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BLADDER NECK RESECTION WITH PRESERVATION OF ANTEGRADE EJACULATION

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Objective To evaluate a new method of bladder neck resection and to determine whether or not antegrade ejaculation can be preserved.

Patients and Methods Twenty patients with bladder neck obstruction were treated by bladder neck resection with preservation of more than 1 cm proximal to the verumontanum. The patients were evaluated before and after resection by assessment of semen volume, sperm count, symptom improvement and urodynamic evaluation.

Results With this technique preserving > 1 cm of the supramontanal part, we could preserve antegrade ejaculation in 17 out of 20 patients (85%), while in two patients only a small amount of semen was ejaculated and in one patient, complete retrograde ejaculation was reported.

Conclusion The complication of retrograde ejaculation after bladder neck resection may be avoided by preservation of > 1 cm of the supramontanal part. This is especially important for young patients for whom fertility is of essential importance.

Key Words bladder neck, bilharziasis, transurethral resection, antegrade ejaculation

INTRODUCTION

In Egypt, bladder neck obstruction in adults is mostly due to bilharziasis. The bladder neck fails to open during micturition due to subtrigonal fibrosis as a result of massive ovideposition. In some cases, chronic fibrous prostatitis due to bilharziasis may be the cause or the added pathology leading to obstruction[1].

In addition to patient discomfort due to irritative and/or obstructive symptoms, the hazardous effects on the upper tract cannot be ignored in many cases.

The disease mainly affects young men (20-45 years). However, any endoscopic procedure to correct it will result in retrograde ejaculation in as many as 15-37% of patients and the possible sequel is infertility[2,3]. This is why many patients prefer to live with their symptoms instead of accepting a treatment which carries the risk of infertility.

Transurethral incision of the bladder neck has become popular since Turner-Warwick[4] introduced the use of endoscopic diathermy incision.

Retrograde ejaculation may occur due to the removal of the smooth sphincter of the bladder neck. However in some patients antegrade ejaculation could be maintained, which was interpreted as a consequence of the preservation of the "pre-prostatic sphincter" preventing the return of seminal fluid into the bladder during ejaculation[5-8]. These findings have led to the development of a technique preserving some of the supramontanal prostatic tissue to maintain antegrade ejaculation[7].

PATIENTS AND METHODS

From July 1998 through July 1999, 20 patients suffering from bladder neck obstruction (mean age 36.1, range 29-45 years) were treated by this new technique at our institution. None of them had diabetes or any neurological disease and all patients reported normal antegrade ejaculation before surgery.

Assessment of the International Prostate Symptom Score (IPSS), Quality of Life score (QoL), semen volume, sperm count and urinary flow rate as well as abdominal ultrasound, intravenous urography (I.V.U) and

Table 1: IPSS Before and After Treatment

	Preoperative	Postoperative
IPPS*	17.8 ± 5.24	5.95 ± 1.43
QoL	5.2 ± 1.8	1.7 ± 0.1

P < 0.01

Table 2: Seminal Volume and Sperm Count Before and After Treatment

	Preoperative	Postoperative
Seminal volume (ml)*	3.08 ± 0.89	2.94 ± 1.16
Sperm count ($1X10^6$/ml)	88.6 ± 13.4	85.7 ± 17.6

P > 0.05

urethro-cystoscopy were done on all our patients.

Every patient signed a written consent form concerning his agreement with regard to the possibility of retrograde ejaculation.

Surgical Technique:

The posterior lip of the bladder neck is resected in the usual manner, but resection should stop at a distance > 1 cm from the verumontanum. The edges of resection should be regular all around to ensure a good overlap during contraction and, hence, a good closure during ejaculation. A poor overlap could lead to the return of some semen back into the bladder even with antegrade ejaculation. The shape of the edges can be determined during resection when the resectoscope is withdrawn distally to the membranous urethra.

RESULTS

A comparison of the IPSS score before and after the operation revealed a decrease from 17.8 ± 5.24 preoperatively to 5.95 ± 1.43 postoperatively (P < 0.01), while the quality-of-life value was reduced from 5.2 ± 1.8 preoperatively to 1.7 ± 0.1 postoperatively (Table 1).

Normal micturition was confirmed by an improved maximum flow rate which rose from 9.2 ± 3.04 ml/sec preoperatively to 17.5 ± 3.36 ml/sec postoperatively (P < 0.01).

Seminal volume and sperm count were compared before and after treatment. The results are illustrated in Table 2. In two patients less than 1 ml of semen was ejaculated and in one patient complete retrograde ejaculation was reported.

One patient had a residual urine volume of 140 ml before surgery, which decreased to 45 ml after surgery.

DISCUSSION

Normal antegrade ejaculation is produced by contraction of the prostate, the prostatic capsule and the urethral muscles. This, of course, requires co-ordination between the sympathetic system (innervating the bladder neck, prostate, urethra and seminal pathways) and the somatic system (innervating the striated sphincter and perineal muscles)[8].

Hedlund and Ek[5] compared unilateral and bilateral bladder neck incision, which stopped proximally to the verumontanum. They concluded that the incision did not prevent retrograde ejaculation and that the extended incision did not give any additional relief of outflow obstruction[5].

In our series, the patients' symptom score (IPSS) improved by decreasing from a mean of 17.8 before surgery to a mean of 5.95 after treatment. This is in agreement with the study of Ronzoni et al.[8] who found a preoperative IPSS of 22.6 which decreased to 5 after surgery.

The maximum flow rate in our patients increased from a mean of 9.2 ml/sec to a mean of 17.5 ml/sec after surgery, which is again comparable to the results of Ronzoni et al. who reported a mean maximum flow rate of 9 ml/sec and 17 ml/sec before and after surgery, respectively[8]. Similar results were also found by Hedlund and Ek. In their series the mean Qmax was 8.6 ml/sec before surgery and increased to 24.8 ml/sec after surgery[5].

In our study the mean seminal fluid volume before and after surgery did not change significantly (P > 0.05) which compares

favourably with the findings of Hedlund and Ek[5].

The sperm count in our study changed from 88.6 million/ml to 85.7 million/ml ($P > 0.05$) which is comparable to the results of Hedlund and Ek[5] where the sperm count changed from 94.8 million/ml to 90.6 million/ml.

Without doubt, in countries with a high incidence of bilharziasis and a large number of patients suffering from this disease, bilharzial bladder neck obstruction will frequently be encountered. As the conventional technique of bladder neck resection may result in infertility, we suggest the use of the new technique described herein to avoid such complication.

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RESUME

La Résection du Col de Vessie avec Préservation de l'Ejaculation Antégrade

Objectif Evaluer une nouvelle méthode de résection du col de la vessie et de déterminer si l'éjaculation antégrade peut être préservée. **Patients et Méthodes** Vingt patients présentant une obstruction du col de la vessie ont été traités par résection du col de la vessie avec préservation de plus d'un cm en amont du veru montanum. Les patients ont été évalués avant et après la résection par l'étude du volume de l'éjaculat, la numération des spermatozoïdes, l'amélioration des symptômes et le bilan urodynamique. **Résultats** Avec cette technique préservant plus de 1 cm de la zone supra-montanale, nous avons pu préserver l'éjaculation antégrade chez 17 des 20 patients (85%), tandis que deux patients avaient un éjaculat de faible volume et une éjaculation rétrograde a été notée chez un patient. **Conclusion** Les complications de l'éjaculation rétrograde chez des patients jeunes qui sont demandeurs de fertilité peuvent être évitées par la préservation de plus de 1 cm au dessus du veru montanum au cours de la résection du col de la vessie.

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