dominated by transurethral resection of the prostate (TURP) for many decades. Indeed, TURP is the first-line 'minimal' treatment of BPH and provides excellent long-term outcomes. However, as technology has evolved the surgical management of BPH has changed in the past few years, with laser prostatectomy increasing in popularity after the development of the holmium laser enucleation of the prostate (HoLEP) technique in 1998¹ and the introduction of green light laser vaporisation in 2000.² Laser prostatectomy may have several advantages, including lower risk of clot retention, shorter catheterisation time, and shorter hospital stay.³ Furthermore, some studies have shown favourable outcomes after HoLEP, even in men who underwent surgery while on anticoagulation.⁴

On the other hand, in the interest of economy, the French Ministry of Health asks us to perform 60% of ambulatory surgery in 2016. Therefore, with the French Holmium Users Group (HUG), we decided

to perform a pilot study to show the feasibility of this technique in day-case surgery. Three centres participated in this study: CHU Bordeaux, Clinique Saint-Joseph Paris, and CH Aix-en-Provence.

PATIENTS

The study group comprised a cohort of 50 patients undergoing HoLEP scheduled as a day-case procedure by several experienced surgeons (having performed >50 procedures) between June 2013 to April 2014. We decided to exclude from the study patients receiving anticoagulants, with acute urinary retention (AUR), and an American Society of Anesthesiologists (ASA) score >2. Elsewhere, no limit of prostatic volume was imposed. The mean patient age was 63.2 years (range: 46-75 years), mean prostate volume was 75.3 cm³ (range: 35-148 cm³), mean maximum urinary flow rate was 9.3 ml/s (range: 3-20 ml/s), mean post-void residual volume was 180 ml (range: 0-452 ml), and mean international prostate symptom score (IPSS) was 23/35 (range: 8-35).

RESULTS

The conversion rate to conventional hospitalisation at the end of Day 1 was 4% (two cases of haematuria with clots). The return rate of micturition at Day 2 was 91%. After 3 months of follow-up the readmission rate was 16%. For seven patients, the cause of readmission was AUR without clots, which required bladder catheterisation and administration of alpha-blockers over 24 hours. One patient experienced a melaena and required hospitalisation for 48 hours; the cause was not found.

The complication rate was 46% Clavien Grade 1 (haematuria +/- clots, AUR, and stress incontinence), 22% Clavien Grade 2 (urinary tract infections and urgency +/- incontinence), and 2% Clavien Grade 3 (melaena). The global satisfaction rate was 99%. At 3 months follow-up, the mean prostate volume was 26 cm³ (range: 15-62 cm³), mean maximum urinary flow rate was 27 ml/s (range: 6.2-62 ml/s), mean post-void residual volume was 20 ml (range: 0-92 ml), and mean IPSS was 4/35 (range: 0-12).

DISCUSSION

This study confirmed the feasibility of HoLEP as a day-case surgery for selected patients. The discharge pathway is associated with minimal morbidity and short-term results are in accordance with the available literature on HoLEP.

It is nonetheless important to note that excellent organisation is necessary to be successful, which leaves no room for improvisation. This means that there should be training of care teams,

informing of patients, and a written protocol. Training teams begins in consultation where the nurses must be convincing when they speak about ambulatory surgery. For the operating room, it is essential to respect schedules (early in the morning), to prepare the surgical materials, and to include the anaesthetists in this project. Finally, the nurses of the ambulatory surgery unit should be reassured. Informing patients requires a dialogue and a complete written document. Concerning the protocol, it should contain the following information: stop drinking 2 hours before surgery; first patients of the day should stop irrigation after arrival in the 1-day surgery department, and should start to drink as soon as possible; for patients discharged before 8 pm, the bladder catheter will be removed at home by a nurse the following day or the day after that (according to the team), and a follow-up phone call made 4 hours later. Ten patients benefited from spinal anaesthesia and 40 patients from general anaesthesia; we did not see a difference in results between these two groups.

There are very few studies on BPH day surgery. One study informs us of the readmission rate (3.7%) following outpatient urological surgery. The risk factors are history of cancer, bleeding disorder, male gender, ASA score 3 or 4, and age.⁵ Two published articles study HoLEP as a day-case surgery in 65 and 30 patients, respectively, with near identical results.^{6,7} The limitation of these studies is the small number of patients. Therefore, the results only allow for the confirmation of the feasibility of this ambulatory intervention by an experienced operator, although it is currently impossible to define predictors of failure with this coverage. Further studies are therefore required.

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