ROLE OF INTERNAL URETHROTOMY IN TRANSURETHRAL RESECTION OF PROSTATE (TURP)

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ABSTRACT

Objective: To see the benefit of internal urethrotomy before TURP for preventing urethral stricture formation.

Material and Methods: The study was conducted on two hundred patients undergoing TURP. Half of them had internal urethrotomy at 12o'clock position before the insertion of resectoscope sheath. These patients were followed for 1 year for evidence of Urethral Stricture formation.

Result: Sixteen patients in Group A who did not have OTIS-Urethrotomy prior to TURP develop Urethral stricture with in 1 year compared to only 5 patient in Group-B.

Conclusion: Routine use of internal Urethrotomy is beneficial in reducing the incidence of urethral stricture formation after TURP.

Key words: TURP, Urethrotomy, OTIS-Urethrotome, Urethral stricture.

INTRODUCTION

Transurethral resection of prostate is one of the commonest urological procedure performed and is a gold standard in prostate surgery. Like other surgical procedures it is not free of complication. One of the most dreaded post operative complication is the formation of urethral stricture.¹

This study evaluates the safety and efficacy of routine use of OTIS-Urethrotomy prior to TURP for prevention of this complication.

MATERIAL AND METHODS

All the patients needing TURP between January 1998 – June 2001 were included in this trial.

Following were the inclusion criteria.

- Patient not having previous history of urethral manipulation or trauma.
Role of Internal Urethrotomy in Transurethral Resection of Prostate (TURP)

- Patient who agreed to come for follow up.
- Patients who consented to take part in the study.

Following were the exclusion criteria.

- Patient not completing at least one year of follow up.
- Patient with previous history of urethritis.
- Patient with previous history of passage of urinary calculi.
- Presence of urethral stricture or meatal stenosis during TURP.
- Patients needing additional procedure during TURP i.e litholapaxy.
- Patient having malignant prostate.

All procedures were performed by a single surgeon using 27 Fr Storz irrigating resectoscope with glycine as an irrigating solution. Every other patient had OTIS-Urethrotomy at 12o'clock position with instrument set at 30Fr before TURP. Post operative all patients had 22Fr Bardia non-haematuria three way catheter with balloon inflated to 50mls inside the bladder and slow continuous bladder wash with normal saline for 12-24hrs. Catheter was removed after 48hrs. Patients were discharged on 2nd or 3rd post operation day.

All patients were followed in out patient's clinic for at least one year. First outpatient visit was on 3rd week when they present with histology report then subsequent visit were on 3rd month, 6th month and 1 year. During follow up visits, history was taken about improvement in symptoms (AUA-scoring), urine stream and over all satisfaction. Routine urinalysis was performed. Those patients who complained of weak stream had ascending urethrogram, to confirm presence of urethral stricture. All the strictures were successfully treated with one or two setting of optical urethrotomy or meatoplasty. Those having membranous urethral stricture were simply dilated.

RESULTS

The study was conducted on Patients requiring TURP between Jan 1998 – June 2001. 346 patients were included in the study who consented to take part and to come for follow up. 121 patients were lost during follow up. On alternate basis they were divided into two groups. Group A patient had only TURP while Group B patient had internal urethrotomy by OTIS-Urethrotome set at 30 Fr prior to the insertion of resectoscope sheath. For the purpose of convenience in comparison the study sample included initial 100 Patients in each group who completed 1 year of follow up.

Sixteen patients in Group A and 5 patients in Group B developed Urethral stricture within 1 year of follow up. Most of the stricture occurred between 3-6 months post operative (Table-1). In Group A 25% strictures occured with in 3 months, 56.2%

<table>
<thead>
<tr>
<th>Duration Following TURP</th>
<th>Stricture Group A</th>
<th>%</th>
<th>Stricture Group B</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 3 months</td>
<td>4</td>
<td>25</td>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>3 – 6 months</td>
<td>9</td>
<td>56.2</td>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>6 – 12 months</td>
<td>3</td>
<td>18.7</td>
<td>1</td>
<td>20</td>
</tr>
</tbody>
</table>

|**TABLE-1**|
STRUCTURE FORMATION IN RELATION TO DURATION OF SURGERY

<table>
<thead>
<tr>
<th>Time</th>
<th>No.</th>
<th>Stricture in Group A</th>
<th>%</th>
<th>No.</th>
<th>Stricture in Group B</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 30 min</td>
<td>33</td>
<td>4</td>
<td>12.1</td>
<td>36</td>
<td>2</td>
<td>5.55</td>
</tr>
<tr>
<td>30-50 min</td>
<td>42</td>
<td>7</td>
<td>16.6</td>
<td>49</td>
<td>2</td>
<td>4.08</td>
</tr>
<tr>
<td>&gt; 50 min</td>
<td>26</td>
<td>5</td>
<td>19.2</td>
<td>15</td>
<td>1</td>
<td>6.6</td>
</tr>
</tbody>
</table>

TABLE-2

between 3-6 months and 18.7% after 6 months. Similarly in Group B 40% stricture occurs with in 3 months, 40% between 3-6 months and 20% after 3 months.

The result also confirmed that the incidence of urethral stricture increases with the duration of resection time (Table-2) i.e. 19.2% in Group A and 6.6% in Group B had stricture when resection time was more then 50mins, compare to 12.1% in Group A and 5.55% in Group B had stricture when resection time was less then 30mins.Similarly the incidence of stricture formation increase with the increase in weight of prostate gland removed (Table-3).

The incidence of stricture formation had no relation to the age of patient. The commonest site of stricture formation was at external meatus (Table-4).

DISCUSSION

In elderly population urinary out flow obstruction due to enlarge prostate is a common problem. Operating on this age group with other associated body ailment is a challenge. With advancing technology and improvement in operation technique TURP has emerged as one of a safe procedure. This has far less complication in comparison to open surgery on Prostate. The incidence of Urethral stricture has reduced but still range between 7% to 9%.23

The commonest site of stricture formation is at meatal post navicular region.45 Although trauma during surgery is the commonest cause, but post operative urethritis caused by indwelling catheter or infection can also result in stricture formation. This is particularly true if the catheter is of large caliber and stays for longer time. In addition the incidence of stricture formation is related to the size of resected gland and duration of resection.8 The routine use of internal urethrotomy prior to TURP28 significantly reduce the chances of urethral stricture formation. By doing so the caliber of urethra increases and thus lessen the chance of injury caused by stretching and friction from wide resectoscope sheath. The linear cut in urethra at 12 O’clock position

STRUCTURE FORMATION IN RELATION TO WEIGHT OF RESECTION

<table>
<thead>
<tr>
<th>Weight In Gms</th>
<th>No. of Pat.</th>
<th>Stricture in Group A</th>
<th>%</th>
<th>No. of Pat.</th>
<th>Stricture in Group B</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 30</td>
<td>28</td>
<td>2</td>
<td>7.14</td>
<td>32</td>
<td>1</td>
<td>3.12</td>
</tr>
<tr>
<td>30-50</td>
<td>52</td>
<td>8</td>
<td>15.3</td>
<td>43</td>
<td>3</td>
<td>6.97</td>
</tr>
<tr>
<td>50-70</td>
<td>13</td>
<td>3</td>
<td>23.0</td>
<td>16</td>
<td>1</td>
<td>6.25</td>
</tr>
<tr>
<td>&gt; 70</td>
<td>7</td>
<td>2</td>
<td>28.5</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

TABLE-3
### SITE OF STRicture FORMATION

<table>
<thead>
<tr>
<th></th>
<th>Group A</th>
<th>%</th>
<th>Group B</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ext. Meatus</td>
<td>7</td>
<td>43.75</td>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>Penile Urethra</td>
<td>3</td>
<td>18.75</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Bulbar Urethra</td>
<td>5</td>
<td>31.25</td>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>Memb. Urethra</td>
<td>1</td>
<td>6.25</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**TABLE-4**

Heals up quickly. The narrow scar so forms does not significantly reduce the caliber of urethra. Also in our experience this does not cause significant post operative pain. Bleeding from urethra is mild and stops in 1-2 day.

This study confirms that the OTIS-Urethrotomy is safe, quick and easy procedure; the instrument is cheap and easy to handle.

Following are the recommendation to safe guard against post TURP urethral stricture formation.

1. Prior urethral calibration with bougie, which will also rule out any urethral stricture.
2. Routine use of OTIS-Urethrotomy to 30 Fr prior to TURP.
3. Always use visual obturator for introducing resectoscope sheath.
4. Adequate lubrication of urethra with sterile lubricant.
5. When urethra is narrow then use smaller resectoscope of 24 Fr. If urethra is very narrow then use transperineal urethrotomy for TURP.9
6. For prostate gland > 60gms use larger resectoscope of 28 Fr size.
7. Catheter for drainage should be of 20-22 Fr.
8. Remove catheter as soon as possible post operatively.
9. Do not routinely use traction on catheter, if needed then apply 10 min of traction followed by 20 minutes of rest.

**CONCLUSION**

Spending couple of minutes before TURP to perform internal Urethrotomy will significantly reduce the occurrence of one of the most dreaded urological complication, which may result in life long misery.

**REFERENCES**

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