Giant Prostate with Persistent Haematuria Presenting as an Emergency: A Case Report Highlighting Management Challenges in a Resource Limited-Setting

Joseph Amauzo Abiahu[1,2], Dubem Ejikeme Orakwe[2], Onyekachi Amos Onu[2], Timothy Uzoma Mbaeri[1,2] and Emmanuel Ahuizechukwu Obiesie[1,2]

[1]Urology Division, Department of Surgery, Faculty of Medicine, College of Health Sciences, Nnamdi Azikiwe University Awka, Nnewi Campus, Anambra State, Nigeria. [2]Department of Surgery, Nnamdi Azikiwe University Teaching Hospital, Nnewi, Anambra State, Nigeria.

ABSTRACT

In benign prostatic hyperplasia, prostate size has not been correlated with presence or severity of symptoms. However, giant prostate weighing more than 200g is usually associated with symptoms especially significant haematuria. This can pose management challenge in emergency situation where resources are limited. We report a case of 500g prostate enlargement presenting as an emergency with recalcitrant haematuria. We highlighted the management challenges in a resource-limited setting and also reviewed relevant literature.

Keywords: Intractable haematuria; Emergency prostatectomy; Giant prostate**.**

INTRODUCTION

Benign prostatic hyperplasia (BPH) is the non-malignant growth of the prostate gland commonly affecting elderly men.[1, 2] It is one of the common causes of lower urinary tract symptoms (LUTS) in this age group.[1, 2] Giant prostate (GP) has been defined variedly as prostate gland weighing more than 200g [3] or 500g.[4] The actual cut off is still controversial but argument is more in support of 200g.

Though the prostate size has not been correlated with presence or severity of symptoms,[5] huge benign prostatic hyperplasia is usually associated with symptoms especially significant haematuria.[6] Increased risk of bleeding has been thought to be due to hypervascularity of the gland, mechanical stretch of prostatic vessels, and overexpression of vascular endothelial growth factors with increased microvascular density.[7]

Treatment of patient with giant prostate is usually guided by the pattern of presentation. In significant haematuria with haemodynamic instability, urgent resuscitation with blood transfusion is useful.[6] Urgent surgical intervention may also be indicated when haematuria persists despite conservative and pharmacological measures after ruling out a coagulopathy. Endoscopic resection or enucleation of the prostate is currently the accepted goal standards for surgical treatment of benign prostatic hyperplasia.[8]

OPEN ACCESS

***Correspondence:**
Dr Joseph Amauzo Abiahu
Urology Division, Department of Surgery, Faculty of Medicine, College of Health Sciences, Nnamdi Azikiwe University Awka, Nnewi Campus, Anambra State, Nigeria..
***Tel:** 08062318058*
Email:
ja.abiahu@unizik.edu.ng.

Specialty Section:
This article was submitted to Clinical, a section of TJMR

***Received:** 1 April, 2022*
***Accepted:** 17 July, 2023*
***Published:** June-July 2023*

Citation:
JA Abiahu, DE Orakwe, OA Onu, TU Mbaeri and EA Obiesie. Giant Prostate with Persistent Haematuria Presenting as an Emergency: A Case Report Highlighting Management Challenges in a Resource Limited-Setting. Trop J Med Res. 2023:22(1); 187-191.
DOI: 10.5281/zenodo.8370358

Access Code

http://tjmr.org.ng

However, prostate size may affect decision making. Additionally, endoscopic options may be inappropriate in the emergency setting for a bleeding giant prostate due to combined factors of impaired visibility and an abnormally elongated prostatic urethra and huge median lobe limiting the reach of the scope. In a resource-poor setting, endoscopic options may be frankly unavailable or the skills for such approaches may be lacking. Open surgical approaches, though associated with challenges, have been found useful in this setting among patients with giant prostatic hyperplasia without an underlying comorbidity.[6] We report the successful emergency management of a bleeding giant prostate by open prostatectomy highlighting perioperative challenges.

CASE REPORT

The patient was a 74-year old man referred from a peripheral hospital with LUTS of 11 year duration and recurrent haematuria of 2 month duration. He had acute urinary retention that was successfully relieved by urethral catheterization. There was associated dizziness but no fainting spells. No history of weight loss or anorexia. He had been to several hospitals where surgery was offered but he declined. With the onset of haematuria, he visited 2 different hospitals where he was transfused with a total of 11 units of blood before referral to our facility.

Clinical examination revealed a conscious patient, pale with a respiratory rate of 28 cycles/minute, pulse rate of 114bpm, blood pressure of 90/40mmHg and oxygen saturation of 94%. Abdomen was full and moved with respiration, with a positive visible and palpable expansile cough impulse in the left inguinal region. There was suprapubic mass 18cm above pubic symphysis with a catheter balloon easily palpable through the suprapubic region. Liver and spleen were not palpable and kidneys not ballotable. Digital rectal examination revealed a markedly enlarged prostate with grossly benign features. Patient had a functioning 3-way, all-silicone urethral catheter draining haematuric urine. A diagnosis of bleeding BPH with left inguinal hernia was made.

Urgent haemoglobin concentration was 7g/dl. Serum electrolytes, urea and creatinine were normal. Abdominopelvic ultrasound scan showed an enlarged prostate with a lobulated outline and areas of cystic changes. It measured 6.2cm X 10.4cm X 12.2cm, with a volume of 413cm^3 and intravesical of measuring 4.2cm. There were also urinary bladder thickening and bilateral minor calyceal dilatation. Abdominopelvic Computed Tomography Scan (CT Scan) showed similar findings.

Patient was transfused with 2 units of blood. Bladder washout was done and irrigation commenced with the use of normal saline. He was worked up for urgent surgery. A written consent was obtained for surgery, clinical pictures and clinical research. He had open transvesical prostatectomy with left inguinal herniorraphy via Pfannenstiel incision on 3rd day of admission. Intraoperative findings included trabeculated urinary bladder, a huge hypervascular prostate gland that weighed 500g (figure 1) with intravesical protrusion of 10cm (figure 2), and empty left indirect hernia sac with weak posterior inguinal wall

It was difficult to access the posterior surface of the intravesical prostate for a limiting incision. Thus, the incision was made near the fundus of the median lobe posteriorly. Enucleation and removal of the prostate was achieved by breaking the anterior commissure, piecemeal removal of lateral lobes and median lobe without undue traction at the apex of gland. Large prostatic fossa was packed for 5mins with ribbon gauze. Thereafter, residual hanging tissues were excised under vision. Figure-of-eight haemostatic sutures were applied at 5 and 7 O'clock positions and continuous locking suture also applied round the neobladder neck using vicryl 2 suture. A 3-way size 20 FR all-silicon urethral catheter was passed and its balloon inflated in the prostatic fossa with 40mls of water, while 2-way 22FR suprapubic catheter was inserted through a separate stab incision. A 2-layer water tight closure of anterior bladder wall was done. Urinary bladder washout was done and irrigation commenced on table with

the use normal saline. Bassini repair of left inguinal hernia was done. Graded deflation of prostatic fossa catheter balloon was done over 24hours. Attempt to push the catheter balloon back into the bladder thereafter was difficult with associated non-functioning of the irrigation channel and clot retention. Transrectal ultrasound scan localized the catheter balloon in the prostatic fossa (figure 3). This necessitated removal and successful repass of the catheter aided with a catheter introducer. Intravesical placement of the catheter balloon was confirmed with a transabdominal ultrasound scan (figure 4). Patient was transfused with 3 units of blood in the intraoperative and immediate postoperative periods. He also received 5mg Solifenacin (a competitive cholinergic M_3 receptor antagonist) daily for 10days, antibiotics and analgesics. Suprapubic catheter was removed on the 3rd day postoperation while wound sutures and urethral catheter were removed on day 11 post-surgery. There was no urinary incontinence or residual LUTS. Histological analysis of surgical specimen noted a huge prostate weighing 500g with predominantly benign features and a focus of invasive adenocarcinoma (Gleason 3+3; score 6, ISUP 1). Clinic visit at 1 week, 1 month and 3 months post-surgery were uneventful. He was counseled on the treatment options and opted for active surveillance as a mode of treatment.

DISCUSSION

The prostate size of 500g in our index case agrees with the definition of GP in the literature.[3,4] The pattern of presentation in this case is similar with a reported case of GP.[6] Apart from LUTS, haematuria was recurrent and significant requiring serial blood transfusion. Intravesical protrusion in patients with GP may be significant enough to be palpable suprapubically, pushing the urethral catheter balloon anteriorly to make it easily palpable per abdomen as noted in our case. The intravesical protrusion will also increase the risk of haematuria from trauma to the prostate gland from procedures like suprapubic needle tap and suprapubic cystostomy done to relieve urinary retention.

We did not opt for endoscopic approach in the surgical management of index case due to anticipated endoscopic challenges of an abnormally elongated prostatic urethra and huge median lobe limiting reach of the scope and non-functioning machine at time of presentation. At the age of 74 years, he was clinically fit, had no associated co-morbidity, and had huge bleeding prostate and an inguinal hernia. Thus, we chose open transvesical prostatectomy via Pfannenstiel incision to also have access for herniorraphy at same time. This agrees with opinion of other reporters.[6, 9]

A critical challenge in management of patients with GP is bleeding which can complicate peri-operative period.[10, 11] Preoperative blood transfusion was done in our index case in preparation for urgent surgery as noted in a report.[6]

Intraoperatively, a posterior bladder neck limiting incision on the prostate to avoid mucosal tear into the ureteric orifices had been described in transvesical prostatectomy.[12] This may be difficult in GP with distorted anatomy as experienced in this reported case. Therefore, similar incision made posteriorly on the prostate higher than ideal may suffice, while hanging mucosal flaps at risk of bladder neck obstruction are excised under vision after successful enucleation and removal of the prostate. This principle was applied in the index case in this study. Application of gauze pack to the prostatic bed for 5mins, [12] haemostatic sutures at 5 and 7 O'clock positions of bladder neck, [12] continuous locking sutures around the bladder neck, [13] and snuggly inflating the urethral catheter balloon in the prostatic fossa were measures used in index case to reduce postoperative bleeding.

Adjustment of catheter balloon from the prostatic fossa to the urinary bladder was another challenge encountered in the index case. This manoeuvre is necessary to allow contraction of the prostatic fossa with healing after bleeding has reduced. This difficulty is inevitable when the catheter tip falls into the large prostatic fossa, thus unable to negotiate the neobladder neck on attempt to advance the catheter into the bladder. This will impair free irrigation with

risk of clot retention as noted in this reported case. Repassing of the urethral catheter with the aid of a catheter introducer was useful in index case. This must be done gently with skill to negotiate the high neobladder neck. About 20-30mls of water may be needed to retain the catheter in the bladder with wide neck post enucleation of prostate gland, thus increasing the risk of bladder spasms which is controlled with use of anticholinergics as observed in this case.

Associated hernia posed extra challenge in management of this case with GP. The choice of Pfannenstiel incision gave access to repair of the hernia at same time without undue prolongation of surgery time.

Histology report of this index case showed focus of low grade adenocarcinoma of prostate despite clinical and radiological features of benign disease. This is not surprising considering the big size of the prostate which may obscure clinical suspicion of cancer. However, the histology depicts a low risk disease and active surveillance suffices considering age of the patient.

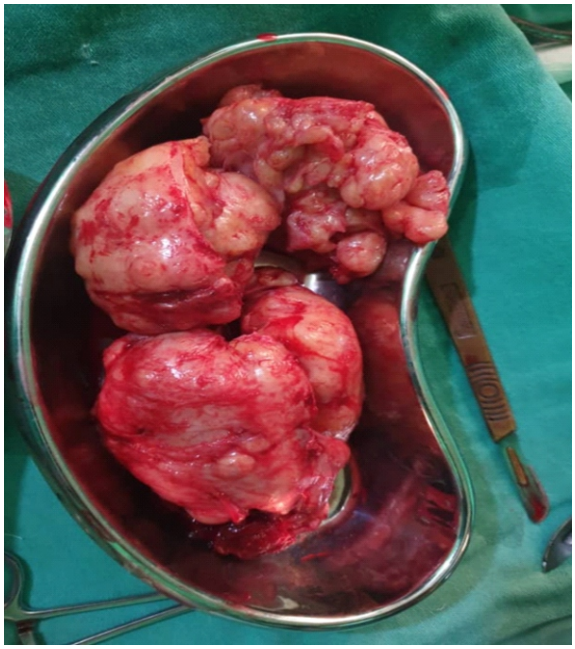

Figure 1: Enucleated giant prostate gland.

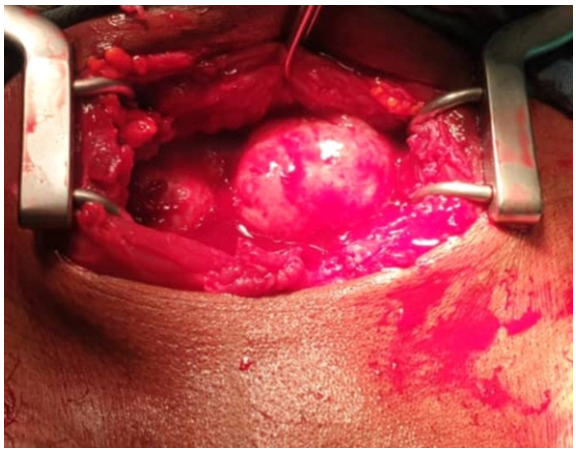

Figure 2: Huge intravesical protrusion of median lobe of the prostate.

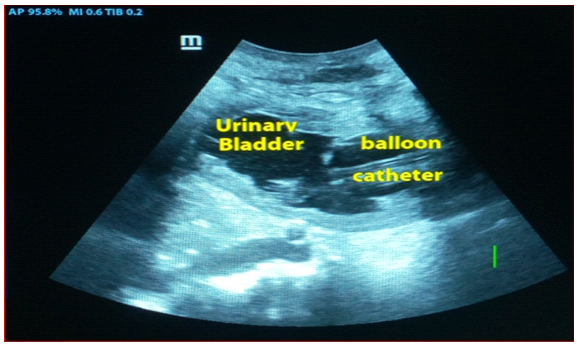

Figure 3: Transrectal ultrasound localization of catheter balloon in the prostatic fossa.

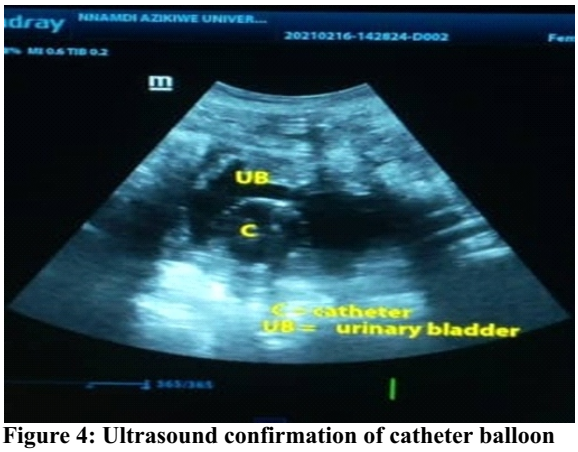

Figure 4: Ultrasound confirmation of catheter balloon within the urinary bladder.

CONCLUSION

Giant prostate is a peculiar urological condition usually characterized with LUTS and recurrent haematuria. Open prostatectomy is an acceptable

modality of treatment especially in the emergency situation with significant haematuria. However, it is associated with challenges which can be averted with careful application of useful surgical principles.

Acknowledgement: Not applicable

Authors' contribution: JAA and DEO conceptualized and designed the study, JAA and DEO helped in implementation of the project and revision of manuscript, JAA, OAO, TUM and EAO helped in writing and revision of manuscript and all read and approved the final manuscript and agreed to be accountable for all aspects of the work.

Data availability: The data used to support the findings in this study are available from the corresponding author upon reasonable request.

Funding: No funding sources

Conflict of interest: None declared.

Ethical approval: Not applicable.

Consent for publication: Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Ethical approval and consent to participate: Not applicable.

REFERENCES

1. Chapple CR. Lower urinary tract symptoms suggestive of benign prostatic obstruction--Triumph: design and implementation. Eur Urol 2001; 39 (3): 31-6.
2. Wei JT, Calhoun E, Jacobsen SJ. Urologic diseases in America project: benign prostatic hyperplasia. J Urol 2005; 173:1256-61.
3. Kawamura S, Takata K, Yoshida I, Matsui S. A case of giant prostatic hypertrophy. Hinyokika Kiyo 1984; 30: 1861-1866.
4. Fishman JR, Merrill DC. A case of giant prostatic hyperplasia. *Urology* 1993; 42 (3): 336-337.
5. McVary KT, Roehrborn CG, Avins AL, Barry MJ, Bruskewitz RC, Donnell RF, *et al*. Update on AUA guideline on the management of benign prostatic hyperplasia. J Urol 2011; 185: 1793-803.
6. Ojewola RW, Tijani KH, Fatuga AL, Onyeze CI, Okeke CJ. Management of a giant prostatic enlargement: Case report and review of the literature. Niger Postgrad Med J 2020; 27: 242-7.
7. Häggström S, Tørring N, Møller K, Jensen E, Lund L, Nielsen JE, *et al*. Effects of finasteride on vascular endothelial growth factor. Scand J Urol Nephrol 2002; 36: 182-7.
8. Young MJ, Elmussareh M, Morrison T, Wilson JR. The changing practice of transurethral resection of the prostate. Ann R CollSurgEngl 2018; 100 (4): 326-329.
9. Appiah AA, Amoah G, Azorliade R, Gyasi-Sarpong CK, Aboah K, Arthur D, *et al*. Case Report: Giant Benign Prostatic Hyperplasia in a Ghanaian. J Med Biomed Sci. 2014; 3: 14-7.
10. Wang L, Davis P, McMillan K. A case of giant prostatic hyperplasia. Asian Journal of Urology 2016; 3: 53-55.
11. Bhatia S, Kava B, Pereira K, Kably I, Harward S, Narayanan G. Prostate artery embolization for giant prostatic hyperplasia. J Vasc Interv Radiol 2015; 26: 1583-5.
12. Pérez LG, Torres RM, Silva CS, González B, Hernández H. Morbimortality with a packaging technique in prostate surgery. Rev Mex Med Forense 2019; 4 (1): 24-35.
13. Moradi M, Aghelnezhad R, Abdi H, Kaseb K, Rezaee H. Intraprostatic fossa foley balloon tamponade: a novel technique for controlling of life-threatening bleeding during simple prostatectomy. Urol Nephrol Open Access J. 2016; 3(5): 167–169. DOI:10.15406/unoaj.2016.03.00097.