

Early results of transurethral vaporisation of prostate in Nigeria

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Summary

Objective: to determine the effectiveness of transurethral electrovaporisation of prostate for the relief of obstructive prostatic disease in Nigeria.

Methods: Consecutive patients presenting with obstructive prostatic disease with prostate size of less than 40gm were treated by transurethral electrovaporisation of prostate using a 5mm rollerball electrode.

Results: A total of 27 patients were entered into the study, 7(26%) had clinically malignant prostates; 2 patients (7%) had immediate post operative retention requiring resection of residual prostate. No patients exhibited the clinical features of TUR syndrome, all patients were discharged by the 4th post operative day and required no blood transfusions.

Conclusions: Transurethral electrovaporisation is effective for treatment of obstructive prostatic disease, benign or malignant, using the 5mm rollerball instead of the recommended vaporotrode still confers benefit over TURP. TEVP confers all the benefits of TURP with less morbidity.

Key words: Transurethral, Vaporisation, Prostate, Nigeria.

Résumé

Objectif: Déterminer l'efficacité du "Transurethral" par électro-évaporation de la prostate pour soulager le mal de l'épidémie de la prostate obstructive au Nigeria.

Méthode: Des patients se présentant successivement avec l'épidémie de la prostate obstructive dont la taille de la prostate mesurait un peu moins de 40mg ont été traités par "Transurethral" électrovaporisation de la prostate en utilisant une "rollerball" électrode de 5mm.

Résultats: L'étude a été expérimentée sur un total de 27 patients, dont 7 (soit 27%) présentaient des prostatites cliniquement malignes, 2 patients (soit 7%) ont eu une rétention post-opératoire nécessitant une ré-opération de la prostate résiduelle. Aucun patient n'exhibait d'anomalies cliniques du "syndrome de TUR". Tous les patients ont été déchargés (relâchés) au 4^{ème} jour post-opératoire et ne nécessitaient pas de transfusion sanguine.

Conclusions: Le "Transurethral" par électrovaporisation est efficace pour traiter l'épidémie de la prostate obstructive que soit bénigne ou maligne. En faisant usage du "rollerball" électrode au lieu du "vaporotrode" recommande tout en conférant le bénéfice du "TURP" "TEVP" confère tous les bénéfices du

"TURP" avec moins d'effets morbides.

Introduction

The practice of Surgery has been transformed in the last 10-15 years because of rapid technological developments. This technological advance has ushered minimally invasive procedures that have been applied with great benefit in the different surgical specialties.

Among the first to arrive was Transurethral Resection of Prostate (TURP) and it is still one of the most successful of these minimally invasive procedures. In this period, it has become the Gold Standard for relieving intravesical prostatic obstruction. Complication rates of 2.5% - 23.3% have been quoted in the literature for TURP but on the whole these complication rates are in decline.

Recently, a number of newer forms of these minimally invasive procedures such as Transurethral incision of Prostate, Laser coagulation and Vaporisation, Ultrasonic Aspiration have been introduced. These methods have been introduced mainly to reduce the complication rate accompanying TURP. However for some of the procedures, there is a need for investment in expensive new equipment and in some cases acquisition of new skills by the Urologist.

The latest technique in this line involves Transurethral Electroevaporisation of the Prostate using standard radiofrequency electrosurgical current with conventional Resectoscope equipment. This technique requires no new equipment apart from a specially designed loop electrode. There is no learning curve for the urologist already trained in transurethral resection techniques.

This is a report of the early results of Transurethral Electroevaporisation of Prostate in Nigeria using a 5mm Rollerball Electrode.

Materials and methods

This is a retrospective chart review of 27 consecutive patients presenting in acute urinary retention due to prostatic disease with prostate gland volume of 40cc or less by clinical evaluation and transrectal ultrasonography.

Inpatient and outpatient records, operative reports and discharge summaries were reviewed. All patients had spinal regional anaesthesia with cardiopulmonary monitoring. Perioperative antibiotic cover depended on antibiotic sensitivities.

Storz Resectoscope equipment was used utilizing 24 Fr intermittent flow resectoscope with a Valleysay

electrosurgical current generator. Electrovaporisation was done at 200-250W and 60W for coagulation using a 5mm rollerball electrode in place of a grooved vaportrode.

1.5% Glycine was used as irrigant employing the usual technique as for TURP. Patients with clinically malignant prostates had biopsy samples obtained by resection before vaporisation and a few chips were also obtained from patients whose prostates were considered to be obviously benign on clinical evaluation.

Post-operatively, 22 Fr 3 way simplastic catheter was used with continuous saline irrigation for 24 hours. All patients were given postoperative antibiotics.

Results

A total of 27 consecutive patients presenting in acute

Results Table

Carcinoma of prostate	7
Benign prostatic hypertrophy	20
Post-operative retention of Urine	2
Average Operating time	40 mins
Average Hospital stay	4 days
Average Glycine irrigant volume	15 litres

urinary retention due to prostatic disease were entered in the study. The prostatic volume was estimated by digital rectal exam and transrectal ultrasonography to be less than 40cc for all patients.

Ages ranged from 52yrs - 79yrs (mean age 65). 7 patients (26%) had locally advanced and metastatic cancer of the prostate. 20 (74%) had clinically and histologically proven benign prostatic hypertrophy. No patients suffered from clinically evident TURP syndrome. 2 patients (7%) had immediate post-operative retention requiring resection of residual prostate gland. All patients were discharged by the 4th post-operative day and there were no blood transfusion requirements. Glycine irrigant volume used averaged 15 litres with average operating time of 40 mins.

Discussion

For many years now, transurethral resection of prostate (TURP) has been established as the gold standard for relieving infravesical prostatic obstruction. Although the incidence of intra-operative and early post-operative complications has dropped to 13.3% in the 1990s,¹ it is still significant. With new options for minimally invasive procedures and medical therapies, there has been a strong desire to reduce complications while maintaining the same efficacy. This desire to extend the use of minimally invasive techniques for dealing with prostatic obstruction is reflected in the recent preliminary report by Okeke of day case TURP in carefully selected cases done under regional anaesthesia without post-operative catheterisation with no reported adverse events⁸.

Transurethral Electrovaporisation of Prostate

(TEVP) is one of the most recent of these minimally invasive techniques developed to deal efficaciously with prostatic obstruction while reducing the complication rate. TEVP requires extra energy of up to 250W to vaporise prostatic tissue and a recent study by Patel, Fuchs and Ryan has demonstrated that such energy levels do not damage periprostatic structures². Although the optimum vaporising effect is obtained with the specially designed grooved electrode, Juma has reported that comparable results to TURP can be obtained using the regular 3mm roller ball electrode³. TEVP has been shown to be simple to perform for the Urologist already trained in TURP⁴ producing good early results sustained after one-year follow-up⁵.

In comparison to Laser ablation, TEVP has lower post-operative morbidity⁶ especially with a shorter catheterisation time and post-operative irritative symptoms. When vaporisation is combined with standard resection, large glands can be ablated with minimal intra-operative bleeding thereby extending the use of vaporisation techniques⁷.

The simplicity, safety and efficacy of TEVP significantly reduces hospital costs by reducing hospital stay. It may eventually replace TURP as the gold standard for relief of prostatic obstruction. These advantages have all been reflected in the results of this small study using a 5mm rollerball electrode for both malignant and benign prostatic obstruction. When relief of obstruction from an enlarged prostate is the objective, transurethral electrovaporisation is a simple and effective way to do this for both benign and malignant prostatic disease as in this study. Vaporisation can be preceded by resection of some chippings for histology especially where this may be important for future management. Obviously, longterm follow-up will be required to see if the benefits are sustained.

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