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PROSTATIC DISORDERS
ORIGINAL ARTICLE

Transurethral bipolar plasmakinetic vapo-enucleation of the prostate: Is it safe for patients on chronic oral anticoagulants and/or platelet aggregation inhibitors?

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KEYWORDS

Anticoagulant;
BPH;
LUTS;
PKERP

ABBREVIATIONS

Hb, haemoglobin;
HoLEP, holmium laser enucleation of the prostate;
INR, international normalised ratio;
M-TURP, monopolar TURP;
OA, oral anticoagulant;

Abstract ***Objectives:*** To assess the safety and efficacy of bipolar plasmakinetic enucleation and resection of the prostate (PKERP) for the management of benign prostatic hyperplasia (BPH) in patients on oral anticoagulant (OAC) therapy and/or platelet aggregation inhibitors (PAIs).

Patients and methods: In all, 91 patients were recruited and underwent PKERP whilst they were receiving PAIs (aspirin, 56 patients; clopidogrel, three; aspirin and clopidogrel, 11). In all, 15 patients were receiving an OAC drug perioperatively, whilst another six patients were on dual PAIs and OACs. The primary outcomes were the perioperative morbidity and mortality rates. The secondary outcomes were functional outcomes including maximum urinary flow rate (Q_{max}), International Prostate Symptoms Score (IPSS), and post-void residual urine volume (PVR).

Results: The mean (SD) age of the patients was 65 (5.9) years, preoperative adenoma volume was 80.9 (30.4) mL, and the operative time was 67 (23) min. No patient developed serious perioperative cardiovascular complications. The mean (SD) duration of hospital stay was 1.79 (1) days and the postoperative catheterisation time was 1.14 (0.76) days. The mean (SD) haemoglobin drop was 0.74 (0.61) g/dL, blood transfusion rate was 2.2%, and the clot retention rate was 2.2%. The mean (SD) postoperative Q_{max} was 18.6 (4.37) mL/s as compared to 7.2 (3.2) mL/

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s preoperatively ($P < 0.001$), and the preoperative IPSS was reduced from 24.3 (6.1) to 5.7 (2.3) postoperatively ($P < 0.05$). Prostate volume measured by transrectal ultrasonography was significantly reduced from a mean (SD) of 80.9 (30.4) mL preoperatively to 29.5 (10.6) mL postoperatively ($P < 0.001$).

Conclusion: Minimally invasive PKERP may be considered as a safe and effective treatment option for managing patients with BPH receiving OAC/PAI drugs.

PAI, platelet aggregation inhibitor;
PKERP, plasmakinetic enucleation and resection of the prostate;
PVR, post-void residual urine volume;
Q_{max}, maximum urinary flow rate;
ThuVARP, thulium vaporesection of the prostate;
ThuVEP, thulium vapoenucleation of the prostate;
UI, urinary incontinence;
US, ultrasonography

Introduction

One of the common problems affecting older men is LUTS, which is related to BPH. The incidence of LUTS increases proportionally with age, approaching 50% by age of 60 years and 90% by the age of ≥80 years [1] There are several treatment options available to relieve patients' symptoms and their related morbidity, including: watchful waiting, medications, minimally invasive surgeries, TURP, and open prostatectomy [2]. Although the 'gold standard' for the endoscopic management of BPH is TURP, this approach is associated with high complication rates, especially haemorrhage, which can lead to a prolonged hospital stay and may necessitate blood transfusion [3].

The number of patients requiring oral anticoagulant (OAC) therapy and/or platelet aggregation inhibitors (PAIs) is increasing steadily. Nearly, 30% of patients who may need surgery have cardiovascular diseases and are treated with PAI and/or OAC medications. These patients are at increased risk of haemorrhagic complications, and therefore represent a challenge for urologists [4]. The complications of altering PAI and OAC therapies for surgery are underestimated, and simple stoppage of these medications with no substitution is associated with a high risk of thromboembolic adverse effects [5].

Multiple minimally invasive approaches have been attempted. Minimally invasive laser prostatectomy is commonly used and has several advantages, such as speedy relief from symptoms, quick recovery, as well as reduced postoperative complications. Nevertheless, the cost issue, as well as the steep learning curve of laser prostatectomy restrict its widespread use, and indeed this technique is used in few centres [6].

In contrast, recently introduced bipolar electrosurgical technology has gained attention worldwide due to its low morbidity and affordability. In addition, bipolar electrosurgical technology achieves similar results to TURP in improving patient's symptoms [7].

Today, several bipolar electrosurgical devices are available to minimise the complications of standard monopolar TURP (M-TURP) with concomitant increase/maintenance of durability and effectiveness [8].

The currently available information about the safety of transurethral plasma kinetic prostatectomy for patients on OAC therapy and/or PAIs are scarce, and mostly concern different laser techniques, which are not commonly available in developing countries due to high cost and lack of appliances, such as morcellators, in these countries. Thus, the present study was designed to investigate whether bipolar transurethral plasmakinetic enucleation and resection of the prostate (PKERP) is feasible and safe in patients on chronic OAC therapy and/or PAIs.

Patients and methods

This is a prospective study carried out in Banha University Hospitals, Banha, Egypt and the study protocol was approved by the Local Ethics Committee. From May 2012 through July 2016, 100 patients with LUTS due to BPH were recruited. Patients fulfilling the inclusion criteria and having none of the clinical exclusion criteria were enrolled into the study after they had signed the informed consent form.

Patients were eligible for the study if they meet the following inclusion criteria: Patients with LUTS due to BPH with a maximum urinary flow rate (Q_{max}) of ≤10 mL/s, severe LUTS/BPH requiring surgical