



Research Study

# Trial Without a Catheter Programme Improves Urological Management for Retention of Urine After Hip Fracture Surgery 「沒有導尿管試驗計劃」改善髖部骨折手術後出現瀰留尿的治理



Cheng Kin-Hung William <sup>a, b, \*</sup>, Chin Ping-Hong Raymond <sup>a, b</sup>

<sup>a</sup> Department of Orthopaedics and Traumatology, Queen Elizabeth Hospital, Kowloon, Hong Kong

<sup>b</sup> Orthopaedic Rehabilitation Center, Kowloon Hospital, Kowloon, Hong Kong

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## ABSTRACT

**Background:** Acute retention of urine (AROU) is commonly occurred in patients with geriatric hip fractures after surgeries. It is common that the catheters cannot be weaned off after insertion.

**Objectives:** We compared an approach using unified Trial Without Catheter (TWOC) protocol with non-unified management plans in patients with retention of urine after hip fracture surgery, to compare these approaches in terms of (1) rate of successful catheter removal, (2) duration required for successful catheter removal, (3) number of episodes of urinary tract infection, and (4) length of hospital stay.

**Methods:** We conducted a retrospective cohort study of 250 patients who failed to wean off a urinary catheter. 140 out of 1349 patients between December 2012 and September 2014 formed the intervention group (treated with unified TWOC protocol), and 110 out of 1193 patients between July 2006 and December 2008 were the control group (treated with different AROU management approaches). The efficiency and effectiveness of the urological management in both groups were compared.

**Results:** As expected, the rate of successful TWOC was higher in intervention group (before discharge, 68.6% versus 38.2%; after discharge, 20.0% versus 18.2%, overall, 88.6% versus 56.4%). Despite trial of weaning off urinary catheters, 16 patients in intervention group and 8 patients in control group failed with permanent catheter required. Forty patients in control group were discharged with permanently catheters without a trial of TWOC.

**Conclusion:** The TWOC program provides structured and standardized urological management for patients suffered from AROU after geriatric hip fracture surgeries. To reiterate, indwelling urethral catheters must not be placed permanently without carrying out urological assessment in patients with geriatric hip fractures.

## 中文摘要

**背景** 留置導尿管是常用於治理老年髖部骨折併發急性尿瀰留的方法。自2012年起,我們採用了一個多學科的臨床計劃(「沒有導尿管試驗計劃」, Trial Without a Catheter - TWOC), 以規範化急性尿瀰留的治理和之後拆除導尿管的後續處理。

**目標** 我們從(1)拆除導尿管的成功率,(2)成功拆除導尿管需要的時間,(3)尿道感染的發病率,以及(4)住院時間幾方面,來比較使用與不使用TWOC計劃的果效。

**方法** 我們回顧性研究了250個在髖部骨折手術後無法拆除導尿管的病人。當中140個病人(出自2012年12月和2014年9月之間接受手術的1349個患者)組成實驗組(使用TWOC計劃),另110個病人(出自2006年7月和2008年12月之間接受手術的1193個患者)組成對照組(不使用TWOC計劃)。

**結果** 實驗組擁有較高的拆除導尿管成功率(88.6%比56.4%,  $P < 0.001$ )。儘管使用TWOC計劃,16名患者需要使用永久性的導管。在對照組中有40例在出院時使用了永久性導管,而沒有嘗試拔除導尿管。

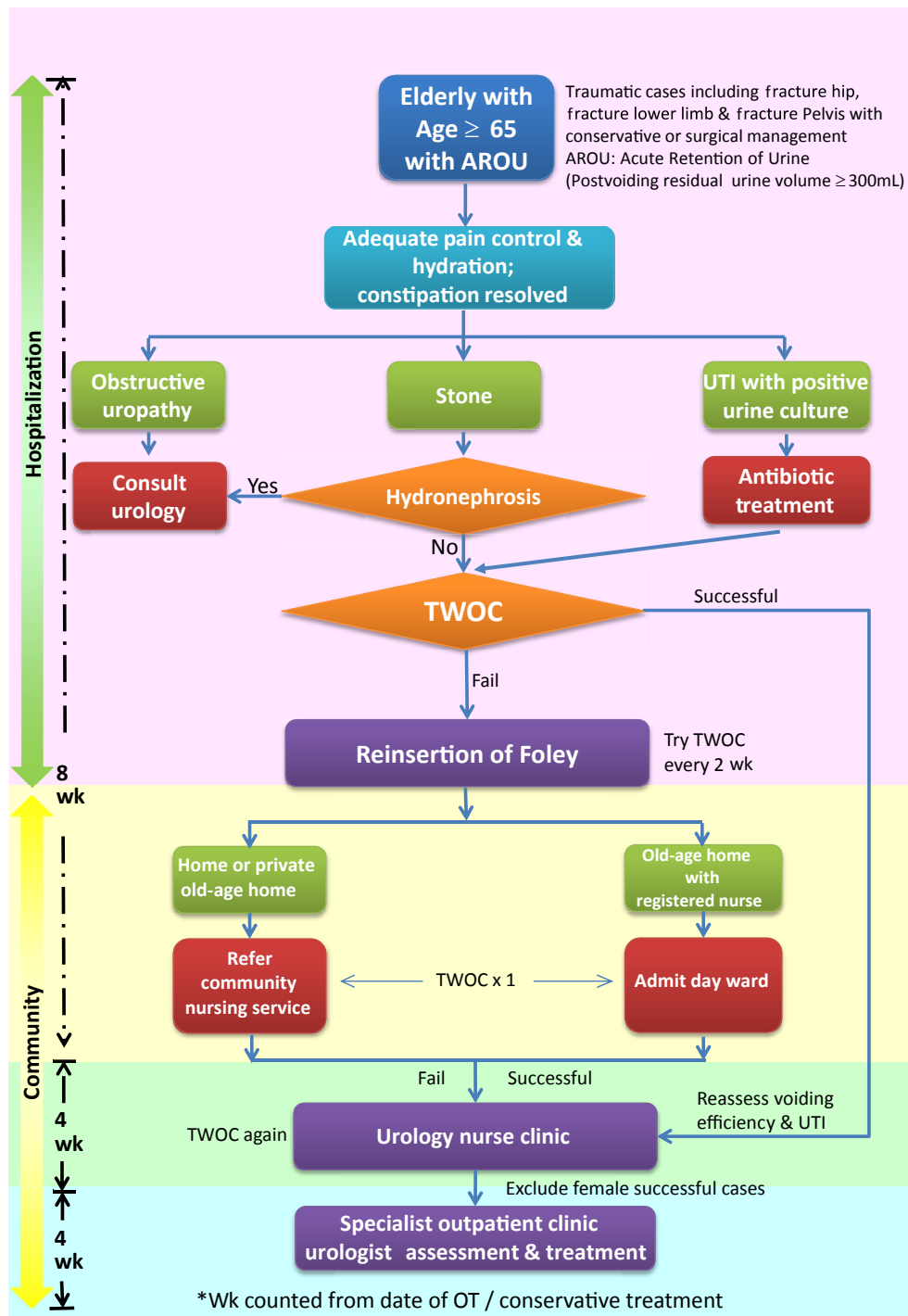
**討論和結論** TWOC計劃規範化了老年髖部骨折併發急性尿瀰留的處理。放置永久性的導尿管前應先由泌尿外科醫生作評估。

\* Corresponding author. E-mail: [wkcheng@hotmail.com](mailto:wkcheng@hotmail.com), [chengkhw@ha.org.hk](mailto:chengkhw@ha.org.hk).

## Introduction

Acute retention of urine (AROU) is one of the most common complications encountered during the acute and rehabilitation periods in patients suffering from geriatric hip fractures. It is usually treated by insertion of indwelling urethral catheters.<sup>1,2</sup> However, previous work has failed to define a standard for bladder management in patients with geriatric hip fractures.<sup>3</sup> The duration of keeping the catheter *in situ* and the time of accessing intervention from the urology team varies among patients in accordance

with the attending physician's judgement in our clinical setting. Sometimes, the catheters are placed permanently without an assessment by urologists. Unfortunately, AROU and the prolonged use of indwelling urethral catheters increase the risk of urinary tract infection (UTI)<sup>4</sup> and stone formation.<sup>5</sup> Moreover, the presence of indwelling urethral catheters increases the unwillingness of patients to return home or the reluctance of relatives to take patients home, leading to unnecessary stay in hospital.<sup>6,7</sup> Therefore, placing permanent indwelling urethral catheters in affected patients without urological treatment is a concern.



**Figure 1.** Trial without catheter programme model in O&T. AROU = acute retention of urine; O&T = orthopaedics and traumatology; TWOC = trial without catheter; UTI = urinary tract infection; OT = operation.

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