African Journal of Urology (2013) **19**, 26–31

Pan African Urological Surgeons' Association

African Journal of Urology

www.ees.elsevier.com/afju
www.sciencedirect.com

"Close-loop" urethral obstruction: Clinico-radiological features and management consideration in a resource-constraint environment

A.A. Ajape[a,*], A.L. Babata[a], M.M. Kura[b], J.O. Bello[a], I.B. Aremu[c]

[a] *Division of Urology, Department of Surgery, University of Ilorin and University of Ilorin Teaching Hospital, Ilorin, Nigeria*
[b] *Department of Surgery, Federal Medical Centre, Gombe, Nigeria*
[c] *Department of Radiology, University of Ilorin and University of Ilorin Teaching Hospital, Ilorin, Nigeria*

Received 24 July 2012; received in revised form 20 October 2012; accepted 23 October 2012

KEYWORDS
Benign prostate hyperplasia;
Close-loop urethral obstruction;
Retrograde urethrogram;
Urethral stricture disease;
Voiding cysto-urethrogram

Abstract
Objective: To document our observation of "close-loop" obstruction among patients with dual urethral obstruction from BPH and urethral stricture disease.
Materials and Methods: The hospital records of all patients that presented to our centres with evidences of urethral stricture co-existing with BPH were retrospectively reviewed from January 2007 to December 2011. Among other things, the salient features in the contrast radiograph of those with "close-loop" obstruction and their treatment were documented and analysed.
Results: Forty three patients were managed for radiological evidence of urethral stricture and elevated bladder base (dual obstruction). Thirty (69.7%) of these patients had open prostatectomy with easy dilatation of the urethral stricture. Twelve (27.9%) of the patients had urethroplasty for urethral stricture diseases; of these twelve, five patients presented with persistent LUTS ("close loop" obstruction). These five (11.6%) patients were aged between 50 to 80 years; they all had suprapubic cystostomy. In addition to delineating the anatomy of the urethral stricture and elevated bladder base, other salient features on the contrast

* Corresponding author at: P.O. Box 4850, Ilorin, Kwara State, Nigeria.
E-mail addresses: ajsnrkudimoh@yahoo.co.uk, ajsnrkudimoh@gmail.com (A.A. Ajape), alibabata_2000@yahoo.com (A.L. Babata), dr_musty@yahoo.com (M.M. Kura), jabarng@yahoo.com (J.O. Bello), iaremu@gmail.com (I.B. Aremu).

Peer review under responsibility of Pan African Urological Surgeons' Association.

ELSEVIER Production and hosting by Elsevier

http://dx.doi.org/10.1016/j.afju.2012.10.005

radiographies included dilated prostatic urethral, visualization of the seminal vesicles and closed bladder neck on voiding cystogram. The initial treatment was urethroplasty but two each had combination therapy (with alpha adrenergic blocker and 5-alpha reductase inhibitor) and open prostatectomy respectively as further treatment while the last patient had perineal urethrostomy as first-stage redo-urethroplasty.
Conclusion: "Close-loop" urethral obstruction appears to be an entity that needs further evaluation.

Introduction

Bladder outflow obstruction, which included urethral obstruction among others, constitutes a significant proportion of the urological work load in the world; this is even more so in the resource-poor developing nations [1,2].

Urethral obstruction can involve the anterior urethra, posterior urethra or both the anterior and posterior urethra concurrently. The coexistent of both the posterior urethral obstruction (from benign prostate enlargement [BPH]) and anterior urethral obstruction (from urethral stricture disease [USD]) have been reported to occur in 1-15% of patients managed for BPH [3,4]. It has been speculated that it was the slowly developing mild urethral stricture that are often associated with BPH; they are characteristically a short segment, incomplete USD on retrograde urethrogram and are thus amenable to urethral dilatation or internal urethrotomy [3]. To further support the above proposition, a rapidly developing USD was believed to become symptomatic early enough and thus the patient present for treatment before the age of occurrence of BPH [3].

When there is dual obstruction it is usually one of the pathologies that contribute more to the symptoms. However, it is often difficult, clinically and even with the adjunctive aid of urodynamic evaluation, to ascertain which of these two pathologies (BPH or USD) may be responsible for or predominates the cause of the patient's symptoms. As a rule of thumb, bothersome lower urinary tract symptoms (LUTS) in the presence of a clinically and radiologically enlarged prostate gland and an incomplete dilatable urethral stricture can be attributable to the BPH; thus the patient often do well if offered prostatectomy for the BPH and dilatation of the stricture; this treatment suffices at most times (personal observation). The reverse of the above scenario may not always be true; where the presence of tight or complete USD and BPH does not always attribute the LUTS to the USD only, as the enlarged prostate may also be obstructive and thus present challenges in the management of such patients.

When both parts of the urethra are involved with each of them contributing equally or, at least, significantly to the symptoms of the patient this can be referred to as "close-loop" urethral obstruction. We present our experience with significant dual obstructive lesions ("close-loop" urethral obstruction) from both BPH and USD along with the salient radiological features, clinical implications, and management challenges. We equally proposed a management protocol.

Subjects and methods

The hospital records of all patients that presented to our centres with clinico-radiological evidences of USD co-existing with elevated bladder base, suggesting BPH, from January 2007 to December 2011 were retrospectively reviewed. None of our patients who presented with urine retention and who had successful urethral catheterization, which clinically excluded USD, were included in the study or further had contrast studies. However, few patients were occasionally encountered who had 'failed' urethral catheterization but the retrograde urethrogram (RUG) study was normal; these were also excluded from our study.

The age, occupation, mode of presentation, radiological evaluation results, initial management, follow up and subsequent management were documented. The data was analyzed with SPSS version 15 statistical software package.

Results

Forty three patients were managed within the study period for radiological evidence of urethral stricture and elevated bladder base (dual obstruction). All the patients had suprapubic cystostomy; they all had retrograde urethrogram (RUG) except for one of them who had combined RUG and micturating cysto-urethrogram (MCUG). Thirty (69.7%) of these patients had open prostatectomy with easy dilatation of the urethral stricture, no further treatment was required in them thus far (Fig. 1A). One patient, who had gone into acute urinary retention following ophthalmic procedure and relieved by urethral catheterization, had open prostatectomy, about two months later; attempt at urethral catheterization failed at surgery. Urethrogram later showed complete proximal bulbar urethral stricture. He developed iatrogenic rectal injury during urethroplasty.

Twelve (27.9%) of the patients had urethroplasty for varying degree and extents of USD that were considered to be responsible for the LUTS and amenable to surgical options of treatment (Fig. 1B); of these twelve, five patients presented with persistent bothersome LUTS (as quantified by international prostate symptom score [IPSS]) despite satisfactory post operation urethrogram ("close loop" obstruction) and formed the basis of further analysis.

Five (11.6%) patients aged between 50 to 80 years were managed for "close-loop" urethral obstruction in our centres within the study period; the clinico-radiological characteristics were summarized in Tables 1 and 2 (and the corresponding figures). All the patients had suprapubic cystostomy following failed urethral catheterization to relieve urine retention and, in addition, one of them presented with recurrent episodes of epididymo-orchitis. In addition to delineating the anatomy of the urethral stricture and elevated bladder base, other salient features on the contrast radiographies included dilated prostatic urethral with or without post-stenostic urethral dilatation, visualization of the seminal vesicles and closed bladder neck on voiding cystogram (Figs. 2–5). All the five patients had urethroplasty as initial surgical treatment and two each had combination therapy (with alpha adrenergic blocker and 5-alpha reductase inhibitor) and