

OPTICAL INTERNAL URETHROTOMY FOR URETHRAL STRICTURE UNDER A NEW LOCAL ANAESTHESIA TECHNIQUE

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Abstract

Objectives: To determine the feasibility of routinely performing internal optical urethrotomy for anterior urethral stricture under intracorpus spongiosum anesthesia in an outpatient setting.

Methods. In this prospective study a consecutive series of 34 patients with anterior urethral stricture, a dosage of 3 mL of 1% lidocaine was slowly injected into the glans penis. Next, optical urethrotomy was performed immediately with a cold-cutting knife. The effect of this anesthetic technique was evaluated by questionnaire.

Results. Internal urethrotomy was successfully completed in all the patients. Thirty-two patients (94.12%) had no pain or discomfort. Two patient reported minimal but tolerable discomfort while the tissue above the stricture was being cut. The anesthesia lasted for about 1.5 hours and was very satisfactory without any complications.

Conclusions. Under intracorpus spongiosum anesthesia, optical urethrotomy can be routinely performed in an outpatient setting. With this new local anesthesia, internal urethrotomy is a safe, effective, simple, and inexpensive procedure for treatment of anterior urethral stricture.

Key Words: Optical internal urethrotomy, stricture urethra.

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Introduction

Introduction of O.I.U. by Sachse [1] has simplified the management of urethral stricture. The result of O.I.U. had been generally optimistic [2,3,4,5]. However, some studies have shown lower cure rate. [6] Recurrence rate after a single O.I.U. varies from 5 to 50% thereby requiring repeated O.I.U. There are several factors influencing recurrence rate of stricture after O.I.U. like preoperative infection,[7] cath-eters used, [8] patient's age, site of lesion, [9] stricture length and periurethral scarring.[10] In a country like ours where road traffic accident is high resulting in fractured pelvis, the incidence of stricture ure-thra is quite enormous and is a burden for the urologist and the hospitals. Patients have to wait for a long time for admission for the procedure to be done under general or regional anaesthesia. Internal urethrotomy under direct vision has been advocated as

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the primary treatment for strictures of the penile and bulbar urethra.[11] Routinely, optical urethrotomy has been performed under either spinal anesthesia or epidural anaesthesia. From June 2008, we were inspired to perform internal urethrotomy using intracorpus spongiosum anesthesia in clinical practice of the dept. of Urology of Dhaka Medical College Hospital. Then we performed the same procedure under local anesthesia the department of Urology of Shaheed Suhrwardy Medical College Hospital. Since then, 34 consecutive patients with anterior urethral strictures have undergone optical urethrotomy using intracorpus spongiosum anesthesia and are the subject of this present study.

Material and Methods

This prospective study was carried out in the Dept. of Urology of Dhaka Medical College between July 2008 to Jun 2010 and department of Urology Shaheed Suhrwardy Medical College Hospital from February 2011 to December 2013. All primary urethral stric-tures

(excluding meatal stenosis and bladder neck obstruction) were included in our study. Diagnosis of these patients were done from clinical history, retrograde urethrography, micturiting cystourethrography and uroflowmetry. We used this new local anesthetic technique on 34 male patients who ranged in age from 21 to 65 years (mean 34.6). Strictures involved the bulbous urethra alone in 24 patients and 7 had a solitary stricture of the pendulous urethra. Multiple sites were involved in 3 patients and usually included the bulbous urethra. The length of the strictures varied between 0.5 and 2.1 cm (mean 1.4) on retrograde urethrography. After fulfilling the inclusion criteria, they were subjected to O.I.U. under local anaesthesia. Inj. Gentamycin 80mg IM was given before surgery. The anesthetic technique performed was identical in all patients. We prepared and cleaned the genitalia, retracting the foreskin when present. The penis was held around the coronal sulcus with a swab in one hand, and a 5-mL injector in the other. A 23-gauge hypodermic needle was used, and a dosage of 3 mL of 1% lidocaine was slowly injected into the glans for 1 minute. To avoid bleeding, the glans was squeezed with the swab for 1 to 3 minutes. Then, internal urethrotomy was immediately done with a 21 FR Storz cold-cutting urethrotome over a guide wire. We passed the urethrotome with its cold knife in place up the urethra as far as the stricture, which was carefully cut at the 12, o'clock positions until the full thickness of the fibrous scar was divided and normal tissue above and below the stricture had been reached. The urethra was incised deeply until a 18 Fr catheter could be passed with ease. The Foley catheter was left in place for 3 to 4 weeks. All procedures were undertaken in an outpatient setting, and patients were released with an indwelling catheter in place immediately after completion of the optical urethrotomy. Antibiotic coverage with Cefixime 200mg twice daily was provided for 5 days. The patients were followed up for at least 3 to 12 months.

Results

The series was composed largely of post-traumatic stricture (27 of 34, 79.41%) resulting from blunt trauma owing to straddle injuries in 17 cases and a direct blow to the perineum in 10 patients. Five were secondary to infection, and two were postoperative stricture due to history of iatrogenic manipulation of the urethra. None of these patients had any previous history of treatment for stricture excepting suprapubic cystostomy on whom required. Using the intracorporeal spongiosum anesthesia with lidocaine, internal urethrotomy under vision was successfully completed in all the patients. The

anesthetic effect was immediate after lidocaine was injected into the glans and it lasted from 30 minutes to 2 hours (average 1.5 hours). All the patients except two reported no pain or no discomfort. These two patients had a penoscrotal urethral stricture (about 2 cm long) had minimal but tolerable discomfort when the tissue above the strictured area was incised. Administration of a second dose of lidocaine could not eliminate the discomfort. After a dose of 1 mL of 1% lidocaine was injected by way of the perineum into the bulbous corpus spongiosum above the strictured area, the discomfort disappeared completely. Although the follow-up of patients was difficult, because the population is distributed over a very wide area, 23 patients were followed up for 3 to 13 months. At last follow-up, 19 patients were asymptomatic and voiding well with a normal stream. No complications occurred with intracorporeal spongiosum anesthesia in our series.

Discussion

Traditionally, optical urethrotomy has been performed under regional anesthesia [2,3]. A few have been done under topical anesthesia with lidocaine. Our experience has been that the topical anesthesia is unsatisfactory. The effect of intracorporeal spongiosum anesthesia in our series has been very satisfactory. Almost all the patients had no discomfort or complications with the anesthetic technique. The anesthetic effect was immediate after injection of lidocaine and could last for about 1.5 hours. Two patients reported minimal discomfort when the tissue above the strictured area was being cut. Full-thickness spongiofibrosis extending to the outside of the strictured area may account for his discomfort, because it is difficult for lidocaine to go through the scar tissue into the corpus spongiosum above the strictured area. Thus, it was not until a dose of 1 mL of 1% lidocaine was injected into the bulbar corpus spongiosum that the patient's discomfort disappeared. Kreder et al performed optical urethrotomy under topical anesthesia with 2% lidocaine in 18 patients, 3 of whom could not stand the procedure because of pain. Twelve patients reported either no discomfort or minimal discomfort. They tried topical anesthesia for internal urethrotomy in 6 patients with anterior urethral strictures. Unfortunately, all 6 patients reported severe discomfort, which could not be tolerated when the fibrous scar was being incised to the surrounding healthy spongiosum. In addition, topical anesthesia with lidocaine lasted for less than 40 minutes. Intracorporeal spongiosum anesthesia, however, lasted for 1.5 hours in our study. If a longer operating time is required, a second dose of 1% lidocaine can be

easily administered. Although the effectiveness of optical urethrotomy is beyond the content of this study, extensive and deep incisions can afford a high rate of success. To prevent the stricture from recurring, the full thickness of the fibrous scar should be divided, and the surrounding healthy spongiosum, including that above and below the strictured area, should be reached. We believe that all strictures of the anterior urethra can be adequately incised to the healthy spongiosum under intracorporeal spongiosum anesthesia.

Conclusions

Optical urethrotomy can be satisfactorily completed under intracorporeal spongiosum anesthesia. The procedure is simple, safe, effective, and inexpensive. We now routinely use intracorporeal spongiosum anesthesia for all patients receiving internal urethrotomy for anterior urethral strictures. We are planning to extend this anaesthetic procedure to male patients who undergo other minor procedures on the glans or anterior urethra like the dorsal Y-V meatotomy, diathermy of warts in the glans, etc.

Conflict of interest: None declared.

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Abbreviations:

OIU : Optical internal Urethrotomy