Bladder Neckcontracture Following Turp – Personal Experience

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Research Article

Abstract: **Objective:** To understand the incidence, clinical presentation, treatment options of bladder neck contracture after transurethral resection of prostate. **Material and Methods:** Medical data of 198 patients, who underwent transurethral resection of prostate from January 2008 to May 2009, were analyses. Data of patients with bladder neck contracture following TURP were further scrutinized. Exclusion criteria were urethral strictures, prostate cancer, patients with history of previous transurethral resection of prostate, prior instrumentation, bladder neck incision. **Results:** Of the 198 who underwent TURP bladder neck contracture was observed in 12 patients. Mild, moderate, severe (diaphragm type) contracture was observed in 3, 6, 3 patients respectively. Treatment included dilatation in 3(mild contracture), incision in 6(moderate contracture) incision and hot loop electro resection in 3(severe contracture) patients. The 3 patients who were treated initially by urethral dilatation had symptom recurrence in 4 weeks and were subsequently dealt by bladder neck incision. Of the 6 patient streated by bladder neck incision, 3 were symptom free after a single session,1 needed a further bladder neck incision for cure and 2 required bladder neck incisions twice for cure. Of the 3 patients with severe(diaphragm type)contracture 1was symptom free after a single session but 2 became symptomatic within three months and required incision on two occasions. **Conclusion:** Bladder neck stenosis after transurethral prostate surgery is diagnosed either by symptoms or urethrocystoscopy. The incidence of recurrence after bladder neck dilatation is100%even in mild type of bladder neck contracture**.** The best results for treatment of the contracture are obtained after bladder neck incision, which gives an incidence of recurrence only up to 50% after a single session.

Key words: lower urinary tract symptoms, transurethral resection of prostate, bladder neck contracture, Bladder neck incision, benign prostatic enlargement, complications, urinary retention.

Introduction

Post-operative bladder neck contracture is an uncommon yet devastating complication of transurethral resection of prostate leading to urinary retention, incontinence and multiple repeated invasive procedures[1].The onset of symptoms due to bladder neck contracture varies from a few weeks after surgery to as long as 10 years[4].Diagnosis is usually made either by urethrocystoscopy or retrograde urethrography in which the characteristic "tooth-paste'' sign may occur[9].The development of Urodynamic studies in combination with video cystography has defined accurately the true nature of the disorder of the bladder neck[9].Various treatment options are described for bladder neck contractures. Dilatation, bladder neck incision, electro resection of the contracture following dilatation[8].

In our study, the incidence of recurrence after bladder neck dilatation is100%even in mild type of bladder neck contracture**.** The best results for treatment of the contracture are obtained after bladder neck incision, which gives an incidence of recurrence only up to 50%after a single session. In addition, poor results were obtained when the bladder neck contracture was treated by re-resection of the bladder with a hot loop.

Material and methods

Medical data of 198 patients, who underwent transurethral resection of prostate from Jan 2008 to May 2009, were analyzed. The evaluation parameters included age, prostate specific antigen level, clinical presentation, urinalysis, uroflometry findings, adenoma weight, method including anaesthesia, resectoscope used, cautery settings, resection time, resected volume, catheter removal time as well as intra and post operative complications for a mean follow up period of one year. Data of patients with bladder neck contracture following TURP were further scrutinised. Exclusion criteria were urethral strictures, prostate cancer, patients with history of previous transurethral resection of prostate, prior instrumentation, bladder neck incision.

Results

Age range of patients undergoing TURP was between 48 to 91 years with a mean of 69.5yrs. The most frequent indication (50–60%) for transurethral resection was symptoms refractory to medical therapy. Others included recurrent urinary retention, BPE-related macrohaematuria refractory to medical therapy, renal insufficiency or upper urinary tract dilatation, bladder stones and recurrent urinary tract infection. Only 71 patients (35%) had IPSS

scored in their files, of which 18 patients had a mean IPPS of 14 ± 3.81SD and 53 patients had IPSS of 24 ± 7.71 SD. All the patients were operated under subarachnoid block. Patients with bladder stones underwent TURP and lithotripsy in the same session. Prostatic volume assessed by Trans abdominal ultrasound scan ranged from 32 Gms to 93 Gms(mean 62.5).Preoperatively a sterile urine culture and sensitivity was obtained. Injection Ceftriaxone 1gm IV given at the time of induction of anesthesia and continued for five days. Procedure was done by a single urologist with experience in urology for more than 5 years .Distilled water kept at a height of 60 cms was used as irrigation fluid ,Storz 26F ,single stem ,continuous flow resectoscope and L&T 400 cautery with a setting of 100 w ,50 w cutting ,coagulation respectively was used for all cases . Resection done in the standard (Nesbit) technique.22 F -3 way foley was kept under traction for 6 hours and normal saline used for irrigation. The weight of resected prostatic tissue ranged from 3 to 63gm (33gm) over an operation time of 25 to 105 minutes (mean 65 minutes) .There was no documented transurethral resection syndrome. Urethral catheters were removed in all patients on day 4 but 12 patients required re-catheterization, with successful trial without catheter in 7 patients after 2 weeks. Urine culture and sensitivity was done following catheter removal in all patients and positive cultures were treated with antibiotics. Satisfactory outcome was recorded in the immediate postoperative period in 190 patients (95.9%).Hospital stay was of 1–14 days duration and the follow up period was 12 months. 12 (6.06%) patients developed bladder neck contracture over a 1 year follow up. The interval between surgery and presentation of symptoms of bladder neck contracture ranged from 4 weeks to 6 weeks. Further data analysis of patients with bladder neck contracture showed age 48-59 years, gland weight 32 -49gms, resected volume 3-27 Gms, catheter removal time on post operative day 4.The presenting symptoms in 8 patients were frequency, nocturia, poor stream and 4 patients presented with acute urinary retention. In all patients' diagnosis was confirmed by urethroscystocopy. Of the 12 patients, 3had mild elevation of bladder neck,6 had moderate stenosis and 3were found to have the severe type of contracture with pinhole narrowing of the bladder neck(diaphragm type)(***Figure 1***)**.** Treatment options included dilatation in 3 patients (mild contracture), incision in 6(moderate contracture), incision and hot loop electro resection in 3(severe contracture) patients. The three patients who were treated initially by urethral dilatation had symptom recurrence in 4 weeks and were subsequently dealt by bladder neck incision. Of the 6 patients treated by Bladder neck incision, 3 were symptom free after a single session, one needed a further bladder neck incision for cure and two required bladder neck incisions twice for curebut all these patients were on self dilatation after incision. Of the 3 patients with diaphragm like contracture, incision and resection were done. The incision exposed periprostatic fat and resection done between 5-7'o'clock position. Of the three patients one patient was symptom free after a single session but two patients became symptomatic in three months time and required incision on two occasions.

Discussion

Over the last 70 years, transurethral resection of prostate has been used in the surgical management of benign prostatic hyperplasia and is still considered the gold standard[1]. Urethral stricture (2.2–9.8%) and bladder neck contractures (0.3–9.2%) are the two major late complications following transurethral resection of prostate[2].Risk factors may include previous surgery, radiation, postoperative bleeding. With improvements in operative techniques, video endoscopy, anaesthetic care and intraoperative monitoring of fluid and electrolytes, rates of intraoperative and postoperative morbidity and mortality have been greatly reduced[2]. The onset of symptoms due to bladder neck contracture varies from a few weeks after prostatectomy to as long as 10years[6].Diaphragmatic contractures can form as early as 23 days after resection. Bladder neck contractures are less likely to occur when the prostate is large, or where the prostate extends intravesically. Apparently in these circumstances the vesical neck is pushed aside and is protected[2]. Extensive electro resection to this area is an important factor in theaetiology of post-operative bladder neck fibrosis [2].In small prostates the bladder neck should not be resected radically but, if this is necessary, the coagulation of tissue in this area should be kept to a minimum[6].The incidence of bladder neck contracture after retro pubic and transvesical prostatectomy is less than after transurethral electro-resection. Recently, this form of surgery has been challenged by other procedures deemed equally effective but less invasive[35]. To avoid this complication in small prostates the bladderneck should not be resected radically but, if this is necessary, the coagulation of tissue in this area should be kept to a minimum[6]. Theoretically, bipolar technology or laser minimizes the risk of bladder neck contracture. Diagnosis is usually made either by cystourethroscopy or retrograde urethrography in which the characteristic "tooth-paste'' sign may occur[9]. The development of urodynamic studies in combination with videocystography has defined accurately the true nature of the disorder of the bladder neck[9]. Various treatment options are described. These include dilatation, bladder neck incision, electro resection of the contracture following dilatation or incision[8]. Open

revision of the vesical neck by circumferential excision of the fibrous tissue with a scalpel or scissors can be performed when the contracture was diaphragmatic in nature[6].The best results were obtained by bladder neck incision using a Sachseurethrotome which extended from the bladder neck to the verumontanum and deeply into the prostatic capsule[10].Repeat resection of the contracture at the bladder neck by hot loop electro diathermy gives poor results and is not recommended[10]. However, there are reports of a higher stricture rate in a randomized study that compared bipolar to standard TURP (6.1 vs. 2.1%)[7]. The reason for this might not be the use of bipolar technology, but the fact that the latter required a larger resectoscope (27 F). This underlines the multi factorial causes of contractures, depending on technique (i.e. operating room time), technology, and the regimen of antibiotic treatment. A prophylactic bladder neck incision at the end of the procedure may reduce the incidence[8]. Of the 198 patients symptomatic bladder neck contracture was seen in 12(6.06%) patients. mild, moderate, severe contractures were seen in 3, 6, 3 patients respectively. Treatment included dilatation in 3 patients (mild contracture) incision in 6 patients (moderate stenosis) incision and hot loupe resection in 3 patients (severe stenosis).incidence of recurrence after bladder neck dilatation was 100% even in mild cases. Literature review also showed same results after bladder neck dilatation (5).Our study showed a recurrence of 50% after a single session of bladder neck incision where the review of literature showed 9% recurrence(10).A recurrence rate of 66 % was seen when bladder neck incision & resection was done comparesd to 46 % in literature review.(5).our results though do not match with the published results reinforces the fact that bladder neck incision gives best results with lesser number of recurrences.

Summary

Bladder neck stenosis after transurethral prostate surgery is a significant problem. Treatment has to be tailored as per the experience of the surgeon, urethrocystoscopy findings and urodynamic study.

Conflict of Interest: None

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