

## EDITORIAL COMMENT

## Future perspectives to improve outcomes associated with percutaneous nephrolithotomy for anterior calyceal stones: does ECIRS hold the answers?

Francesco ESPERTO<sup>1,2\*</sup>, Patrick JULIEBØ-JONES<sup>3,4</sup>, Etienne X. KELLER<sup>5</sup>, Thomas TAILLY<sup>6</sup>, Ioannis MYKONIATIS<sup>7</sup>, Vincent DE CONINCK<sup>8</sup>, Amelia PIETROPAOLO<sup>9</sup>, Michele TALSO<sup>10</sup>, Emre T. SENER<sup>11</sup>, Senol TONYALI<sup>12</sup>, Belthangady M. ZEESHAN HAMEED<sup>13</sup>, Eliodoro FAIELLA<sup>14</sup>, Rocco DAMIANO<sup>2</sup>, Rocco PAPALIA<sup>1</sup>, Roberto M. SCARPA<sup>1</sup>, on behalf of YAU Urolithiasis and Endourology Working Group

<sup>1</sup>Department of Urology, Campus Bio-Medico University, Rome, Italy; <sup>2</sup>Unit of Urology, Magna Graecia University of Catanzaro, Catanzaro, Italy; <sup>3</sup>Department of Urology, Haukeland University Hospital, Bergen, Norway; <sup>4</sup>Department of Clinical Medicine, University of Bergen, Bergen, Norway; <sup>5</sup>Department of Urology, University Hospital Zurich, University of Zurich, Zurich, Switzerland; <sup>6</sup>Department of Urology, University Hospitals Ghent, Ghent, Belgium; <sup>7</sup>School of Medicine, Department of Urology, Faculty of Health Sciences, Aristotle University of Thessaloniki, Thessaloniki, Greece; <sup>8</sup>Department of Urology, AZ Klina, Brasschaat, Belgium; <sup>9</sup>Department of Urology, University Hospital Southampton, Southampton, UK; <sup>10</sup>Department of Urology, ASST Fatebenefratelli-Sacco, Luigi Sacco University Hospital, Milan, Italy; <sup>11</sup>School of Medicine, Department of Urology, Marmara University, Istanbul, Turkey; <sup>12</sup>Istanbul School of Medicine, Department of Urology, Istanbul University, Istanbul, Turkey; <sup>13</sup>Department of Urology, Kasturba Medical College Manipal, Manipal Academy of Higher Education, Manipal, India; <sup>14</sup>Unit of Diagnostic Imaging, Campus Bio-Medico University, Rome, Italy

\*Corresponding author: Francesco Esperto, Department of Urology, Campus Bio-Medico University, Via Alvaro del Portillo 200, 00128 Rome, Italy. E-mail: francescoesperto@gmail.com

We read with great interest the recent study by Sahar *et al.* published in this issue of *Minerva Urology and Nephrology*, which highlights the impact of anterior calyceal stones (ACS) on the outcomes associated with percutaneous nephrolithotomy (PCNL) for the treatment of complex kidney stones.<sup>1</sup> The findings confirm that the presence of complex kidney stones with anterior calyceal extension are associated with higher residual stone rates in the anterior calyx, increased operative time, and multiple access as well as a higher hemoglobin drop post operatively. Of particular interest is the finding that when omitting ACS, stone free rate (SFR) is similar. Few studies in the literature have investigated the impact of ACS in PCNL before.<sup>2-4</sup> All procedures in this

retrospective study have been performed in the prone position. The aim of this study was to try to foster future perspectives and emerging ideas, which could light a spark for prospective trials delivering a more effective outcome for this special stone group. There exists great debate surrounding, which set up for PCNL truly stands in the “pole position” in this endourological Grand Prix, particularly in the setting of complex stones. The authors have cited the Astroza study,<sup>5</sup> which evaluates data from the Clinical Research Office of the Endourology Society (CROES) PCNL database collected between 2007-2009. Their results revealed higher SFRs, reduced operative time, and similar complication rates in the prone position during the treatment of complex stones,

which led to the conclusion of supporting the choice of prone rather than supine positioning for this particular cohort of patients. However, this timeframe precedes the study from Scarpa *et al.* about ECIRS (endoscopic combined intra-renal surgery) published in 2010.<sup>6</sup> It is therefore likely that the lower SFR reported in the Astroza study was due to the lack of ECIRS in the supine group. In 2017, Gokce *et al.*<sup>7</sup> compared prone and supine PCNL position for staghorn stones operated by a single experienced surgeon. Approximately, 70% of patients underwent ECIRS in the supine position. The findings highlighted similar SFRs with shorter operative times and lower drop in hemoglobin was found in the supine group. In 2021, a systematic review by Keller *et al.*<sup>8</sup> demonstrated that the efficacy of PCNL seems balanced between prone and supine position, with comparable overall SFR and shorter operative time in favor of supine PCNL. Safety of PCNL appears in favor of supine positioning, with lower fever rate. According with these results, it may be of interest to know if ECIRS allowing a direct access to the calices of interest may render a higher SFR and reduced complication rate. A randomized trial comparing prone and supine/ECIRS position for the treatment of complex renal stones involving ACS is warranted. Bleeding remains an important issue in PCNL. In conclusion, for complex kidney stones involving ACS, the use of tranexamic acid<sup>9, 10</sup> or the support of an optical system<sup>11</sup> to achieve optimal access may reduce bleeding and complications and may improve the outcomes in further studies. ACS treatment is undoubtedly challenging but ECIRS and improvements of the techniques may reduce its impact on the outcome of PCNL.

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*Conflicts of interest.*—The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

*Authors' contributions.*—All authors read and approved the final version of the manuscript.

*Comment on:* Sahan A, Dincer E, Özkaptan O, Cubuk A, Ertas K, Eryildirim B, Akca O, . The impact of anterior calyceal stones on the outcomes of percutaneous nephrolithotomy for complex kidney stones: a comparative study. *Minerva Urol Nephrol* 2021;73:815–22. DOI: 10.23736/S2724-6051.20.04002-3.

*History.*—Manuscript accepted: December 13, 2021. - Manuscript received: December 10, 2021.

*(Cite this article as:* Esperto F, Juliebø-Jones P, Keller EX, Tailly T, Mykoniatis I, De Coninck V, *et al.*; YAU Urolithiasis and Endourology Working Group. Future perspectives to improve outcomes associated with percutaneous nephrolithotomy for anterior calyceal stones: does ECIRS hold the answers? *Minerva Urol Nephrol* 2021;73:866–7. DOI: 10.23736/S2724-6051.21.04815-1)