

First Place Essay Winners

8:00 - 8:30am Monday, 1st November, 2021

17 Ambulatory Tubeless Percutaneous Nephrolithotomy is Safe and Effective in Patients with Extended Selection Criteria

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Abstract

Objective: Ambulatory tubeless percutaneous nephrolithotomy (PCNL) has been shown to be safe and effective in highly selected patients. However, these selection criteria preclude the majority of patients that undergo PCNL. The objective of our study was to compare complication and stone free rates after ambulatory tubeless PCNL in standard selection criteria vs. extended criteria patients.

Methods: Retrospective review of prospective data on all patients who underwent ambulatory tubeless PCNL at one academic center from 2007-2018. Extended criteria patients were defined as one or more of: Age >75 years, BMI >30 kg/m², ASA >2, bilateral stones, solitary kidney, transplant kidney, complete staghorn calculi, stone burden >40 mm, multiple tracts, or prior nephrostomy tubes/stents. Primary outcomes were complication rates (Clavien-Dindo classification) and stone free rates (total residual stone burden <3 mm).

Results: We identified 118 patients of which 92 (78%) met extended criteria. Mean BMI was 31 kg/m² and 45% were ASA 3 or higher. Mean sum maximum stone diameter was 24 mm. Multiple stones were present in 25%, bilateral stones in 7%, complete staghorn stones in 4%, and pre-existing nephrostomy tubes/stents in 4%. There was no difference in complication (12% vs. 18%, p=0.56), Emergency department visit (12% vs 18%, p=0.56), or readmission (4% vs. 5%, p=1) rates between standard and extended criteria patients respectively. Of the complications, 85% were Clavien-Dindo grade 1. Stone free rates were not different between standard (84%) and extended (83%) criteria patients (p=1). No extended criteria variables were associated with complications in univariate analysis. Stone burden >40 mm (odds ratio [OR] 5.8, 95% confidence interval [CI] 1.4-25.2, p=0.018) and multiple tracts (OR 13.1, 95% CI 1.1-154.7, p=0.041) were associated with residual stone fragments in multivariable analysis.

Conclusions: Complication and stone free rates were not different between standard and extended selection criteria patients undergoing ambulatory tubeless PCNL. This data supports the safety and efficacy of ambulatory tubeless PCNL in patients using extended selection criteria.

Table 1. Outcomes were not different between standard and extended selection criteria patients who underwent ambulatory tubeless PCNL. Extended criteria were any of: Age >75 years, BMI >30, ASA >2, bilateral stones, solitary kidney, complete staghorn calculi, large stone burden (>40 mm), multiple tracts, or prior indwelling nephrostomy tubes/stents.

Outcomes	Standard Criteria N (%) N=26	Extended Criteria N (%) N=92	P
Stone free (<3 mm)	21/25 (84)	74/89 (83)	1
Hemoglobin drop >2 g/dL	3/21 (14)	2/85 (2)	0.052
Transfusions	0	0	-
Clavien-Dindo Grade			
Any	3 (12)	17 (18)	0.56
I	2 (8)	15 (16)	0.15
II	1 (4)	0	0.27
IIIa	0	0	-
IIIb	0	1 (1)	1
IV	0	1 (1)	1
Emergency department visit within 6 weeks of surgery	3 (12)	17 (18)	0.56
Stent colic	2 (8)	8 (9)	0.73
Hematuria	0	1 (1)	1
Urinary retention	0	4 (4)	0.56
Urinary tract infection	0	1 (1)	1
Cellulitis	0	1 (1)	1
Pyelonephritis	1 (4)	0	0.27
Pleural effusion	0	1 (1)	1
Non-ST elevation myocardial infarction	0	1 (1)	1
Readmission within 6 weeks of surgery	1 (4)	5 (5)	1
Stent colic	0	1 (1)	1
Hematuria	0	1 (1)	1
Urinary retention	0	1 (1)	1
Pyelonephritis	1 (4)	0	0.27
Pleural effusion	0	1 (1)	1
Non-ST elevation myocardial infarction	0	1 (1)	1

140 Adoption of Single-Use Clean Intermittent Catheterization Policies Do Not Appear to Effect Genitourinary Outcomes in a Large Spinal Cord Injury Cohort

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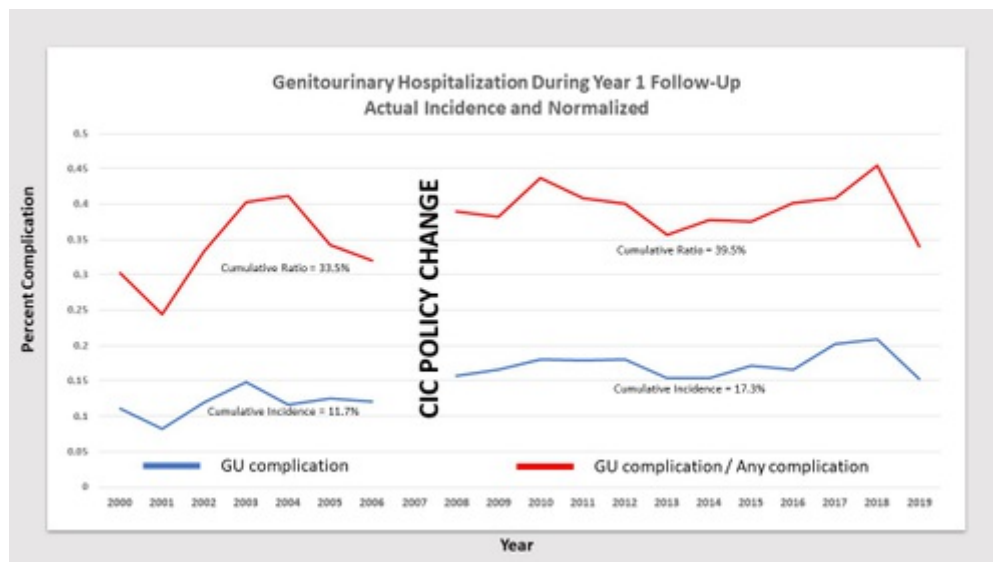
Abstract

Introduction - On April 1, 2008, Medicare amended their coverage policy for clean intermittent catheter (CIC), increasing coverage from 4 re-used catheters per month to up to 200 single-use catheters. The primary reason for the policy change was an assumed decrease in risk of urinary tract infection (UTI) with single-use catheters. Given a paucity of evidence to support this policy change, and the economic/environmental impact (~50-fold increase in cost and plastic waste), we evaluate its temporal effect on outcomes.

Methods -We accessed data for the years 1995 to 2020 from The National Spinal Cord Injury Database. We specifically focused on 1-year follow-up after discharge from acute rehabilitation in those unable to volitionally void after injury with two questions: 1) Did hospitalizations for genitourinary reasons decrease after the CIC policy change; and 2) Did CIC adoption and adherence increase after the CIC policy change?

Results - During the study period, of the 6843 SCI participants unable to volitionally void, 2657 (38.8%) were hospitalized during their first year of follow-up. Contrary to expectations, fewer individuals were hospitalized for genitourinary reasons in the cohort prior to the CIC policy change compared to after (11.7% versus 17.3%, $p < .001$), a finding that persisted on multivariate logistic regression (OR=1.58, $p < .001$). In addition, the overall number of individuals performing CIC at 1-year follow-up was less in the post-2008 cohort compared to the pre-2008 cohort (57.0% vs 59.1%, $p = .044$).

Conclusion - Our finding suggests the 2008 policy change shifting CIC coverage from catheter reuse to single-use did not yield its intended effects of decreased hospitalizations for genitourinary indications or increased CIC uptake. Considering the monetary and environmental impact of single use CIC, large multicenter randomized trials should be considered to drive future decision making and policy.



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