

## Perspective on Septic Obstructive Uropathy - Is there a Best Drainage Method?

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### Editorial

Septic Obstructive Uropathy is defined as an acute infectious illness, caused by uro-mechanical obstruction, usually urolithiasis, which requires prompt drainage and resuscitation. Broad-spectrum intravenous antibiotic treatment and fluids administration with hemodynamic monitoring are the mainstay of the initial treatment, though percutaneous drainage or retrograde ureteral stenting cannot be delayed. There is debate in the literature regarding the optimal way to divert the infectious urine, which may deteriorate to pyonephrosis and a potentially life-threatening situation. However there is a lack of high-quality literature in the field, and already existing studies are inconclusive regarding their results and include small sample of patients [1-4]. Drainage methods carry substantial differences: percutaneous nephrostomy placement, as opposed to ureteral stent insertion, requires skilled radiologist, which is not always available; blood thinners can be contraindication if not been pharmacology reversed and still, there is a small risk of bleeding from the nephrostomy tract or renal parenchyma; the patients should lie in the prone position, which can be a challenge in morbidly obese patients or with frail respiratory illness. On the other hand, the advantages are: visible and easily monitored kidney drainage, large bore tube, and avoiding manipulation to delicate and irritated ureter and ureteral orifice. Apart from the above-mentioned advantages, the procedure can be done with local anesthesia, allowing a rapid and safe decompression of the infected kidney.

Only few studies compared drainage methods [1-3]. A recent systematic review (Weltings et al.) tried to address this issue, focusing on several domains: indication for drainage, efficacy, hospitalization length and costs, drainage during pregnancy and quality of life and some other aspects [5]. He concluded that both percutaneous nephrostomy and ureteral stent share a comparable success rates, with a rare rate of procedure-related complications.

Even though both methods had a documented similar success rate, with fast and excellent recovery period, our perspective support that in severe cases with pyonephrosis, percutaneous should be the first choice of action. The ability to drain through a short wide bore is superior to ureteral stent. Since there is an accurate urine output assessment, a nephrostomy could provide a valuable functional information about the kidney. In the lack of high-quality evidence literature, some parameters should be considered when contemplating both draining methods. Distal, non-impacted stone, in the absence of prior ureteral manipulation, and a plan for ureteroscopy in a patient with no obstructing prostate, are the classic patient that will earn more from a ureteral stent. This patients' selection will allow a safe, easy and successful ureteral stent insertion, and prevent a need for conversion to percutaneous drainage.

Current guidelines do not favor one drainage method over the other. Percutaneous nephrostomy placement and ureteral stent insertion are "equally effective" (Level of evidence 1b; Rating strength: Strong) [6]. Urgent decompression of the collecting system in a case of septic obstructive uropathy, with any of both methods, is acceptable by European and American Association of Urology. The American Urology Association guidelines also support both methods (Strong Recommendation; Evidence Level Grade C), though, percutaneous drainage is preferred in unstable patients or in a patients with anatomically demanding ureter [7].

In conclusion, in the lack of high-quality evidence, our opinion tends to prefer percutaneous drainage in a hemodynamically unstable patient, suspected to have purulent, septic obstructive uropathy and especially in a large stone volume, single functioning kidney, difficult ureteral anatomy, and proximal stones. Distal stones, and an uncorrectable coagulopathy will favor ureteral stenting. Further well-designed studies will surely address this debatable important question.

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