



MINIMAL INVASIVE MANAGEMENT OF POST TURP BLADDER NECK CONTRACTURE: A REVIEW STUDY

Akash Nepali*, Liao Yixian, Yang Tao, Kundan Kumar Chaudhary and Manithapa Magar

*Department of surgery, Clinical Medical College of Yangtze University, Jingzhou Central Hospital, Jingzhou,
Province-Hubei, P.R.China*

ABSTRACT

Benign prostate hypertrophy occurs in aging male where TURP is considered gold standard treatment, despite considered gold standard it does have complications among which bladder neck contracture is rare but possible complication. Bladder neck contracture leads to bladder outlet obstruction and complicates situation with detrusor failure, renal failure, recurrent UTI, recurrent hematuria and bladder stone. Treating the underline cause is needed to overcome the situation of post TURP bladder neck contracture. Bladder neck contracture can also be treated with minimal invasive treatment and can achieve good success rate with minimal complication. Minimal invasive treatment can be office based or day care surgery.

Keywords: Bladder outlet obstruction, Benign prostate hypertrophy, Benign prostate enlargement, Bladder neck contracture, Transurethral resection of prostate.

INTRODUCTION

Bladder outlet obstruction(BOO) as a result of benign prostatic enlargement(BPE) is often related to lower urinary tract symptoms(LUTS)[1]. Stasis of urine can also backup in the system and leads to complication such as detrusor failure, renal failure, recurrent urinary tract infections, urinary retention, hematuria and bladder stones are associated with untreated BOO[2]. Among above all symptoms of BOO Benign prostatic hypertrophy is one of the cause. BPH is one of the most common disease that affects aging males. The lower urinary tract symptoms caused by BPH related obstruction continue to be a major problem in the medical care of aging males. The incidence of LUTS and BPO is high and increases with age[3]. Remedy following BOO secondary to BPH is often needed and TURP is recommended as the gold standard for the surgical treatment of patients with a prostate size of 30 to 80 ml suffering from lower urinary tract symptoms (LUTS) caused by benign prostatic hyperplasia[4]. Despite considered gold standard surgical treatment of BPH for decades with success rate up to 90%[5]. The most common complications include bleeding, infection, retrograde ejaculation, urethral stricture, and incontinence [6, 7]. Additionally TURP may be complicated by bladder neck contracture (BNC), with a reported frequency of 0-9 % [8][9]

Bladder neck contracture (BNC) occurs after TURP due to obliteration of the microvascular supplying the outlet this results in tissue ischemia and scar formation [10]. Risk factors of BNC development after prostatectomy include a history of diabetes mellitus, coronary artery disease, obesity, surgeon experience, surgical technique and certain operative complications (hemorrhage, prolonged urine leak, anastomosis disruption). A multivariable analysis performed by Borbogluet al. revealed advanced age, diabetes mellitus, smoking history, coronary artery disease, increased operative time and increased operative blood loss all as significant risk for BNC[11]

MANAGEMENT

URETHRAL DILATATION: Urethral dilation followed by intermittent catheterization is a reasonable treatment strategy in highly dexterous, motivated patients. This is the best employed in patients with short soft bladder neck contracture without evidence of complete occlusion of the outlet. Therefore a detailed assessment of the problem is necessary before recommending this approach even in properly selected candidates, more than 90% of patients will require repeat dilation within the first 2 years[12]

There are several reports that have investigated the utility of urethral dilation for BNC. In a small cohort of post prostatectomy patients (n=32), Park et al. successfully managed the majority (n=24, 93%) of patients with urethral dilation and a 3-months course of intermittent catheterization [13]. Complications of intermittent self-dilation include urinary retention, gross hematuria, infection, false passage and synchronous urethral stricture.

Urethral Stent: Introduced in 1988 by Milroy for urethral stricture management [14] the UroLume “endoprosthesis” (American Medical System ,Minnesota ,USA) has also been used for recalcitrant BNC [14]. Unfortunately complications such as obstruction caused by tissue in growth, stent migration/encrustation, hematuria, and the need of repeat surgery are common and thus, the UroLume has fallen out of favor and is now no longer available in United States.[15]

MEMOKATH is a nickel titanium alloy coil with shape memory[16]]. It expands at 60 degrees centigrade and is resistant to compression. Due to the stents uncoiling in cold water they are very easy to remove, even if they are encrusted[16] Key success of (MEMOKATH) stent

1. A simultaneous retrograde and ante grade approach with through hand through guide wire, securing measuring the right length of the stricture and visually securing stent placement with the upper cone in the bladder and the lower cone above the sphincter.
2. Minimal dilation for from attachment of the stent during thermos-expansion. As with other metal stents, patients should undergo regular follow-up since the stents may encrust and migrate[17]. Spontaneous resolution of ureteral strictures after Memo Kath placement has been reported[17].however in case of BNC, spontaneous resolution probably cannot be expected and if removal of the stent is necessary due to malfunction this will most likely require replacement of a new stent or another therapeutic approach.

Endoscopic Incision:

BNC incision can be performed with a variety of techniques including cold knife, electrocautery, laser, hot knife and loop resection [10][18][19, 20]. Morey and colleague recently describe a treatment protocol that combines urethral dilation with hot knife bladder neck incision in one procedure with 72%success tare at median 16 month follow up. Briefly a 4 cm x24 cm uromax ultra balloon dilator is used to define the bladder neck circumferentially before a Collins knife is used to take the bladder neck down to perivesicle fat at 3 o clock and 9 o clock. Patients are evaluated with uroflowmetry and cystoscopy at 2 months. Success is defined as the ability to pass a 16 Fr flexible cystoscopy into the bladder with ease. Another 14%of patients will have treatment defined success with a single additional balloon dilation. [15, 21].

Introduction to cytotoxic agents transurethral have been explored abdomen are undergoing validation, Eltahawy et al has shown 83%success rate taking down the bladder neck with a holmium laser and bathing the stricture site in triamcinolone.[22]

MITOMYCIN C (MMC) utilization has gained significant traction more recently and has been instilled after radical cold knife incision of the bladder neck[23] .Ina recent multi institutional report assessing BNC treatment strategy with MMC a 75%success rate was noted with one- time treatment.

CONCLUSION

BNC is rare but fearful condition treated by reconstructive urologist. Appropriate knowledge is necessary for various therapeutic modalities to treat BNC. Smokers are the one with higher risk. Treating the underline cause of BOO secondary to post TURP BNC is necessary where minimal invasive treatment is also the options. Certain conditions where patients can't effort to have complicated surgery like (old age with comorbid status, financial status, or patients wish) in such scenario minimal invasive management has great role. Minimal invasive management can be offered as office based or day care surgery with minimal risk.

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