

FACTORS AFFECTING RECURRENCE IN PATIENTS WITH URETHRAL STRICTURES UNDERWENT DIRECT VISION INTERNAL URETHROTOMY

Hypothesis / aims of study

It is well known that the most commonly used method for the treatment of urethral stricture is direct vision internal urethrotomy (DVIU). Commonly the results are not permanent and stricture may recur in a short time. In this retrospective study we aimed to analyze the effects of stricture location, etiology and age on recurrence and the time to recurrence in patients underwent DVIU for urethral strictures due to iatrogenic causes and stricture length shorter than 2 cm.

Study design, materials and methods

The data of the patients underwent DVIU were evaluated retrospectively. According to the location of the stricture patients were divided into three groups as penile urethra (L1), membranous urethra (L2) and prostatic urethra (L3). According to the etiologic causes they also divided into three groups as strictures secondary to endoscopic procedures (E1), strictures due to urethral catheterization (E2) and strictures after open and radical prostatectomy. Age groups were formed as patients younger than 40 years of age (A1), patients between 40-60 years of age (A2) and patients older than 60 years of age (A3). All patients were analyzed in terms of recurrence rates, time to first recurrence, time to second recurrence, and additionally recurrence rates and times to recurrence according to stricture localization, etiology and age. SPSS 20.0 package program was used for analysis of data. Pearson correlation analysis, Shapiro-Wilk test, Kruskal-Wallis test and Kolmogorov-Smirnov test were used for the analysis of variables.

Results

DVIU was performed in 172 male patients for urethral strictures caused by iatrogenic reasons in the past five years. Patients' ages ranged from 21 to 95 (mean 68.535).

In respect to etiology; strictures occurred secondary to endoscopic procedures in 100 patients, due to urethral catheterization in 53 patients and after open and radical prostatectomy in 19 patients. Strictures were in the penile urethra in 90 patients, in membranous urethra in 52 patients and in prostatic urethra in 30 patients. 8 patients were in the <40 group, 21 patients were in the 40-60 group and 143 patients were in the >60 group according to the age range.

Stricture recurred in all patients after first DVIU and the time to first recurrence ranged between 14 and 1030 days (mean 233.465). First recurrence occurred within 120 days in 22 patients (12.8%). 48.84% of the patients had second recurrence in 1155 days follow-up period. Stricture was most frequently detected 120 days after the operation in second recurrence as in the first recurrence.

Recurrence rate was not significantly different between the three etiologic factors. Although time to second recurrence were found 296 days for E1, 203 days for E2 and 236 days for E3, there was no significant difference between these intervals ($p=0.549$). Table 1 shows recurrence details according to etiologic factors.

The lowest recurrence rate was seen in L1 strictures (35.55%). This rate was 61.53% for L2 strictures while it was 66.66% for L3 strictures ($p=0.680$). Time to recurrence was shortest for penile urethral strictures for both the first and the second recurrences. There was no significant difference between time for the first and the second recurrences for all localizations ($p=0.531$). Penile urethral strictures recurred significantly earlier than the other localizations ($p=0.034$). Table 2 summarizes recurrence details according to stricture localization.

There was no difference between the recurrence rates for the age groups. However while time to first recurrence was not different between groups, time to second recurrence was significantly shorter in groups A1 and A2 ($p=0.042$). Time to second recurrence was longer than the time to first recurrence in group A3 (287 vs 240 days). Table 3 gives recurrence details in age groups.

Interpretation of results

Urethral stricture is an important health problem often occurring due to iatrogenic causes. Patients are exposed to multiple operations as a result of serious recurrence rate of stricture which can be seen at all ages and in all localizations of the urethra. It is likely to draw these opinions from this retrospective study;

1. Stricture is a very frequently recurring condition no matter in which localization
2. Recurrences occur usually within the first 120 days after DVIU
3. There is no difference between the time to the first and the second recurrences, it is not possible to say that the second DVIU protects the patient from recurrence for a longer time
4. There is no relation between the etiology and recurrence rate of stricture
5. Time to second recurrence after DVIU is earlier in patients under the age of 60
6. Time to recurrence is longer in patients over the age of 60
7. Penile urethral strictures recur less, but time to recurrence is shorter

Concluding message

DVIU is the most commonly used treatment alternative for the urethral strictures in the world. Despite the frequent recurrences; easiness to perform and inexpensiveness of this method make it useful in the treatment of uncomplicated strictures. It's utilization is not recommended more than two times for recurrent strictures.

Table 1. Recurrence details according to etiologic factors

Etiology	N	First recurrence N	Time (day)	Second recurrence N (%)	Time (day)
Endoscopic procedure (E1)	100	100	233.63	51 (%51)	295.88
Urethral catheterization (E2)	53	53	215.94	24 (%45.28)	202.70
Open or radical prostatectomy (E3)	19	19	284.26	9 (%47.36)	235.55

Table 2. Recurrence details according to stricture localization

Localization	N	First recurrence N	Time (day)	Second recurrence N (%)	Time (day)
Penile urethra (L1)	90	90	225.45	32 (%35.55)	228.78*
Membranous urethra (L2)	52	52	235	32 (%61.53)	282.65
Prostatic urethra (L3)	30	30	260.51	20 (%66.66)	288.42

Table 3. Recurrence details in age groups

Age	N	First recurrence N	Time (day)	Second recurrence N (%)	Time (day)
<40 (A1)	8	8	222.5	3 (%37.5)	100*
40-60 (A2)	21	21	192.85	10 (%47.61)	141.5*
>60 (A3)	143	143	240.04	71 (%49.65)	286.76

Disclosures

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