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SUPRAPUBIC TRANSVESICAL PROSTATECTOMY IN A RURAL KENYAN HOSPITAL

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ABSTRACT

Objective: To evaluate the effectiveness, safety and complications of suprapubic transvesical prostatectomy in a rural Kenyan hospital.

Design: A prospective audit of suprapubic transvesical prostatectomy.

Setting: Africa Inland Church, Kijabe Hospital, Kijabe, Kenya.

Subjects: One hundred and six men with lower urinary tract obstruction, clinically due to benign prostatic hyperplasia, undergoing suprapubic transvesical prostatectomy.

Interventions: Suprapubic prostatectomy.

Main outcome measures: Age, presentation, comorbidity, type of anaesthesia, pathology, bladder irrigation time, Foley time, post-operative stay, complications-mortality, blood transfusion rate, return to theatre for bleeding, incontinence, urine leak, urinary retention.

Results: One hundred and six men entered the study with a mean age of 72.8 years. Seventy eight per cent were in retention and 25% had significant medical problems. Spinal anaesthesia was used in 94%. The mean prostate weight was 70.4g and 11% had carcinoma. The Foley's catheter was removed at a mean of 4.2 days after surgery and the mean post-operative stay was 6.0 days. The 30 day mortality was 0.9%, the blood transfusion rate was 4.7%, the return to theatre for bleeding rate was 0.9% and 4.7% of patients developed a urine leak.

Conclusion: Suprapubic transvesical prostatectomy, performed under spinal anaesthetic, by general surgeons in rural Kenya, is a safe and effective way of managing benign prostatic hyperplasia and its complications.

INTRODUCTION

Urinary retention is a common problem presenting to rural hospitals throughout Africa. Kijabe is no different from such hospitals and approximately 250 operations are done per year for urinary retention and severe lower urinary tract obstructive symptoms. Kijabe shares problems common to rural hospitals in Africa such as lack of resources and difficulties with access for patients to surgery and anaesthesia. Resectoscopes, and those experienced in their use, are rarely available outside major metropolitan areas and so open prostatectomy is the standard of care in rural Africa. This study was, therefore, undertaken to prospectively follow a significant number of patients with urinary retention or severe lower urinary tract obstructive symptoms treated with open prostatectomy and a simple management protocol. This will form baseline data to improve upon.

MATERIALS AND METHODS

All patients presenting with a clinical diagnosis of benign prostatic hyperplasia with lower urinary tract obstructive symptoms, suitable for a suprapubic prostatectomy (SPP), between 9th June 1999 and 11th August 2000, were entered onto a prospective data-base.

Data collected included age, mode of presentation, duration of post-operative bladder irrigation, duration of time post-operatively in hospital and time of Foley removal, complications, pathology, and prostate weight.

The technique of SPP was as follows: the patients were anaesthetised with a spinal anaesthetic and laid supine. Intravenous gentamicin was administered as a prophylactic antibiotic. The bladder was distended with dilute antiseptic. A low midline incision was used for access. The distended bladder was found and incised vertically between stay sutures. The adenoma was then shelled out bluntly and two 2-0 chromic sutures were used to control bleeding at the bladder neck. A removable bladder neck suture of 0-prolene was used selectively. The bladder was then closed in two layers with 2-0 chromic and the fascia was closed with 0 or 1 maxon/PDS/vicryl depending upon availability. The skin was closed with a subcuticular suture without drainage. A 24 F three-way urethral catheter was used for continuous bladder irrigation (CBI) with normal saline. Barring complications the patient was fed after 24 hours and CBI was continued for 48 hours. After 72 hours, the Foley's catheter was removed and the patient was discharged the next morning.

Results were expressed as mean \pm standard error of the mean (sem).

RESULTS

One hundred and six consecutive patients were studied. Modes of presentation can be seen in Table 1. This was an elderly population and 25% had significant medical problems including hypertension, diabetes, severe anaemia, AIDS and cerebrovascular disease. Most patients presented with urinary retention either acutely or were referred from another health-care facility with a Foley catheter *in situ*.

Table 1

Presentation - mean \pm sem

No.	Age	Retention	Serious medical problems
106	72.8 \pm 0.8	78%	25%

Table 2

Operative results-mean \pm sem

Spinal anaesthesia	Mean prostate Wt-grams	Pathology-adenocarcinoma	Mean CBI duration-days	Forley duration days	Mean postoperative stay-days
94%	70.4 \pm 4.5	11%	1.9 \pm 0.1	4.2 \pm 0.1	6.0 \pm 0.3

Table 3

Complications

Mortality	Blood transfusion rate	Wound infection rate	Incontinence rate	Urine leak rate	Retention after Foley removal
0.9%	4.7%	4.7%	9.4%	4.7%	7.4%

Table 2 presents operative results. Almost all prostatectomies were performed under spinal anaesthesia. The majority of the prostates were benign. The mean postoperative stay was 6.0 days. A bladder neck suture was used in only three patients

Complications are shown in Table 3. Only one patient had to be returned to the operating theatre for control of bleeding. The most frequent complication was retention of urine after Foley removal. The catheter was reinserted and removed at a subsequent clinic visit. In all cases the patient was able to void at the clinic visit. One patient died within 30 days of surgery giving a postoperative mortality rate of 0.9%. This was a 78-year old man with hypertension. He made an uncomplicated initial recovery but had a probable myocardial infarction in the first few days postoperatively. He appeared to make a reasonable recovery from this but seemed to have lost his will to live and died 15 days after surgery. One other patient with AIDS, died outside the study period from urosepsis associated with a late bladder suture-line breakdown.

The incontinence rate was difficult to quantify accurately as only 76 out of 106 patients returned to clinic for review. Of these patients, seven claimed to be incontinent on direct questioning. Six of these said that the incontinence was minor. Only one of the seven claimed that the incontinence interfered with his life. Of the 30 patients who failed to return to the clinic, three complained of incontinence prior to discharge from hospital and one of these was probably associated with a urinary tract infection.

The incontinence had no relationship to age, pathology/

or mode of presentation. The incontinence cases were also spread throughout the series suggesting that this was not a learning curve phenomenon.

DISCUSSION

In resource rich environments the current debate is between transurethral prostatectomy (TURP), or one of its variants and medical management(1,2). This is obviously not appropriate in an environment where 78% of men present with retention, the mean weight of the resected adenoma is over 70 grams and the resectoscope is not readily available. Open prostatectomy performs well compared with western studies of TURP. TURP is associated with a 0.4-8.6% transfusion rate and a TURP syndrome rate of 0.8-6.7%(3,4). By contrast suprapubic prostatectomy (SPP) in this study was associated with a transfusion rate of 4.7% and the TURP syndromes, not a feature of this operation.

The mortality rate of SPP at Kijabe was 0.9%. This is higher than Western TURP figures, which quote a mortality rate of less than 0.25%, but was similar to or better than contemporary studies of SPP from Africa and Asia(2-7). Given the high rate of comorbidity and the minimal facilities at our disposal for intensive care and invasive monitoring we felt that this mortality rate was acceptable but can possibly be improved with careful selection of patients for surgery.

The incontinence rate appears to be unable to be improved with this operation and will remain the Achilles

heel of the SPP operation. It does not seem to be associated with age or presentation. The true rate of incontinence is difficult to assess as 28% of patients in this series failed to return for follow up. However, the incontinence was minor in the majority and may improve with time as pelvic floor exercises are used.

The anaesthetic used was spinal in 94% of cases. The majority of the remaining six per cent of cases were converted to a general anaesthetic due to failure of the spinal to provide adequate anaesthesia of the operative area. With a perioperative mortality rate of 0.9%, it appears that spinal anaesthesia is a safe and effective way to anaesthetise patients for SPP. In addition, it is a simple technique to learn and administer and thus is appropriate for rural hospitals.

The transfusion rate in this study was similar to that in other comparable studies of SPP in the developing world(5-7). Several of these studies have used a bladder neck suture to prevent bleeding. We believe that a selective approach to the use of the bladder neck suture is appropriate. We use it when the bladder neck is very loose and there is difficulty with haemostasis. Our 4.7% transfusion rate and 0.9% incidence rate of clot retention, requiring return to the operating room for control of bleeding, would support this practice.

SPP is easily taught and can give consistent results.

We have taught this procedure to trainees and visiting surgeons with consistent success over many years at Kijabe. The alternatives of perineal prostatectomy and retropubic prostatectomy have their advocates, but there would be few who would believe that these techniques are easily taught in the rural African hospital. This prospective audit has shown that SPP under spinal anaesthetic is a safe and effective procedure and is suitable for rural hospitals with minimal resources.

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