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Retrograde Urethrography in the Postoperative Control of Urethral Strictures Treated with Visual Internal Urethrotomy

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Key Words

Urethral stricture

Urethrotomy

Retrograde urethrography

Abstract

Urinary flow measurement and often retrograde urethrography are used in the postoperative control of urethral strictures treated with urethrotomy. In the present study we have evaluated the usefulness of retrograde urethrography and find that the postoperative control should consist of a history and uroflowmetry.

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Introduction

There are several diagnostic procedures used in the preoperative evaluation of patients suspected of suffering from a urethral stricture. Maximal urinary flow rate as well as the shape of the curve are used as a screening procedure [6, 9, 15], but give no further information. Recording of the urethral pressure profile was first described by Brown and Wickham [4] in 1969 and was tested in later studies [2, 3, 5, 10, 15]. The profile gives more or less the same information as retrograde urethrography, but urethral pressure profile does not play a prominent part in the routine diagnosis of urethral strictures. Retrograde urethrography is a well-established procedure in diagnosing urethral strictures [11, 12]. Lately a combined antegrade and retrograde urethrography has been used in the evaluation of urethral strictures [1].

In the postoperative control of urethral strictures, treated with visual internal urethrotomy, urinary flow measurement and often retrograde urethrography are used [7]. The aims of the present study were to evaluate the usefulness of retrograde urethrography in the postoperative control.

Patients and Methods

In the 5 years between January 1977 and December 1981 most of the patients treated for primary urethral strictures with internal urethrotomy were assigned for a specific postoperative control regimen.

Sixty-five men entered the present study, median age 64 years (range 17–88). Their voiding complaints prior to surgery were: frequency > 3 h; nocturia > two times; urgency; urge incontinence; overflow incontinence; poor stream; bifurcated stream, and dribbling after finished micturition. These symptoms together with a mictiography demonstrating a box-shaped curve with a maximal urinary flow of < 15 ml/s were considered to suggest the presence of a stricture. Further, a retrograde urethrography was performed. In all 65 the X-ray pictures revealed urethral

stenosis. The final diagnosis, however, was established by endoscopy during which all fibrous tissue was incised with the cold knife urethrotome at 12 o'clock.

An indwelling catheter was left for a variable period of time, depending on the length of the stricture. The patients were posturgically followed with regular controls for 24 months. The follow-up consisted of a history, urinary flow measurements and retrograde urethrography. A recurrence of the stricture was defined according to the micturition complaints and the mictiography, and verified during re-urethrotomy.

Results

Thirty-one of the 65 patients developed recurrence of the stricture within the observation period. All these patients had stricture symptoms and stricture configuration on the mictiogram. The remaining 34 patients had no clinical sign of recurrence. However, in 9 of the patients (26%) the urethrography demonstrated a stricture: 3 in the membranous part and 6 in the penile part.

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Discussion

Retrograde urethrography performed preoperatively provides information on the location and number of strictures, although those in the proximal portion of the anterior urethra may be difficult to demonstrate [11, 14]. Several authors have questioned the value of postoperative retrograde urethrography in the estimation of the operative results because the correlation between urethrography and the clinical condition after visual internal urethrotomy for urethral strictures is poor. Shaver et al. [13] found in 50 consecutive patients undergoing transurethral resection of the prostate that 15 patients developed symptomless changes on urethrography. Postoperative stricture configuration on urethrography was found in 18 of 22 patients whose voiding symptoms disappeared or improved after visual internal urethrotomy for urethral strictures [7]. A similar high frequency of stricture changes on the postoperative urethrography was found by Stone et al. [16]. Thirty-eight (92%) of 40 patients treated with visual internal urethrotomy due to urethral strictures still had significant abnormalities. In all patients the symptoms were improved postoperatively.

Maximum urinary flow rate has also been widely used in the postoperative control of urethral strictures. Johnston et al. [8] found that there was a good correlation between the patients' subjective responses and the measured flow rates. When the flow rates were less than 15 ml/s they were usually dissatisfied with the result. Although the patients are without complaints, the uroflow-metry still shows a box-shaped curve in many patients [7].

In the present investigation we found that all the patients with voiding disorders indicating recurrence of the stricture postoperatively had a box-shaped mictiogram with a maximal urinary flow of less than 15 ml/s. Twenty-six percent of the patients without clinical signs of recurrence had significant changes on the urethrography.

In conclusion we find no indication for routine urethrography in the postoperative follow-up. The control parameters should include a history and uroflowmetry.

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