

# EFFICACY & SAFETY: MINI-PCNL VS STANDARD PCNL

TP Chang<sup>1</sup>, SL Tsang<sup>1</sup>, S Chun<sup>1</sup>, MSY Mak<sup>1</sup>, WPL Hung<sup>1</sup>, TF Wong<sup>1</sup>, HL Wong<sup>1</sup>, CF Tsang<sup>1</sup>, TCT Lai<sup>1</sup>, Y Na<sup>1</sup>, CH Cheng<sup>2</sup>, SK Chu<sup>2</sup>, BSH Ho<sup>1</sup>, ATL Ng<sup>1</sup>

1. Division of Urology, Department of Surgery, The University of Hong Kong, Queen Mary Hospital, Hong Kong  
2. Division of Urology, Department of Surgery, Tuen Mun Hospital, Hong Kong



## Objective:

- Percutaneous nephrolithotomy (PCNL) is performed for **renal stone >2 cm**
- Is mini PCNL a **safer alternative?**
- This study compared the efficacy and safety profiles of **mini PCNL** versus **standard PCNL**.

## Patients & Methods:

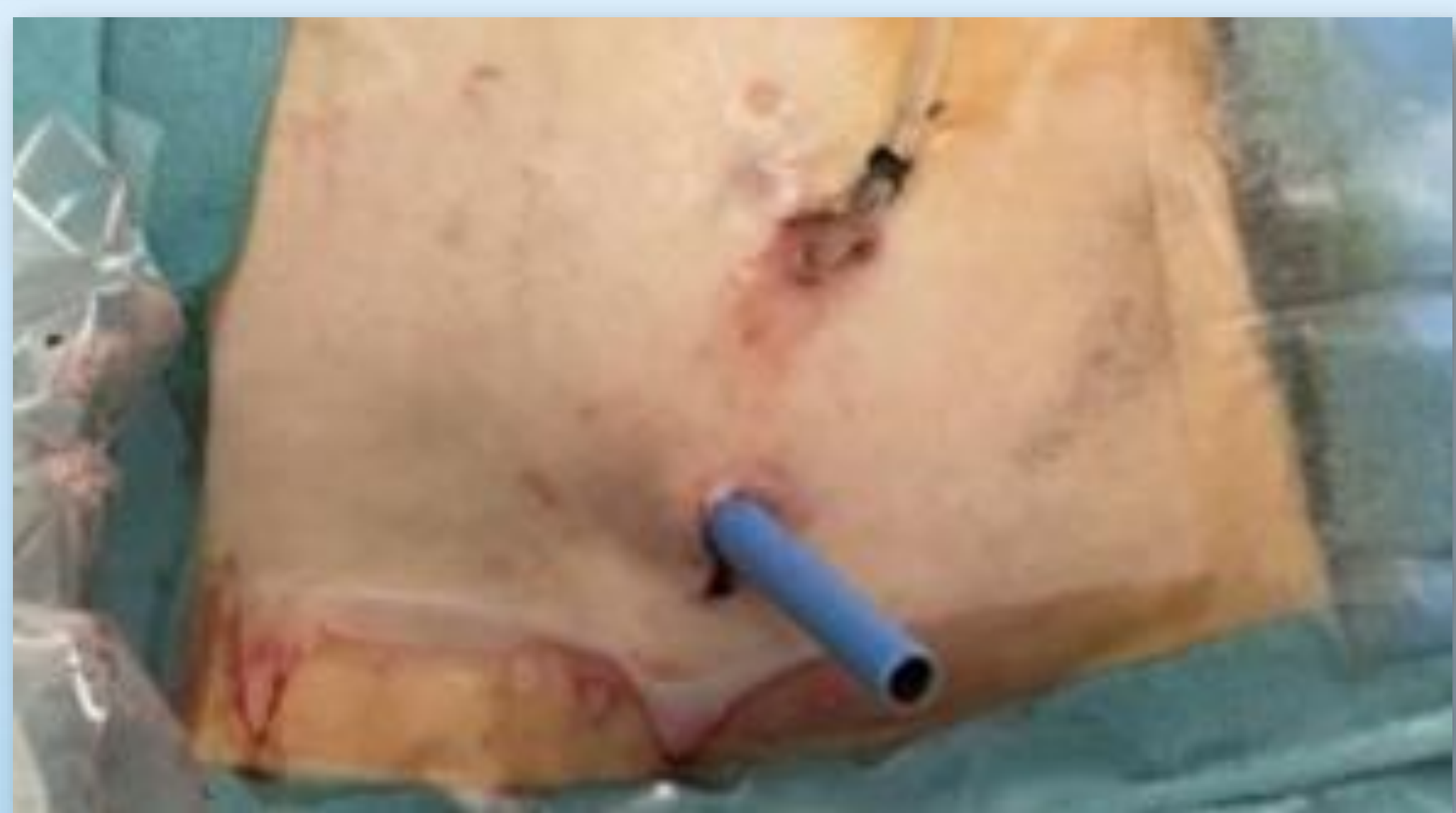
- **Multi-centre:** Queen Mary Hospital, Tung Wah Hospital, Tuen Mun Hospital, Pok Oi Hospital
- From January 2017 to March 2023
- **Stone size: <400 mm<sup>2</sup>**
- Analyzed patient demographics, stone and tract number and size, operative outcomes, and complications



Upper:  
Mini PCNL



Lower:  
Standard  
PCNL



## Results:

- Demographics were **comparable**.
- Mini PCNL has a smaller stone size.
- **Mini PCNL** showed a longer operation time (129 vs. 113 minutes, P<0.001) but a **shorter length of stay** (4.46 vs. 5.69 days, P 0.201).
- **Complication rate** was **lower** in mini PCNL (11.7% vs 17.3%, P 0.46) with less haemoglobin drop and creatinine change.
- **Stone-free rate** were **similar**. Residual stone was less in mini PCNL (10.6% vs 13.5%, P 0.514)

	Fr <22	Fr ≥22	P-value
Number	160	193	
Age	58.59	58.85	0.831
Stone max. diameter	18.35	20.65	<0.001
Stone size	179.9	220.9	<0.001

Table 1. Basic demographics of patients

	Fr <22	Fr ≥22	P-value
<b>OT time</b>	<b>128.48</b>	<b>113.13</b>	<b>&lt;0.001</b>
LOS	4.46	5.69	0.201
Complication rate	11.7%	17.3%	0.46
Fever	12.1%	14.6%	0.437
<b>Hb drop</b>	<b>0.92</b>	<b>1.24</b>	<b>0.01</b>
Cr change	2.97	4.21	0.472
Need of post op JJ stent	68.4%	25%	<0.001
Need of post op PCN	56.3%	95.7%	<0.001
Residual stone	10.6%	13.5%	0.514

Table 2. Efficacy & Safety profile: Mini vs Standard PCNL

## Conclusion:

- **Mini PCNL** is a reliable option to standard PCNL with **comparable effectiveness and safety**.