CASE REPORT

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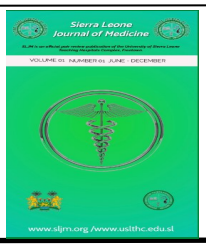

"Close-loop Urethral Stricture:"A Variant of Multiple Urethral Stricture Disease - Its Description, Management and Outcome: A Case Report .

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Ethical Consideration

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ABSTRACT

Urethral stricture disease is an abnormal narrowing and loss of distensibility of the urethra due to spongiofibrosis. It is commoner in young adult males. The management of this condition is diverse with various factors influencing the choice of treatment. However, length of the stricture is a major determinant of the choice of treatment. Two or more stricture sites close together are also treated as long segment stricture. Our aim is to describe a variant of multiple urethral strictures consisting of two short segment complete strictures involving the proximal bulbar urethral and urethral meatus with intervening significant length of normal urethra "close-loop stricture" in a 46-year old man who had traumatic urethral catheterization and was referred to the urology clinic six months following suprapubic tube cystostomy.

Key words: Urethral Stricture, Meatotomy, Close-loop, Traumatic Catheterization, Bouginage

1. INTRODUCTION

Urethral stricture is an abnormal non-distensible narrowing of the urethra due to spongiofibrosis. The term generally applies to anterior urethra because there is no corpus spongiosum at the posterior urethra. Causes of urethral stricture include; infections and trauma, which could be iatrogenic or non -iatrogenic. Congenital and malignant causes are very rare. The diagnosis of urethral stricture is based on history, physical examination, radiographic evaluation which includes retrograde urethrogram (RUG) and occasionally with micturating cysto-urethrogram (MCUG)[1]. Urethral stricture could be complete or partial, short or long segment, single or multiple. Common options of treatment include urethral dilatation, direct visual internal urethrotomy (DVIU) and urethroplasty which could be anastomotic or substitution.

One of the major determinants of the choice of treatment is the length of the stricture. Stricture length of ≤2cm is often considered as short segment, while stricture length of >2cm is considered as long segment stricture[2,3]. Multiple urethral strictures are treated as single long segment stricture because they are close together. However, two short segment strictures involve the proximal bulbar urethral and urethral meatus with considerable length of intervening normal urethra, treatment as single long segment stricture may be considered an overzealous surgery, requiring replacement of the whole anterior urethra. This variant of multiple urethral stricture could be compared to a close-loop obstruction at each end of the anterior urethra; hence, the description of this variant as a 'close -loop urethral stricture'.

Treatment of urethral stricture is still evolving, no single technique is suitable to all conditions and the attending urologist should be familiar with the various methods of managing the condition[4-7]. In gastroenterology, a close-loop obstruction is a mechanical obstruction in which a single segment of bowel is obstructed at two locations without proximal or distal outlets for decompression[8-11]. This terminology has been applied to other hollow viscus without proximal or distal outlets for decompression[12]. Thus, a multiple urethral stricture consisting of two short segment strictures with a considerable length of intervening normal urethra, can be termed as 'close-loop urethral stricture'. Our aim is to present a patient with close-loop stricture and discuss its management.

2. CASE PRESENTATION

Mr A.S a 46-year-old man who was referred to Urology Clinic of Bowen University Teaching Hospital on account of traumatic urethral catheterization six months earlier. He was worked up for exploratory laparotomy on account of adhesive intestinal obstruction. Attempted urethral catheterization resulted in pain and urethral bleeding which necessitated suprapubic tube cystostomy. There was no history of purulent urethritis, pelvic trauma, urethral instrumentation or haematuria. Examination showed a middle-aged man with midline abdominal scar and size 18Fr suprapubic catheter in situ, spigotted. There was an ill-defined induration at the urethral meatus and perineum. Electrolytes, urea and creatinine were within normal limits and urine microscopy, culture and sensitivity showed no growth. An attempted retrograde urethrogram failed due to inability to pass a size 12Fr catheter through the external urethral meatus for contrast introduction. Micturating cyst-ourethrogram showed termination of the contrast at the proximal bulbar urethra suggesting a complete bulbar urethral stricture (Figure .1). Sonourethrogram wasn't done because the facility wasn't available. He was planned for substitution urethroplasty. Epidural anaesthesia was given with patient in lithotomy position. Intra-operatively, attempt at meatotomy was successful with drainage of copious cloudy urine which had accumulated in-between the stricture segments. Attempt at locating the bulbar urethral stricture with antegrade and retrograde bougies led to opening of the stricture site. Subsequently, the planned urethroplasty was abandoned and the patient had urethral dilatation up to 28Fr (Figure.2). A 20Fr latex catheter was placed as a suprapubic catheter, and a 16Fr silicone catheter was used as a urethral stent. The urethral catheter was removed two weeks following the procedure while the spigotted suprapubic catheter was removed one week later. Due to the lack of uroflowmetry machine in our center, we relied primarily on "crude" flow rate, calculated by dividing the urine volume by the voiding time. The value was 18ml/s at two years follow up.

3. DISCUSSION

Urethral stricture disease is more common among the middle age group. Park et al[13] and Santuchi et al[14] described mean ages of 35.5 and 38.0 years respectively. These were slightly lower than our patient's age who was 46 years old. Iatrogenic urethral trauma usually results from improper or prolonged catheterization and accounts for 32% of stricture.[15] This is similar to our patient who had iatrogenic bulbar urethral stricture from traumatic catheterization. The aetiology of the meatal stenosis could not be ascertained in our patient. It was probably due to micro-trauma during catheterization or reaction to latex catheter. Radiographic and endoscopic assessments are the main stay of diagnosis after suggestive history and examination. Baseline investigations such as: electrolytes, urea and creatinine, full blood count and urine microscope, culture and sensitivity (MCS) are important[1]. Contrast radiographic evaluation of the urethra is best achieved by retrograde urethrogram (RUG), and with micturating cysto-urethrogram (MCUG) to determine the length, number and completeness of the stricture[1].

Urethrocystoscopy can determine the presence of stricture but cannot delineate the length. Sonourethrogram is an ultrasound evaluation of the urethra. It shows the density of spongiofibrosis.[16] We relied mainly on MCUG due to the peculiarity of this type of stricture involving the short segment of the proximal bulbar urethral and urethral meatus. The surgical option depends on the length, number, site and completeness of the stricture couples with the surgeon choice. The goal of urethral dilatation is to stretch the scar without producing additional scarring. Our patient had bulbar urethral stricture dilatation using bougie dilator after meatotomy and has been voiding satisfactorily as at 2-year follow-up. In the absence of uroflowmetry machine, crude flow rate done by dividing the urine volume by the voiding time was 18ml/s. In a study by Ajape et al, 30 out of 43 patients with close-loop obstruction had bouginage and prostatectomy with satisfactorily outcomes. The type of our patient's urethral stricture, though multiple (two short segments strictures), does not fit in to multiple urethral strictures in terms of the management. Multiple urethral strictures are managed as long segment stricture because the affected urethral segments are usually close together. Due to the uniqueness of our patient's strictures, with significant length of intervening normal urethra, each stricture site was managed separately with meatotomy of the meatal stricture and urethral dilatation for bulbar urethral stricture. A close-loop obstruction is a mechanical obstruction in which a single segment of bowel is obstructed at two locations[8-11]. This terminology could be applied to other hollow viscus without proximal or distal outlets for decompression[12]. We propose that two short segments strictures involving the proximal bulbar urethra and urethral meatus with intervening significant length of normal urethra ('close-loop urethral stricture') be managed separately instead of being managed as single long segment stricture.

Figure1: MCUG Showing Termination of the Contrast at the Bulbar Urethra

Figure 2: Showing Meatotomy

3.1 Conclusion

We propose that two short segment strictures involving the proximal bulbar urethra and urethral meatus with considerable length of intervening normal urethra 'close-loop urethral stricture' should have each stricture site treated separately.

3.2 Ethical Issues

The informed consent of the patient was obtained, and the confidentiality of the patient and their personal health information was maintained.

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