Bölüm 1

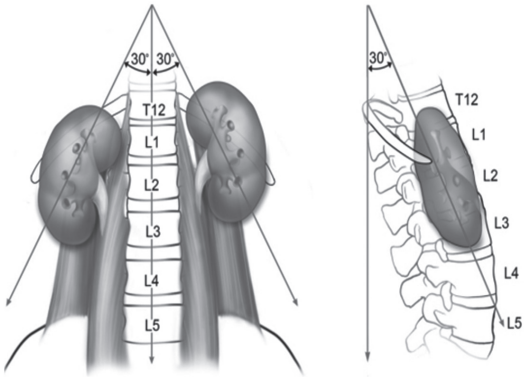
BÖBREK ve ÜRETER TRAVMALARI

Rahmi ASLAN

Giriş

Böbrek anatomisi

Böbrekler, retroperitonda bulunan ve insan vücudunun en iyi korunan organlarından biridir. Karaciğerin mevcudiyeti nedeniyle sağ böbrek sola göre daha aşağıdadır. Böbrekleri kalın bir yağ tabakası ve bu tabakanın altında bulunan gerota fasyası sarar. Gerota fasyası ön tarafta periton zarına yapışıktır. Böbreklerin ağırlığı yaklaşık 150 gr'dır, boyutları ise yaklaşık 12x6x3 cm'dir. Sağ böbreğin üst komşuluğunda adrenal bez, ön komşuluğunda karaciğer, duodenum, vena kava inferior (VKİ) ve alt kısımda çıkan kolon bulunur. Sol böbrek üstte adrenal bez, dalak, hilum bölgesinde pankreas kuyruğu, ön üstte jejunum ve inen kolonla komşudur. [1-3] (şekil 1-2)



ŞEKİL 1-2 (Campbell üroloji 9. baskı)

KAYNAKLAR

1. Anafarta K, Göğüş O, Bedük Y, Arıkan N .(1998). Temel Üroloji. Ankara: Güneş Kitapevi.
2. Muslumanoglu AY, Esen T, Tefekli A (2007). Üriner Sistem Taş Hastalıkları. İstanbul: Nobel Tıp Kitabevi.
3. Eisenberger F, Miller K, Rassweiler J.(1991). Stone therapy in urology, New York: Thieme Medical Publishers Inc.
4. Hopper KD, Yakes WF. The posterior intercostal approach for percutaneous renal procedures: Risk of puncturing the lung, spleen and liver as determined by CT: AJR 1990;154:115-117,
5. Anafarta K, Baykara M, Baydinç C. (1998). Temel Üroloji. Ankara: Güneş Kitapevi.
6. Elhan A, Arıncı K. (2001). Anatomi(3.baskı). Ankara: Güneş Kitapevi,
7. Kabalin JN. Surgical anatomy of the retroperitonium, kidneys and ureters. In: Walsch PC, Retic AB, Vaughan ED, Wein AJ.(eds), Campbells Urology. Philadelphia. 2002; 3-40.
8. Kaya C, Koca O, Kalkan S, et al. Evaluation of patients with urogenital trauma managed in a urology clinic. Ulusal Travma Acil Cerrahi Dergisi 2009;15(1):67-70.
9. Büyükçam F, Şen J, Akpınar Ş, et al. Evaluation of urogenital injuries in patients with trauma in the Emergency Department. Ulusal Travma Acil Cerrahi Dergisi 2012;18(2):133-140.
10. Baverstock R, Simons R, McLoughlin M. Severe blunt böbrek trauma: a 7-year retrospective review from a provincial trauma centre. Can J Urol 2001;8(5):1372-1376.
11. Peterson NE. Genitourinary trauma. In: Feliciano DV, Moore EE, Mattox KL, editors. Trauma. 3rd edition. Stanford, CT: Appleton and Lange; 1996. p. 661-93. 8
12. Morey AF, Dugi DD. Genital and Lower Urinary Tract Trauma In:Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA. CampbellWalsh Urology. 10th ed. Philadelphia: Saunders Elsevıer; 2012.p 2495-509.
13. Palmer LS, Rosenbaum RR, Gershbaum MD, et al. Penetrating ureteral trauma at an urban trauma center: 10- year experience. Urology 1999;54(1):34-36.
14. Sangthong B, Demetriades D, Martin M, et al. Management and hospital outcomes of blunt böbrek artery injuries: analysis of 517 patients from the National Trauma Data Bank. J Am Coll Surg 2006;203(5):612-617
15. Sarıkaya S, Kadıoğlu A (2016). Türkiye Esru Asistan El Kitabı. İstanbul: İstanbul Tıp Kitapevi. .
16. Summerton DJ, Djakovic N, Kitrey ND, et al. Guidelines on Urological Trauma. European Association of Urology. 2015: 1-60.
16. Lindsey D: The idolatry of velocity, or lies, damn lies, and ballistics. J Trauma, 1980; 20: 1068–1069.
17. Santucci RA, and Chang Y: Ballistic for physicians: myths about wound ballistic and gunshot injuries. J Urol, 2004; 171:1408–1414
18. American Collage of Surgeons Committee on Trauma. Advanced Trauma Life Support for Doctors. Chicago: American College of Surgeons
19. Kuan JK, Wright JL, Nathens AB, et al. American Association for the Surgery of Trauma Organ Injury Scale for kidney injures predicts nephrectomy, diialysis, and death in patients with blunt injury and nephrectomy for penetrating injuries. J Trauma 2006;60:351–6.

20. Srinivasa RN, Akbar SA, Jafri SZ et al. Genitourinary trauma: a pictorial essay. Emerg Radiol 2009, 16(1):21–33.
21. Kong JPL, Bultitude MF, Royce P, et al., Lower urinary tract injuries following blunt trauma: a review of contemporary management. Rev Urol, 2011; 13 (3): 119-130.
22. Brown SL, Hoffman DM, Spirnak JP. Limitations of routine spiral computerized tomography in the evaluation of blunt renal trauma. J Urol 1998; 160:1979-1981.
23. Morey AF, Brandes S, Dugi DD, Urotrauma: AUA guideline J Urol 2014;192(2):327-335
24. Velmahos GC, Constantinou C, Tillou A, et al. Abdominal computed tomographic scan for patients with gunshot wounds to the abdomen selected for nonoperative management. J Trauma 2005;59:1155–60
25. Kuvel M, Aydemir H, Balaban M, et al. How should urologic approach be to renal trauma? Turkish Journal of Urology 2009;35(1):38-42.
26. Santucci RA, Mc Aninch JM. Grade IV renal injuries: evaluation, treatment, and outcome. World J Surg 2001;25:1565–72.
27. Sujenthiran A, Elshout PJ, Veskmae E, et al. Is Nonoperative Management the Best Frst-line Option for High-grade Renal trauma? A Systematic Review. Eur Urol Focus. 2017; 29(17): 30117-7. do: 10.1016/j.euf.2017.04.011.
28. Segalini E, Birindelli A, Di Saverio S. Comparison of nonoperative and surgical management of renal trauma. J Trauma Acute Care Surg. 2017;27. do:10.1097/TA.0000000000001542.
29. Nuss GR, Morey AF, Jenkins AC, et al. Radiographic predictors of need for angiographic embolization after traumatic renal injury. J Trauma 2009;67:578– 82
30. Hotaling JM, Sorensen MD, Thomas G, et al. Analysis of diagnostic angiography and angioembolization in the acute management of renal trauma using a national data set. J Urol 2011;185:1316–20
31. McAninch JW, Carroll PR. Renal exploration after trauma: indications and reconstructive techniques. Urol Clin North Am 1989; 16:203-212.
32. Nash PA, Bruce JE, McAninch JW. Nephrectomy for traumatic renal injuries. J Urol 1995; 153:609-611.
33. Goldblatt H, Lynch J, Hanzal RF, et al. Studies on experimental hypertension. J Exp Med 1934; 59:347-352.
34. Evans LA, Morey AF. Hemostatic agents and tissue glues in urologic injuries and wound healing. Urol Clin North Am 2006; 33:1-12.
35. Busch FM, Chenault Jr OW, Zinner NR, et al. Urological aspects of Vietnam War injuries. J Urol 1967; 97:763-765.
36. Medina D, Lavery R, Ross SE, et al. Ureteral trauma: preoperative studies neither predict injury nor prevent missed injuries. J Am Coll Surg 1998; 186:641-644.
37. Presti Jr JC, Carroll PR, McAninch JW. Ureteral and renal pelvic injuries from external trauma: Diagnosis and management. J Trauma 1989; 29:370-374.
38. Al-Awadi K, Kehinde EO, Al-Hunayan A, et al. Iatrogenic ureteric injuries: incidence, aetiological factors and the effect of early management on subsequent outcome. Int Urol Nephrol 2005; 37:235-241.
39. Sugarbaker PH, Gutman M, Verghese M. Transureteroureterostomy: an adjunct to the management of advanced primary and recurrent pelvic malignancy. Int J Colorectal Dis 2003; 18:40-44.

40. Araki T. Endovascular treatment of ureteroarterial fistulas with stent-grafts. Radiat Med 2008; 26:372-375
41. Kaufman J. Ureteral injury from ureteroscopic stone manipulation. Urology 1984; 23:267-269.
42. Chang R, Marshall FF. Management of ureteroscopic injuries. J Urol 1987; 137:1132-1135.
43. Fuganti PE, Pires S, Branco R, et al. Predictive factors for intraoperative complications in semirigid ureteroscopy: Analysis of 1235 ballistic ureterolithotripsies. Urology 2008; 72:770-774.
44. Johnson DB, Pearle MS. Complications of ureteroscopy. Urol Clin North Am 2004; 31:157- 171.
45. Kriegmair M, Schmeller N. Paraureteral calculi caused by ureteroscopic perforation. Urology 1995; 45:578-580
46. Azimuddin K, Milanesa D, Ivatury R. Penetrating ureteric injuries. Injury 1998; 29:363- 367.
47. Palmer LS, Rosenbaum RR, Gershbaum MD, et al. Penetrating ureteral trauma at an urban trauma center: 10-year experience. Urology 1999; 54:34-36.
48. Bright TC, Peters PC. Ureteral injuries due to external violence: 10 years experience with 59 cases. J Trauma 1977; 17:616-620.
49. Steers WD, Corriere Jr JN, Benson GS, et al. The use of indwelling ureteral stents in managing ureteral injuries due to external violence. J Trauma 1985; 25:1001-1003.
50. Verduyckt FJ, Heesakkers JP, Debruyne FM. Long-term results of ileum interposition for ureteral obstruction. Eur Urol 2002; 42:181-187.
51. Bonfig R, Gerharz EW, Riedmiller H. Ileal ureteric replacement in complex reconstruction of the urinary tract. BJU Int 2004; 93:575-580.
52. Ali-el-Dein B, Ghoneim MA. Bridging long ureteral defects using the Yang-Monti principle. J Urol 2003; 169:1074-1077.