

膀胱软镜联合尿道内切开镜会师治疗骨盆骨折 术后尿道狭窄(附 12 例报告)

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[摘要] 目的:评估膀胱软镜联合尿道内切开镜会师治疗骨盆骨折术后尿道狭窄的临床疗效。方法:采用膀胱软镜联合尿道内切开镜会师治疗骨盆骨折术后尿道狭窄男性患者 12 例,中位年龄 33(19~54)岁。术前行尿道探子会师+尿道造影对狭窄部位和长度进行评估,经造瘘口置入膀胱软镜探及尿道内口,经尿道外口置入尿道内切开镜并调暗光源,在膀胱软镜光源引导下经尿道狭窄内切开后,并对手术时间、失血量、并发症进行记录。术后留置尿管 1 个月,拔除尿管后每月进行随访,术后 3 个月行尿道造影、尿流率及国际勃起功能指数问卷(IIEF)评分评估。结果:手术均获成功,手术时间(37±12)min,手术后血红蛋白较术前降低(4.5±2.3)g/L,拔除尿管后无尿失禁,术前术后 IIEF 评分无明显变化(12.4±6.6 vs 13.1±7.0, $P>0.05$)。随访 6~22 个月,9 例无需进一步处理,排尿正常;3 例拔除尿管后出现排尿困难和继发性尿道狭窄,给予每周 1 次尿道扩张,2 例连续 4 周、1 例连续 6 周尿扩后可置入 F₁₈ 尿道探子,排尿正常,术后 3 个月 Q_{max} 均在(16.2±5.8)ml/s 以上。结论:膀胱软镜联合尿道内切开镜会师治疗骨盆骨折术后尿道狭窄简便易行,创伤小,并发症少,近期及远期疗效满意,可作为骨盆骨折术后尿道狭窄的首选治疗方法。

[关键词] 尿道狭窄;骨盆骨折;膀胱软镜;尿道内切开镜

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Flexible cystoscope combined optic internal urethrotomy used in the treatment of urethral stricture secondary to pelvic fracture (Report of 12 cases)

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Abstract **Objective:** To evaluate the clinical treatment efficacy of urethral stricture secondary to pelvic fracture surgery using optic internal urethrotomy guided by flexible cystoscope. **Methods:** 12 patients undergoing suprapubic cystostomy after pelvic fracture at the median age 33 (ranger from 19 to 54) were retrospectively reviewed by certain criteria. Urethrogram and urethral sounds were used to determine the location and length of stricture before surgery. The internal urethrotomy was guided by flexible cystoscope which was inserted from the bladder fistula to the internal urethral orifice. The operation time, blood loss, and complication were recorded. Patients were followed every month after 1 month catheterized. The urethrogram, uroflowmetry, and IIEF was performed in 3 months postoperation. **Results:** All surgery succeeded. Operation time was (37±12)min, hemoglobin postoperation decrease was (4.5±2.3)g/L. All patients continence after remove catheter, the IIEF scores change unobviously between preoperation and postoperation [(12.4±6.6) vs (13.1±7.0), $P>0.05$]. The follow-up last from 6 to 22 months. 9 of 12 satisfied with their urination. Dysuria happened in 3 cases caused by secondary urethrostenosis. 2 patients urinate normally after 4 times and 1 patient for 6 times consecutively urethral dilatations (once a week), finally the F₁₈ urethral sound can be smoothly inserted. Their Q_{max} were all above (16.2±5.8)ml/s three months later. **Conclusions:** The optic internal urethrotomy guided by flexible cystoscope is easily to be performed, minimally invasive, few complication. The recently curative effect and longterm outcome is satisfactory. It is optimum option for urethral stricture after pelvic fracture.

Key words urethral stricture; pelvic fracture; flexible cystoscope; optic internal urethrotomy

后尿道狭窄、闭锁的主要原因是创伤性骨盆骨折造成后尿道损伤后的瘢痕所致或后尿道断裂错

位成角所致^[1]。其手术治疗一直是泌尿外科领域的难题之一,由于后尿道创伤模式多种多样,损伤情况各不相同,以及各医疗单位技术设备差异,因此在处理方法上仍存在争议^[2]。我院对 2008 年 5 月~2011 年 7 月收治的各类创伤性后尿道狭窄、闭

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锁患者 12 例均行膀胱软镜联合尿道内切开镜经尿道手术治疗,疗效满意,现报告如下。

1 资料与方法

1.1 临床资料

本组 12 例,均为男性,中位年龄 33(19~54)岁,均确诊为骨盆骨折所致尿道断裂。伤后无法自行排尿,一期已在外院行膀胱造瘘术,留置造瘘管时间为 2~29 周。入院后常规行尿细菌培养+药敏试验,阳性者 8 例,以大肠埃希氏杆菌等为主。根据药敏试验,术前给予抗生素治疗。术前均在 X 线介入下采用金属尿道探子“会师”,即远端尿道以 $F_{18\sim 20}$,近端自膀胱造瘘口以 $F_{16\sim 18}$ 进行“尿道会师”并正侧位摄片,观察后尿道闭锁段长度及尿道

成角情况(图 1)。5 例患者后尿道狭窄,狭窄段 $(0.7\pm 0.5)\text{cm}$;3 例患者尿道连续性消失,闭锁长度 1~2 cm;6 例患者断端成角畸形不明显。2 例患者有轻微成角畸形。临床资料详见表 1。

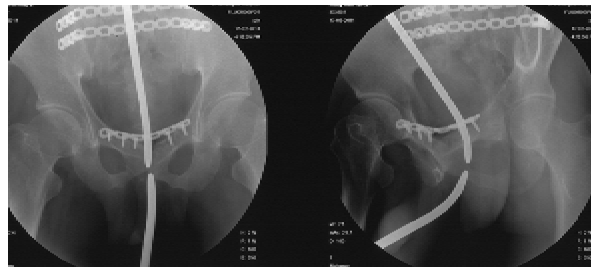


图 1 1 例后尿道断裂患者术前正、斜位“尿道会师”摄片显示狭窄长度与位置情况

表 1 12 例患者一般资料及主要观察指标

患者年龄/岁	术前留置造瘘管时间/周	后尿道狭窄及闭锁长度/cm	手术时间/min	术后血红蛋白减少/ $\text{g}\cdot\text{L}^{-1}$	术后随访时间/月	术后 $Q_{\max}$ / $\text{ml}\cdot\text{s}^{-1}$	术后再狭窄及处置	术前/术后 IIEF 评分
37	6	闭锁 2	35	4.2	18	18.2	N	18/17
22	2	狭窄 1	30	2.2	22	19.7	N	21/20
54	12	闭锁 1.5	40	4.0	14	10.1	尿道扩张 4 次	16/15
30	8	狭窄 0.5	30	3.3	10	17.5	N	22/21
31	4	狭窄 0.7	25	2.8	失访	失访	N	N
19	10	狭窄 1	28	2.5	14	17.8	N	18/18
29	29	狭窄 2	45	6.7	12	17.6	尿道扩张 4 次	20/19
25	9	闭锁 2	59	7.1	6	9.5	尿道扩张 4 次	20/15
31	6	狭窄 0.7	30	3.0	12	18.8	N	22/21
42	5	闭锁 1.5	45	4.4	12	11.4	N	18/18
22	10	狭窄 0.7	25	2.6	10	21.2	N	20/19
25	6	狭窄 1.0	25	2.2	6	17.0	N	20/20
2~29		1.7 ± 0.5	37 ± 12	4.5 ± 2.3	6~22	16.2 ± 5.8	13.3%	$P=0.19$

注:N—无进一步治疗

1.2 治疗方法

患者全麻,取截石位。拔除膀胱造瘘管,从膀胱造瘘口置入 F_{16} (Olympus instruments, Tokyo, Japan)可弯式膀胱软镜,用 0.9% NaCl 溶液冲洗(灌注压 $50\text{ cmH}_2\text{O}$),观察膀胱内情况,3 例患者发现膀胱内结石。沿膀胱颈口继续进镜至后尿道,遇到阻力时,停止进镜,观察闭锁段近端情况(图 2)。助手持镜,术者左手提起阴茎,向上伸直。Storz F_{22} 膀胱镜鞘表面涂以润滑剂,低压注水(灌注压 $35\sim 50\text{ cmH}_2\text{O}$),直视下沿尿道背侧缓缓插入尿道,轻轻向球部尿道推进至狭窄或闭锁远端。在 9 例患者中,降低膀胱镜光源亮度,术者均可以从狭窄的“孔穴”或闭锁黏膜远端看到膀胱软镜光源的投射(图 3),工作鞘内置入冷刀,在光源引导下冷刀沿 12、3、9 点处做 V 形切开,并向膀胱方向逐渐进镜,直至进入膀胱与膀胱软镜会师。3 例患者无法看到光源投射,在闭锁远端稍切开后均可以看到膀胱软

镜光源投射。4 例狭窄较明显患者及闭锁患者,加以电刀切除疤痕组织,退出内切开镜。助手将一安全导丝沿膀胱镜导入,将 $F_{20\sim 22}$ Foley 导尿管顶端戳孔,顺导丝置入,气囊注水固定。

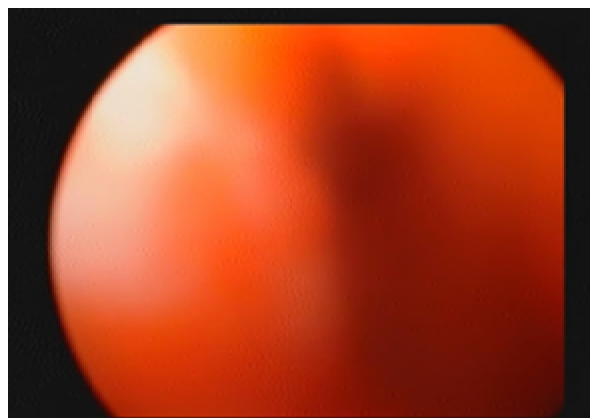


图 2 尿道镜观察膀胱软镜光源

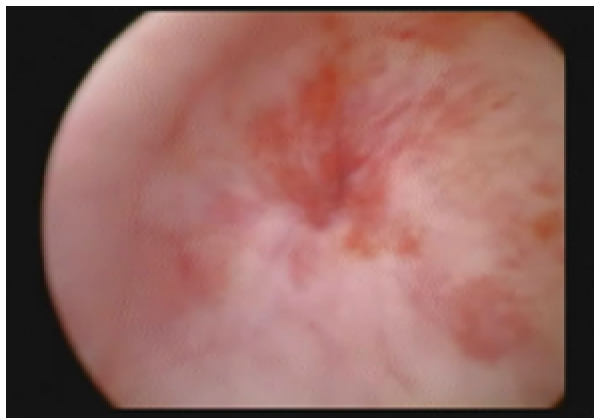


图3 膀胱软镜观察尿道狭窄近端情况

1.3 统计学处理

计量资料以均数±标准差($\bar{x} \pm s$)表示,应用SPSS18.0统计软件。采用两样本均数比较的 t 检验,以 $P < 0.05$ 为差异有统计学意义。

2 结果

12例患者手术均获得成功,手术时间(37 ± 12)min,手术后血红蛋白较术前降低(4.5 ± 2.3)g/L,均未输血。术后1例患者出现感染性休克。住院时间7~16d。留置尿管时间2~6周。留置尿管期间,3例患者膀胱痉挛及痛感明显,给予托特罗定对症处理后,症状缓解,拔除尿管后无尿失禁。术前术后国际勃起功能评分(IIEF)评分无明显变化(12.4 ± 6.6 vs 13.1 ± 7.0 , $P = 0.19$)。随访6~22个月,1例失访。9例无需进一步处理,尿流率正常;3例拔除尿管后出现排尿困难,术后复查尿道造影诊断为继发性尿道狭窄(图4),予每周一次尿道扩张,连续4周尿扩后可置入F₁₈尿道探子,排尿正常,术后3个月 Q_{max} 为(16.2 ± 5.8)ml/s。



图4 1例患者术后复查尿道造影

3 讨论

后尿道损伤相对少见^[3]。常见致伤原因为骨

盆骨折,4%~14%骨盆骨折伴有尿道损伤^[4]。其他原因包括骑跨伤以及医源性损伤,术中并发症假道形成,直肠瘘,术后短期、长期主要并发症包括尿道狭窄、阳痿、尿失禁,仍是泌尿外科医生面临的一大难题。在治疗的时机和方法上仍存在争议。对初发病例治疗的关键在于正确的诊断,对损伤的程度准确的评估,以及尽可能减少常见的术后并发症为目标^[5]。对于手术时机和方式的选择,国外20世纪20~60、70年代急诊行尿道端端吻合,尿道修补术是最流行的方式,因为有记载的尿道狭窄率较低(19%)。但由于术后阳痿发生率(56%),尿失禁(21%)较高,而被逐渐放弃^[6]。一期尿道会师牵引术1934年由Ormond最早报道,也是我国目前应用比较广泛的术式之一,但同样存在阳痿及远期尿道狭窄的并发症。自20世纪60年代开始,膀胱造瘘二期尿道修复成为国外比较流行的治疗方法,虽然降低了术后阳痿发生率及尿失禁发生率,但尿道狭窄的形成几乎达到100%^[7,8],相当一部分患者需要行尿道重建。随着内窥镜技术的发展,利用尿道、膀胱镜引导导丝置入尿管的会师术成为一种治疗后尿道狭窄、闭锁的新术式。由Herschorn等首先报道,对比膀胱造瘘二次修复明显降低了尿道狭窄发生率,由95.5%降至53.9%,需做尿道再成形术由89.4%降至23.2%。也同时降低了阳痿发生率由0~60%降至0~22%。国内由黑兰荪于1988首先报道,也取得了令人满意的初步疗效^[9]。目前认为这一术式的最佳手术时间是伤后2~3周,在血肿减少和瘢痕尚未完全形成前是手术最佳时机^[10]。

本组采用膀胱软镜联合尿道内切开镜会师术对12例骨盆骨折致后尿道狭窄的患者进行治疗,我们体会:①术中以膀胱软镜经由造瘘口进入膀胱,可以快速寻找尿道内口并到达狭窄、闭锁段近端,其光源可作为引导对内切开镜进行引导,有效避免假道和伤及周围组织。②由于应用可弯式膀胱软镜,以原造瘘口作为进镜入路,对周围组织创伤轻。术后恢复快,经过6~22个月随访,尿道狭窄发生率13.3%。无尿失禁发生,术前后性功能亦无明显变化。尿道狭窄经过尿道扩张现尿流率达到 Q_{max} 为(16.2 ± 5.8)ml/s。③病例的选择上,应选择狭窄及闭锁段较短、无明显畸形及多次尿道手术史的患者,我们的研究发现4例效果欠佳者均为闭锁段长于1.5cm的患者。④由于患者均为长期留置膀胱造瘘管,因此术前行尿常规、尿培养为必须检查项目,治疗全过程中应用敏感抗生素控制感染,术中冲洗灌注压35~50 cmH₂O可以维持清晰视野,过高灌注压可能导致创面周围或盆腔积液而成为潜在导致感染原因^[11]。

然而,因发病率较低,本研究也存在病例数较

少、缺乏长期随访的不足,有待临床样本的进一步积累和长期疗效观察。

综上所述,我们认为,目前在对骨盆骨折后尿道狭窄或闭锁段较短(<1.5 cm 者)的患者行膀胱软镜联合尿道内切开镜会师术,具有手术时间短、创伤轻微、恢复快的优点,术后可以取得满意的疗效。

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