

10. BÖLÜM SEMI-RİGİD ÜRETERORENOSKOPI

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Üreteroskopi, üreter ve üst üriner sistemin endoskopik olarak görüntülenmesi olarak tanımlanır. Üreteroskopi 1912 yılında Young' un posterior üretral valv (PUV) tedavisi esnasında bir sistoskop ile üreteri görüntülemesi ile başlamıştır(1). Goodman ve Lyon 1970' li yıllarda üreteroskopiye rutin kullanıma sunmuşlardır(2, 3). Zamanla daha ince üreteroskopların ve daha yüksek çözünürlüklü görüntüleme sistemlerinin geliştirilmesi ve özellikle Ho:YAG lazerin kullanıma girmesi taş tedavisinde önemli bir aşama olmuştur(4). Üreterorenoskopi (URS) üreter darlıkları, üreter patolojileri, üreter ve üst üriner sistem tümörleri tanı ve tedavilerinde kullanılabilirdiği gibi en yaygın olarak üreter taşı tedavilerinde kullanılmaktadır(5, 6).

Semi-rigid üreteroskopların gövde kısmı az miktarda eğilmesi nedeniyle manevra yapmaya izin vermektedir. Distal kısımları daha ince(6-7.5 Fr) olup proksimale gittikçe kalınlaşmaktadır(8-9.5 Fr). Gövde içerisinde irrigasyon sıvısının iletilmesi, lazer, pnomatik litotriptör, grasper ve basket gibi cihazların taşla ulaştırılabilmesi için bir çalışma kanalı mevcuttur(Resim – 1). Ayrıca ışık ve görüntü iletimini sağlamak için de fiberoptik demetler bulunur. Fleksibl üreteroskoplarla karşılaştırıldığında semi-rigid üreteroskoplar daha iyi bir görüş ve daha yüksek akımlı bir irrigasyon sağlarlar. Semi-rigid üreteroskoplar daha çok iliak çapraz altındaki taşlarda kullanılmakla beraber üreteroskopların incelenmesi ve lazer teknolojisi ile proksimal üreter taşlarının tedavisinde de kullanılmaya başlanılmıştır(4).

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KAYNAKLAR

1. Young HH MR. Congenital Valvular obstruction of the prostatic urethra. *Surg Gynecol Obstet.* 1929(48):509.
2. Goodman TM. Ureterscopy with pediatric cystoscope in adults. *Urology.* 1977;9(4):394.
3. Lyon ES, Kyker JS, Schoenberg HW. Transurethral ureteroscopy in women: a ready addition to the urological armamentarium. *J Urol.* 1978;119(1):35-6.
4. Liu DY, He HC, Wang J et al. Uretoscopic lithotripsy using holmium laser for 187 patients with proximal ureteral stones. *Chin Med J (Engl).* 2012;125(9):1542-6.
5. Lucas JW, Ghiraldi E, Ellis J et al. Endoscopic Management of Ureteral Strictures: an Update. *Curr Urol Rep.* 2018;19(4):24.
6. Smith RK, Smith P, Pridgeon S. Biopsy of ureteric lesions using a semi-rigid ureteroscope through a ureteric access sheath. *Ann R Coll Surg Engl.* 2018;100(5):420-1.
7. Segura JW, Preminger GM, Assimos DG et al. Ureteral Stones Clinical Guidelines Panel summary report on the management of ureteral calculi. The American Urological Association. *J Urol.* 1997;158(5):1915-21.
8. Bultitude M, Smith D, Thomas K. Contemporary Management of Stone Disease: The New EAU Urolithiasis Guidelines for 2015. *Eur Urol.* 2016;69(3):483-4.
9. Kaygisiz O, Coskun B, Kilicarslan H et al. Comparison of ureteroscopic laser lithotripsy with laparoscopic ureterolithotomy for large proximal and mid-ureter stones. *Urol Int.* 2015;94(2):205-9.
10. Turk C, Petrik A, Sarica K et al. EAU Guidelines on Interventional Treatment for Urolithiasis. *Eur Urol.* 2016;69(3):475-82.
11. Youssef RF, El-Nahas AR, El-Assmy AM et al. Shock wave lithotripsy versus semirigid ureteroscopy for proximal ureteral calculi (<20 mm): a comparative matched-pair study. *Urology.* 2009;73(6):1184-7.
12. Perez Castro E, Osther PJ, Jinga V et al. Differences in ureteroscopic stone treatment and outcomes for distal, mid-, proximal, or multiple ureteral locations: the Clinical Research Office of the Endourological Society ureteroscopy global study. *Eur Urol.* 2014;66(1):102-9.
13. Parker BD, Frederick RW, Reilly TP et al. Efficiency and cost of treating proximal ureteral stones: shock wave lithotripsy versus ureteroscopy plus holmium:yttrium-aluminum-garnet laser. *Urology.* 2004;64(6):1102-6; discussion 6.
14. Salem HK. A prospective randomized study comparing shock wave lithotripsy and semirigid ureteroscopy for the management of proximal ureteral calculi. *Urology.* 2009;74(6):1216-21.
15. Aghamir SK, Mohseni MG, Ardestani A. Treatment of ureteral calculi with ballistic lithotripsy. *J Endourol.* 2003;17(10):887-90.
16. Sofer M, Watterson JD, Wollin TA et al. Holmium:YAG laser lithotripsy for upper urinary tract calculi in 598 patients. *J Urol.* 2002;167(1):31-4.
17. Zeng GQ, Zhong WD, Cai YB et al. Extracorporeal shock-wave versus pneumatic ureteroscopic lithotripsy in treatment of lower ureteral calculi. *Asian J Androl.* 2002;4(4):303-5.
18. Wiesenthal JD, Ghiculete D, RJ DAH et al. Evaluating the importance of mean stone density and skin-to-stone distance in predicting successful shock wave lithotripsy of renal and ureteric calculi. *Urol Res.* 2010;38(4):307-13.
19. Türk C SA, Neisius A, Petřík A, Seitz C, Thomas K. EAU Guidelines on on Urolithiasis. EAU Guidelines. Edn. presented at the EAU Annual Congress Barcelona 2019. ISBN 978-94-92671-04-2. <https://uroweb.org/wp-content/uploads/EAU-Guidelines-on-Urolithiasis-2019.pdf>
20. Watterson JD, Girvan AR, Cook AJ et al. Safety and efficacy of holmium: YAG laser lithotripsy in patients with bleeding diatheses. *J Urol.* 2002;168(2):442-5.
21. Sharaf A, Amer T, Somani BK et al. Ureterscopy in Patients with Bleeding Diatheses, Anticoagulated, and on Anti-Platelet Agents: A Systematic Review and Meta-Analysis of the Literature. *J Endourol.* 2017;31(12):1217-25.
22. Srirangam SJ, Hickerton B, Van Cleynenbreugel B. Management of urinary calculi in pregnancy: a review. *J Endourol.* 2008;22(5):867-75.

23. Lu Z, Dong Z, Ding H et al. Tamsulosin for ureteral stones: a systematic review and meta-analysis of a randomized controlled trial. *Urol Int.* 2012;89(1):107-15.
24. Biyani CS, Joyce AD. Urolithiasis in pregnancy. II: management. *BJU Int.* 2002;89(8):819-23.
25. Laing KA, Lam TB, McClinton S et al. Outcomes of ureteroscopy for stone disease in pregnancy: results from a systematic review of the literature. *Urol Int.* 2012;89(4):380-6.
26. Semins MJ, Trock BJ, Matlaga BR. The safety of ureteroscopy during pregnancy: a systematic review and meta-analysis. *J Urol.* 2009;181(1):139-43.
27. D'Addessi A, Bassi P. Ureterorenoscopy: avoiding and managing the complications. *Urol Int.* 2011;87(3):251-9.
28. Ono Y, Ohshima S, Kinukawa T et al. Long-term results of transurethral lithotripsy with the rigid ureteroscope: injury of intramural ureter. *J Urol.* 1989;142(4):958-60.
29. Bernhard PH, Reddy PK. Retrograde ureteral intussusception: a rare complication. *J Endourol.* 1996;10(4):349-51.
30. Jeromin L, Sosnowski M. Ureteroscopy in the treatment of ureteral stones: over 10 years' experience. *Eur Urol.* 1998;34(4):344-9.
31. Degirmenci T, Gunlusoy B, Kozacioglu Z et al. Comparison of Ho:YAG laser and pneumatic lithotripsy in the treatment of impacted ureteral stones: an analysis of risk factors. *Kaohsiung J Med Sci.* 2014;30(3):153-8.
32. Hofbauer J, Hobarth K, Marberger M. Electrohydraulic versus pneumatic disintegration in the treatment of ureteral stones: a randomized, prospective trial. *J Urol.* 1995;153(3 Pt 1):623-5.
33. Kassem A, Elfayoumy H, Elsaied W et al. Laser and pneumatic lithotripsy in the endoscopic management of large ureteric stones: a comparative study. *Urol Int.* 2012;88(3):311-5.
34. Song T, Liao B, Zheng S et al. Meta-analysis of postoperatively stenting or not in patients underwent ureteroscopic lithotripsy. *Urol Res.* 2012;40(1):67-77.
35. Liguori G, Antonioli F, Trombetta C et al. Comparative experimental evaluation of guidewire use in urology. *Urology.* 2008;72(2):286-9; discussion 9-90.
36. Holley PG, Sharma SK, Perry KT et al. Assessment of novel ureteral occlusion device and comparison with stone cone in prevention of stone fragment migration during lithotripsy. *J Endourol.* 2005;19(2):200-3.
37. Mirabile G, Phillips CK, Edelstein A et al. Evaluation of a novel temperature-sensitive polymer for temporary ureteral occlusion. *J Endourol.* 2008;22(10):2357-9.