

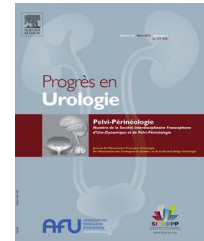


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ORIGINAL ARTICLE

# When to remove the urethral catheter after endoscopic realignment of traumatic disruption of the posterior urethra?

*Quand retirer le cathéter de l'urètre après le réalignement endoscopique de la rupture traumatique de l'urètre postérieur ?*

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## KEYWORDS

Urethra;  
Urethral disruption;  
Urethral realignment;  
Urethral stenting;  
Urethral stricture

## Summary

**Objective.** – To detect the optimal time for urethral stent removal after endoscopic urethral realignment and its effect on the incidence of development of urethral stricture.

**Patients and methods.** – Eighteen patients underwent endoscopic urethral realignment after traumatic disruption of the posterior urethra. Post-operative urethroscopy was done using the flexible cystoscope to assess progress of urethral healing. The urethral Foley catheter that served as a stent and for urine drainage was removed only when complete mucosal healing was observed by flexible urethroscopy. There was a post-operative follow-up period of 12–36 months. Uroflowmetry was performed at the end of the follow-up period.

**Results.** – Endoscopy 6 weeks after realignment showed 50–75% mucosal epithelialization at the site of urethral disruption in all patients. Epithelialization was complete at 9 weeks in 15/18 patients (83%) and at 12 weeks in the remaining 3 patients (17%). One patient (5.6%) developed a mild symptomatic stricture 5 months post stent removal that was successfully treated by a single session of visual urethrotomy. All 18 patients had normal uroflowmetry readings at 12–36 months after realignment.

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*Conclusions.* – Urethral stenting should be continued till mucosal healing at the site of urethral disruption became complete. Removal of the stent at this optimal time decreases the incidence of post-operative urethral stricture. Flexible urethroscopy was a safe procedure for post-operative follow-up of endoscopic urethral realignment to assess the progress and completion of mucosal healing at the site of realignment.

*Level of evidence.* – 4.

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## MOTS CLÉS

Urètre ;  
La rupture urétrale ;  
Le réalignement de l'urètre ;  
Le stent urétral ;  
Le rétrécissement de l'urètre

## Résumé

*Objectif.* – Déterminer le *timing* optimal pour l'ablation de la sonde vésicale après réalignement endoscopique de l'urètre et son effet sur l'incidence des sténoses.

*Patients et méthodes.* – Dix-huit patients ont subi un réalignement endoscopique de l'urètre après rupture traumatique de l'urètre postérieur. L'urethroscopie postopératoire a été réalisée en utilisant un cystoscope flexible pour évaluer l'évolution de la cicatrisation urétrale. Le cathéter de Foley urétral qui servait d'endoprothèse et de drainage de l'urine n'a été retiré que lorsque la guérison muqueuse complète avait été observée. Il y a eu une période de suivi postopératoire de 12 à 36 mois. Une débitmétrie a été réalisée à la fin de la période de suivi.

*Résultats.* – L'endoscopie 6 semaines après le réalignement a révélé une épithélialisation de la muqueuse de 50 à 75 % au site de rupture urétrale chez tous les patients. L'épithélialisation était complète à 9 semaines chez 15/18 patients (83 %) et à 12 semaines chez les 3 patients restants (17 %). Un patient (5,6 %) a développé une sténose symptomatique légère 5 mois après l'ablation de la sonde qui a été traitée avec succès par une seule uréthrotomie endoscopique. Tous les 18 patients ont eu des débit normaux à 12–36 mois après le réalignement.

*Conclusions.* – Le stent urétral doit être poursuivi jusqu'à ce que la cicatrisation de la muqueuse au site de rupture urétrale devienne complète. L'ablation de la sonde à ce moment optimal diminue l'incidence des sténoses urétrales post-opératoires.

*Niveau de preuve.* – 4.

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## Introduction

Endoscopic urethral realignment is a minimally invasive technique that was described for the early management of traumatic posterior urethral disruption [1–3]. In spite of its wide popularity, a high incidence of post-operative urethral stricture developed, sometimes exceeding 50% [2,4–8]. The high incidence was also reported after surgical urethral realignment [9].

The Foley catheter is commonly removed 3–6 weeks post-operatively when pericatheter retrograde urethrograms showed no evidence of extravasation [2,3,6–8,10,11]. In this study, endoscopic evidence of complete mucosal healing rather than pericatheter retrograde urethrography was the determining factor for selecting the optimal time of removal of the urethral catheter. The incidence of subsequent development of urethral stricture was assessed.

## Patients and methods

This retrospective study comprised 21 adult males (12–43 years old; mean = 26.3 years) who were presented

by traumatic urethral rupture and managed by endoscopic urethral realignment during the period from October 2008 till January 2016. The procedure was aborted in 3/21 patients for failure to establish endoscopic urethral realignment. The remaining 18 patients were included in the study. The patients were admitted from the Emergency Room with pelvic fractures and complete disruption of the prostatic-membranous urethra following road traffic accidents. Diagnosis was confirmed by retrograde urethrography.

Percutaneous suprapubic cystostomy was performed shortly after admission in all patients to relieve urine retention. Appropriate investigations were carried out to screen for possible associated injuries that were managed by the concerned medical teams. Endoscopic urethral realignment was performed under general anesthesia in 14 patients within 3 days from the date of admission. There was a delay of 5–8 days in 4 patients to control associated renal injury, liver injury and/or hemodynamic instability.

A flexible urethroscope was introduced along the distal urethra (retrograde flexible urethroscope) to visualize the proximal urethral end. If failed, identification of the proximal urethral segment was facilitated by injection of methylene blue in the bladder through the suprapubic catheter with attempt to follow the dye emerging from the

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