



### Prostatic Fossa Gauze-Packing in the Prevention of Blood Clot Obstruction of the Bladder after Transvesical Prostatectomy

*Fossa prostate gaze-Emballage dans la prévention de la Blood Clot Obstruction de la vessie après prostatectomie transvésical*

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#### ABSTRACT

**BACKGROUND:** Clot obstruction often complicates transvesical prostatectomy. Any measure that prevents this will be a great relief to both surgeon and patient.

**OBJECTIVE:** To demonstrate that packing the prostatic fossa with roller gauze bandage after transvesical prostatectomy can prevent post-operative clot blockage of bladder drainage.

**METHODS:** Charts of all patients who had transvesical prostatectomy at Jasman Hospital Udo by me from 1988 to 1997 were sorted into two groups, Group A, not packed and Group B, packed. Information sought included patient's age, type of prostatectomy performed, whether the prostatic fossa was packed or not, average duration of catheter drainage, and complications.

**RESULTS:** There were 68 patients who had no fossa packing and 72 in Group B with fossa packing. The age range of the two groups A and B were respective 45–85 year-old and 50–83 years. In both groups the highest number of patients was in the 60 to 79 age bracket (48 in group A, 70%, and 56 in group B (78%). Bladder blockage occurred in 32 (47%) patients without packing and none (0%) in group B with packing. Average duration of bladder drainage was 14 days in each group. There was no persisting vesico-cutaneous fistula. Temporary urinary incontinence occurred in three (3%) patients who had no packing and in five (7%) with packing.

**CONCLUSION:** Gauze-packing of the prostatic fossa during transvesical prostatectomy can prevent bladder obstruction from clot retention without undue complications. *WAJM* 2010; 29(3): 184–186.

**Keywords:** Prostate, Hyperplasia, Transvesical, Excessive bleeding, Prostatic gauze-packing, Bladder obstruction.

#### RÉSUMÉ

**CONTEXTE:** obstruction Clot complique souvent prostatectomie transvésical. Toute mesure qui empêche cette sera un grand soulagement pour le chirurgien et le patient.

**OBJECTIF:** Pour démontrer que l'emballage de la fosse de la prostate avec rouleaux de bandage de gaze après prostatectomie transvésical peut empêcher le blocage du caillot post-opératoire de drainage de la vessie.

**METHODES:** Les dossiers de tous les patients qui avaient transvésical prostatectomie à Jasman Hôpital Udo par moi de 1988 à 1997 ont été classés en deux groupes, le groupe A, non emballés et Groupe B, emballées. Informations recherchées comprenaient l'âge du patient, type de prostatectomie effectuée, si la fosse de la prostate ont été conditionnés ou non, la durée moyenne de drainage par cathéter, et complications.

**RÉSULTATS:** Il y avait 68 patients qui n'avaient pas de fosse d'emballage et 72 dans le groupe B avec l'emballage de la fosse. La fourchette d'âge des deux groupes A et B ont été respectivement de 45 et 85 années, âgé de 50–83 ans. Dans les deux groupes le plus grand nombre de patients a été de le support de 60 to 79 ans (48 dans le groupe A, 70%, et 56 dans le groupe B (78%). blocage de la vessie s'est produite dans 32 (47%) patients sans emballage et aucune (0%) dans le groupe B avec l'emballage. La durée moyenne du drainage de la vessie était de 14 jours dans chaque groupe. Il n'y avait pas de fistule vésico-cutanée persistante. Temporaire incontinence urinaire sont survenus dans trois (3%) patients qui n'avaient pas l'emballage et dans cinq (7%) avec l'emballage.

**CONCLUSION:** Gaze-emballage de la fosse de la prostate au cours prostatectomie transvésical peut empêcher l'obstruction de la vessie de la rétention de caillots sans complications inutiles. *WAJM* 2010; 29 (3): 184–187.

**Mots-clés:** prostate, l'hyperplasie, transvésical, excessive saignements, de la prostate gaze emballage, l'obstruction de la vessie.

## INTRODUCTION

Prostatectomy of all types is associated with considerable haemorrhage during and after the operation. The general surgeon working in a rural setting and who has to do this operation where personnel and other facilities are limited is faced with the problem of reducing such bleeding in a cheap and effective manner. The objective is to prevent bladder obstruction due to clot retention and obviate the need to wake up at night to evacuate the bladder, the nightmare of the house surgeon. Hitherto, continuous bladder irrigation has been employed to prevent such bladder blockage, but is time consuming and expensive in fluids used for the irrigation. Packing of the prostatic fossa after prostatectomy is not a new concept and the author has used it extensively in his General surgical practice. This paper goes on to demonstrate the use of gauze bandage pack of the prostatic fossa and its effectiveness to prevent bladder obstruction after open prostatectomy.

## SUBJECTS, MATERIALS, AND METHOD

This study was a chart review of patients who had had prostatectomy upon by me being the sole proprietor. The introduction of gauze-packing of the prostatic fossa was an on- the- table emergency measure to check heavy bleeding. It was considered ethical by me to use it to save life and became a routine thereafter because it worked. Subsequent patients were duly educated preoperatively on the procedure and informed consent was always obtained. The conditions for inclusion in the review were that each patient must have had transvesical prostatectomy and that the prostatic fossa must have been packed with roller gauze at operation or not packed. Excluded were patients who had had retropubic prostatectomy.

The patients in this study were divided into two groups—A, consisting of 68 patients, and group B, consisting of 72 patients. All of them had transvesical prostatectomy performed by the author. Their case files were retrieved from the records.

Group A consisted of patients who were operated upon before the initiation

of prostatic fossa gauze- packing. Group B consisted of patients whose prostatic fossae were packed with gauze after enucleation.

The same surgical technique was employed for both groups. Access was through a Phannenstiell incision under spinal anaesthesia. Each patient was transfused with at least two units of whole blood. The bladder was incised vertically and the urine drained. By blunt finger dissection the enlarged lobes were enucleated. No attempt was made to control individual bleeders as the bleeding consisted essentially of oozing from vessels in the prostatic fossa. A Foley's catheter size 18 was introduced into the bladder via the external urethral meatus and placed high up in the bladder. It was not used to exert pressure on the prostatic wall.

In those patients whose prostatic fossae were packed, a whole length of gauze bandage roll of 15cm width was firmly stuffed into the prostatic fossa enough to exert a tamponade effect. A suprapubic safety tube of drip set size was introduced into the bladder which was closed in two layers. Both the pack and the tube were brought out through the bladder incision. Next, a drainage tube was inserted into the retropubic space to drain any leaking urine. The abdomen was then closed in layers and both the pack and the safety tube were brought out from the abdominal wound. The pack was removed by pulling on it. No anaesthesia was needed. No bladder irrigation was used.

The gauze pack was removed after 48 hours. The indwelling safety tube in the bladder was removed when the urine had become clear (average of three to four days). The tube in the retropubic space was removed when it was no longer functional. The Foley's catheter was removed when leakage of urine from the wound had ceased. This was on the average of 14 to 21 days. All groups were observed to see if complete bladder blockage necessitating intervention occurred, as well as any complications.

## RESULTS

In group A where the prostatic fossae were not packed, 32 patients (47%) had blockage to bladder drainage

because both the Foley's catheter and the safety tube in the bladder were blocked by clot and intervention was needed to drain the bladder.

In group B where the fossae were packed, 10 patients (14%) had the Foley's catheter blocked by clot but there was no bladder blockage or distention because the safety tube which was draining unclotted blood and urine remained open. The surgeon was not woken up at night. At removal, the gauze pack looked like a mere ribbon.

In both groups it needed between 14 and 21 days of continuous bladder drainage for leakage of urine from the wound to stop, a time needed for the holes in the bladder to close. No prolongation of this period could be attributed to the pack alone. In both groups there was temporary urinary incontinence in some patients, five (7%) in group A and three (4%) in group B, which stopped spontaneously. There was no permanent fistula into the bladder. The results are captured in Tables 1 and 2.

**Table 1: Distribution of Prostatectomy Patients by Age and Fossa-packing Status**

| Age Range in Years | A (Packing Status) B (Packed fossae) |           |
|--------------------|--------------------------------------|-----------|
|                    | 40–49                                | 1         |
| 50 – 59            | 10                                   | 12        |
| 60 – 69            | 21                                   | 32        |
| 70 – 79            | 27                                   | 24        |
| 80 – 89            | 9                                    | 3         |
| <b>Total</b>       | <b>68</b>                            | <b>72</b> |

**Table 2: Comparison of Packing and non-Packing of the Prostatic fossa in Prostatectomy**

|                              | Group A (Unpacked) | Group B (Packed) |
|------------------------------|--------------------|------------------|
| <b>Outcome</b>               |                    |                  |
| Number of patients           | 68                 | 72               |
| Bladder blocked              | 32(47%)            | 0(0)             |
| Pints of blood transfused    | 3                  | 2–3              |
| Average duration (days)      | 14                 | 14               |
| Temporary urine incontinence | 3 patients         | 5 patients       |
| Permanent bladder fistula    | Nil                | Nil              |

## DISCUSSION

Significant prostatic hyperplasia results in increased blood flow and the resulting veins at the base of the bladder cause excessive bleeding during prostatectomy.<sup>1</sup> All types of prostatectomy carry this risk and such bleeding can lead to clot retention and bladder obstruction in the immediate post-operative period and thereafter.<sup>2</sup>

Open prostatectomy continues to be widely used in Nigeria in spite of transurethral resection being the gold standard for prostatectomy. Transvesical prostatectomy is convenient for the general surgeon who often has to deal with patients with urinary retention due to benign prostatic hyperplasia, and is particularly indicated in a patient with a very large prostate, stones, or diverticula.<sup>3</sup>

Various methods have been used to decrease bleeding during prostatectomy of all types and so reduce the risk of clot retention and bladder blockage. As the prostatic fossa bleeds after enucleation of the gland, most surgeons apply continuous bladder irrigation with saline via a two or three-way Foley's catheter after closure of the bladder. This is very demanding on both the surgeon and the hospital staff. For the patient, it means increased costs from purchase of irrigation fluids. Here comes in the availability and usefulness of packing the prostatic fossa and this is achieved with roller gauze bandage of the 15cm width type or other size. It also obviates the danger of too much absorption of sodium from the irrigation fluid. The mechanism of action of the gauze pack seems to be as follows: The gauze pack in the prostatic fossa acts as tamponade to the oozing vessels. Again, blood clot is trapped in the mesh of the gauze which thus acts as a filter allowing the non-clotting filtrate, now, deficient in clotting elements, to escape freely via the safety draining tube in the bladder. Even if the Foley's catheter gets blocked, the bladder

is not obstructed as the safety tube keeps draining. Removing the pack is no problem; the urine will get bloody but clears soon without causing any trouble.

Bapat *et al*<sup>4</sup> have compared classical Freyer's transvesical prostatectomy in twenty-five patients with the modified Freyer's in which the prostatic fossa was packed with gauze in fifty patients and twenty-five undergoing Millin's prostatectomy. They found that blood loss was less in the packed group than in the classical non-packed and the Millin's group and that cases of bladder obstruction were absent in the packed group but reoperation occurred in some, in the two other groups.

Other people, however, have used more sophisticated methods because they were available to them, in various types of prostatectomy to achieve haemostasis and prevent clot obstruction. For instance, Khurana *et al*<sup>5</sup> have used Holmium laser to enucleate large prostates with minimal bleeding and no clot retention. This is without prejudice to the status of transurethral resection in prostatectomy. Singer *et al*<sup>6</sup> have used suture ligation of the dorsal vein complex prior to dividing it during radical prostatectomy in twenty patients with resultant reduction in blood loss. Also, bilateral internal iliac ligation has been shown by Shah *et al*<sup>7</sup> to result in reduced blood loss during pelvic operations, the most common indication being prostatectomy. Kaplan and Davies<sup>8</sup> have gone as far as delaying intraoperative hydration in order to reduce bleeding and prevent clot retention and bladder obstruction. But the technique of gauze packing as applied in this paper is of equivalent value in transvesical prostatectomy.

## Conclusion

It is concluded that packing the prostatic fossa with roller gauze is effective in preventing bladder obstruction

due to blood clot after transvesical prostatectomy.

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