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LETTER TO THE EDITOR

Standard, mini, ultra-mini, and micro percutaneous nephrolithotomy: what is next? A novel labeling system for percutaneous nephrolithotomy according to the size of the access sheath used during procedure

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The minimally invasive treatment of kidney stone has dramatically evolved in recent six decades. Goodwin et al. [1] have succeeded to perform the placement of a percutaneous nephrostomy tube in the presence of hydronephrosis in 1955. This procedure might be accepted as the first step of the percutaneous renal procedure. In the following years, Harris et al. [2] reported the percutaneous removal of kidney stone using a flexible bronchoscope. In 1976, Fernström and Johansson [3] defined the percutaneous pyelolithotomy technique through the nephrostomy. With the technological advances especially in endoscope and lithotripters and refinements in technique, percutaneous nephrolithotomy (PNL) has been regarded as the main treatment modality for large renal calculi [4].

The PNL procedure is simply based on creation of a proper percutaneous renal access, through the most appropriate part of the kidney (lower calix in most cases), dilation of this tract, and fragmentation and removal of the stone fragments using the nephroscope through the access sheath. Although different sizes of nephroscopes are used according to the tract size, the conventional or standard PNL procedure is generally performed through the 26–30 Fr access tract. Jackman et al. [5] defined the mini-perc technique in infants and preschool children. He used a miniaturized nephroscope through the 11 Fr peel-away vascular sheath. Today, the mini-perc or minimally invasive PNL is generally defined for the PNL procedure performed through the access tract <18 Fr. Besides the mini-perc and standard PNL, Desai et al. [6] defined the microperc that has the smallest size of the access tract (4.8 Fr). However, the authors have used 8 Fr micro sheath during microperc for moderate sized kidney stones [7]. And recently a new version of PNL procedure was presented in the 28th Annual EAU Congress in Milan: Ultra-mini PNL [8]. It seems that the terminology will be more complex in the future with the advances in different size of instruments. In addition, this situation might complicate to analyze the outcomes of the studies using different terminology in the size of PNL.

To overcome this problem we suggest using a novel labeling system for PNL procedure according to the size of the tract: PNL^{+size}. For example: PNL^{+20}, PNL^{+30}, PNL^{+12}, etc.

Conflict of interest The authors declare that they have no conflict of interest.

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