



ORIGINAL RESEARCH PAPER

Surgery

EXPERIENCE WITH PHOTOSELECTIVE VAPORIZATION OF THE PROSTATE ON MEN TAKING ORAL ANTICOAGULANTS IN OUR TERTIARY CARE CENTRE: MANGALORE

KEY WORDS: Benign prostatic hyperplasia, Photoselective vaporisation of the prostate (PVP), oral anticoagulants.

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ABSTRACT

BACKGROUND: Photoselective vaporization of the prostate (PVP) is now increasingly performed surgical procedure for benign prostatic obstruction. This approach has become particular favoured for men on anticoagulation agents. This study was to examine the perioperative outcomes in men on oral anticoagulant undergoing PVP.

Methods: This study was conducted from Jan 2015 to Dec 2020. A retrospective, multicentre cohort study was used to assess the incidence of morbidity in patients undergoing PVP while on oral anticoagulants therapy, with particular reference to bleeding complications. Data was analysed for patients who had undergone PVP whilst oral anticoagulants were continued perioperatively.

RESULTS: There were a total of 44 subjects who had undergone PVP whilst oral anticoagulants had been continued during the perioperative period. The mean age was 71 +/- 7.4 years. The mean prostate volume, energy utilization and vaporisation time was 72 +/- 36 mL, 324 +/- 201 kJ, and 39 +/- 18 min respectively. The mean postoperative duration of catheterization and duration of hospitalization was 2.1 +/- 2.6 days and 2.1 +/- 2.6 days respectively. There were 2 patients suffered of urinary tract infection and 5 subjects required re-catheterisation for non-hematuric retentions.

CONCLUSIONS: As our population ages and the presence of an increasing number of co-morbid conditions, BPH patients are frequently using oral anticoagulants therapy. Our study has failed to identify any significant bleeding-related outcomes. This study supports the safety of men on oral anticoagulants undergoing PVP. Larger scale, prospective trials will be required to further confirm these findings.

INTRODUCTION

Benign prostatic hyperplasia (BPH) is a chronic condition associated with progressive lower urinary symptoms. It affects approximately 75% of men aged >60 years (1). First-line therapy is medical and involves the use of alpha blockers, 5-alpha-reductase inhibitors, and anticholinergics either singly or in combination (2).

For many patients, however, these medications do not provide adequate symptom relief, and surgical intervention is necessary to relieve bladder outlet obstructions. Transurethral resection of the prostate (TURP) has long remained the benchmark surgical modality for BPH because it has a high rate of success in improving symptom scores, urinary flow, urinary post-void residue, and the retreatment rate. However, multiple complications have been observed, including perioperative bleeding, blood transfusions, transurethral resection syndrome, prolonged catheterization, long hospital stays, urinary incontinence, and retrograde ejaculation (3).

Transurethral resection of the prostate (TURP) is the surgical gold-standard for men with BPH (4), however it requires prior cessation of anticoagulant therapy. Several alternative procedures are available including holmium laser enucleation of the prostate, prostatic artery embolization and photoselective vaporisation of the prostate (PVP, also known as Greenlight_ laser prostatectomy) (5,6). The objective of this study was to analyse morbidity and early functional outcomes following PVP where oral anticoagulants therapy was continued throughout the perioperative period.

METHODS

This study was conducted from Jan 2015 to Dec 2020. A retrospective, multicentre cohort study was used to assess the

incidence of morbidity in patients undergoing PVP while on oral anticoagulants therapy, with particular reference to bleeding complications. Data was analysed for patients who had undergone PVP whilst oral anticoagulants were continued perioperatively.

Forty-four patients were identified and assessed in this study. Medications unrelated to bleeding risk were not assessed in this paper, and other medications were continued as per the anaesthetic assessment preoperatively. The indications for surgery were at the discretion of surgeons at each participating centre and were consistent with indications as defined in current practise guidelines. Each patient was consented appropriately prior to surgery by the operating team.

Perioperative factors considered in this analysis include co-morbid cardiovascular conditions, types of anticoagulation and anti-platelet agents, International Prostate Symptom Score (IPSS), prostate volume and American Society of Anesthesiologists (ASA) score. Follow up was taken at 3 months in which IPSS, Qmax, and PVR was seen.

RESULTS

Forty-four patients were identified and assessed in this study. All patients were using following oral anticoagulants as mentioned in table 1.

Table 1: Oral Anticoagulants

Agent	Patients
Aspirin	11
Clopidogrel	13
Warfarin	4
Apixaban	5

Dabigatran	6
Rivaroxaban	5

Almost all patients were on anticoagulation for ischaemic heart disease, with one patient being on treatment for pulmonary embolism and one for cardiac valve replacement.

The following factors we studied in all patients except IPSS in which 16 patients (36%) were unable to be assessed preoperatively due to indwelling catheters.

Table 2: Patient Factors

Patient factor	Value
Age (years)	71 +/- 7.4
BMI (kg/m ²)	24 +/- 3.4
ASA	2.4
IPSS	19 +/- 7
Prostate volume (mL)	72 +/- 36

Surgical parameters varied considerably given the wide range of prostate size, where the mean energy utilisation was 324 +/- 201 kJ, mean laser vaporisation time was 39 +/- 18 min and mean intervention/operative time was 58 +/- 24 min.

Despite the age and comorbidities, there were few adverse postoperative outcomes or complications reported as mentioned in table 3.

Table 3: Complications

Complications	Patients affected
Re-catheterisation for urinary retention	5 (11%)
Urinary tract infection	2 (4%)
Haematuria requiring transfusion	0

The majority of patients were discharged Day 2 postoperatively with a mean length of stay 2.6 +/- 2.2 days. The mean postoperative duration of catheterization was 2.1 +/- 2.6 days. In follow up after 3 months improvement was seen in all patients with respect to their previous pre-operative IPSS, Qmax, and PVR value except 4 patients who lost their follow up.

DISCUSSION

TURP has long been the gold standard surgical treatment for benign prostatic obstruction. During the past two decades, however, PVP has emerged as a safe and efficacious alternative. The advantages of TURP include a shorter duration of postoperative catheterization, a shorter hospital stay, and reduced blood loss, the last of which has made PVP particularly useful in patients taking antiplatelet or anticoagulant medications.

The mean operating time was 58 minutes, 39 of which were direct laser use. The mean duration of indwelling catheter placement was 24 hours. These parameters are comparable with those found in earlier studies (7-9).

We found clinically and statistically significant improvements in all functional parameters (IPSS, Qmax, and PVR) between baseline and the 3-month follow-up, similar to that reported by other researchers (8-10).

Conversion to standard TURP was not required for any patient; this is a low rate as compare to that reported by Bachmann et al. (7) and Ruzsat et al. (11). Chung et al. (12) reported a recatheterization rate of 10%, which is almost similar to our study. Bachmann et al. (7) reported a recatheterization rate of 2.7% of their patients which is better than our study.

Conclusion

As our population ages and the presence of an increasing number of co-morbid conditions, BPH patients are frequently using oral anticoagulants therapy. Our study has failed to identify any significant bleeding-related outcomes. This study supports the safety of men on oral anticoagulants

undergoing PVP. Larger scale, prospective trials will be required to further confirm these findings.

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