

# Is systematic early drainage relevant to treat urinary tract rupture in non-penetrating renal trauma?

## Results from a multicenter study

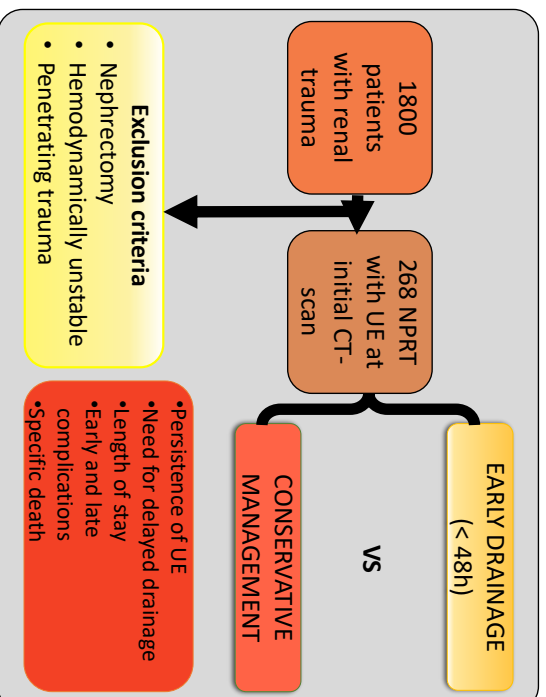
Chebbi A<sup>1</sup>, Giwerc A<sup>1</sup>, Peyronnet B<sup>2</sup>, Freton L<sup>2</sup>, Olivier J<sup>3</sup>, Langouet O<sup>4</sup>, Ruggiero M<sup>5</sup>, Dominique J<sup>6</sup>, Millet C<sup>7</sup>, Bergerat S<sup>8</sup>, Panayotopoulos P<sup>9</sup>, Betari R<sup>10</sup>, Matillon X<sup>6</sup>, Caes T<sup>3</sup>, Patard P<sup>11</sup>, Szabala T<sup>12</sup>, Brichart N<sup>4</sup>, Sabourin L<sup>7</sup>, Gulelyuz K<sup>12</sup>, Dariane C<sup>13</sup>, Lebacle C<sup>13</sup>, Rizk J<sup>13</sup>, Gryn A<sup>11</sup>, Madec F<sup>14</sup>, Hutin M<sup>15</sup>, Pradère B<sup>4</sup>, Pfister C<sup>1</sup>, Fiard G<sup>16</sup>, Nourhaud F-X<sup>14</sup>

<sup>1</sup>University of Rouen, Department of Urology, Rouen, France, <sup>2</sup>University of Rennes, Department of Urology, Rennes, France, <sup>3</sup>University of Lille, Department of Urology, Lille, France, <sup>4</sup>University of Tours, Department of Urology, Tours, France, <sup>5</sup>University of Paris XI, Department of Urology, Paris, France, <sup>6</sup>University of Lyon, Department of Urology, Lyon, France, <sup>7</sup>University of Clermont-Ferrand, Department of Urology, Clermont-Ferrand, France, <sup>8</sup>University of Strasbourg, Department of Urology, Strasbourg, France, <sup>9</sup>University of Angers, Department of Urology, Angers, France, <sup>10</sup>University of Amiens, Department of Urology, Amiens, France, <sup>11</sup>University of Toulouse, Department of Urology, Toulouse, France, <sup>12</sup>University of Caen, Department of Urology, Caen, France, <sup>13</sup>University of Paris V, Department of Urology, Paris, France, <sup>14</sup>University of Nantes, Department of Urology, Nantes, France, <sup>15</sup>University of Montpellier, Department of Urology, Montpellier, France, <sup>16</sup>University of Grenoble, Department of Urology, Grenoble, France

### Introduction and Objectives

Management of non-penetrating renal trauma (NPRT) associated with urinary tract rupture (AAST Grade IV-V) is not clearly codified regarding the usefulness of upper tract drainage with stent insertion. The aim of this study was to compare the outcomes of an early upper urinary tract drainage (ED) to a conservative management (CM) after a NPRT with a urinary extravasation (UE) at initial CT-scan assessment

### Material & Methods (2)



### Material & Methods (1)

A multicenter retrospective national study was conducted, including all patients treated for renal trauma in 17 centers from 2005 to 2015. Patients who had a urinary extravasation at the initial CT-scan assessment delayed phase were considered for inclusion. Penetrating traumas, hemodynamically unstable patients and those who were initially treated with nephrectomy were excluded. Patients were divided into 2 groups: ED defined by drainage of upper urinary tract of the injured kidney within the 48 hours following the admission and CM. The persistence of urinary extravasation at repeat CT-scan, the need for delayed drainage, length of stay, early and late complications, and specific death related to the current episode of trauma were analyzed

### Results

	Conservative Management † N = 199	Early Drainage N = 69	P Value
Age, years (median)	25	32	0.13
Male gender	158 (79)	54 (78)	0.97
Persistent UE at repeat CT			0.47
No	89 (64)	28 (71)	
Yes	50 (36)	11 (28)	
Urinary tract infection			0.34
No	134 (95)	38 (100)	
Yes	6 (5)	-	
Delayed nephrectomy			1.00
No	135 (96)	39 (97)	
Yes	5 (4)	1 (3)	
Delayed urinary drainage			0.04
No	117 (83)	39 (97)	
Yes	23 (17)	1 (3)	
Length of stay (days)	14	21	0.03
Death related to trauma			1.00
No	137 (98)	38 (100)	
Yes	3 (2)	-	
Late complications			0.22
No	109 (90)	28 (82)	
Hypertension	2 (2)	-	
Chronic kidney disease	1 (1)	1 (3)	
Others	8 (7)	5 (15)	

### Conclusion

Our results suggest that CM should be considered for the management of renal trauma associated with UE at the initial CT-assessment. CM was associated with good outcomes as 83% of the patients didn't required any drainage of their upper tract and the urinary extravasation at repeat CT was still present for 36% of the patients only. Initial clinical monitoring and repeat CT-scan to re-assess the urine leak might be useful and less invasive than a systematic ED