BÖLÜM 10

PELVİS KIRIKLARINDA GÜNCEL TANI-TEDAVİ YAKLAŞIMI

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GİRİŞ

Genç hastalardaki deplase pelvik halka kırıkları yüksek enerjili yaralanmalar sonrasında meydana gelir. Vakaların %60'lık kısmı motorlu araç kazaları sonrasında, %30'luk kısmı yüksekten düşmeler sonrası, %10'luk kısmı ise ezilme yaralanmaları sonrasında meydana gelmektedir (1). Deplase pelvik halka kırıkları yüksek enerjili yaralanmalar sonrası meydana geldiği için sıklıkla yaşamı tehdit eden diğer yaralanmalar eşlik etmektedir. Son yıllardaki tıptaki gelişmeler ile birlikte pelvik yaralanma sonrası ölüm oranları düşmüş olsada, yüksek hızlı motorlu araç kazalarının görülme sıklığının artması ve bu kazalardan sonra sağkalım oranlarının artması nedeniyle pelvis kırığı insidansı artmaktadır (2). Pelvik kırıklar sonrası hem kemik parçalardaki venöz ve arterial damarlardan direk kanama ve hem de kırık fragmanların arterial ve venöz yapıları kesmesi nedeni ile meydana gelen kanamalar sonucunda ölüm riski artmaktadır (3). Deplase pelvis kırıklarından sonra mortalite çoğunlukla pelvis hacmini arttıran antero-posterior (AP) ve vertikal shear yaralanmalarından sonraki kanamalara bağlı artmış olsada, lateral kompresyon kırıkları sonrası ilişkili yaralanmalar nedeniylede oluşabilmektedir (4–7). Eksternal fiksatör veya pelvik kemer/çarşaf pelvisi stabilize ederek venöz kanamayı tamponlayabilir ancak hemodinamiği etkileyen arterial kanalarda genellikle etkisizdirler. Hemodinamik olarak önemli arteriyel kanaması olan hastalarda ya embolizasyon ya da intrapelvik tampon gerekir (8). Ürogenital, lumbosakral pleksus ve eşlik eden uzun kemik kırıkları pelvis kırıklarıyla beraber bulanabilir (5,9). Hastaların pelvis kırıklarına sistematik bir yaklaşım ile hızlı ve doğru bir şekilde tanı konması ve hızlı müdehalede bulunulması kritik öneme sahiptir (10,11)

ANATOMİ

Pelvik yapı omurgadan gelen yükleri alt ekstremitelere aktaran yapıdır (12). Pelvis, ürogenital ve dişi üreme organlarını, iç iliak damarları ve bunların dallarını ve ayrıca lumbosakral pleksus dahil olmak üzere çok çeşitli sinirleri içerir (13).

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Young ve Burgess sınıflandırma sisteminin anlaşılması, pelvik halka yaralanmalarını daha iyi değerlendirmeyi sağlayarak, görüntülemesi zor olan yaralanmaları farkedilmesine yardımcı olur ve bu yaralanmalarla ilişkili olabilecek kas-iskelet sistemi ve iç organ hasarlanmalarını saptamak için daha farklı görüntüleme yöntemlerine yönlendirebilir.

KAYNAKLAR

1. Schmal H, Markmiller M, Mehlhorn AT, Sudkamp NP. Epidemiology and outcome of complex pelvic injury. Acta Orthop Belg 2005;71(1):41–47.
2. McCormack R, Strauss EJ, Alwattar BJ, Tejwani NC. Diagnosis and management of pelvic fractures. Bull NYU Hosp Jt Dis 2010;68(4):281–291.
3. Ben-MenachemY, Coldwell DM,Young JW, Bur – gess AR. Hemorrhage associated with pelvic fractures: causes, diagnosis, and emergent management. AJR Am J Roentgenol 1991;157(5):1005–1014.
4. White CE, Hsu JR, Holcomb JB. Haemodynamically unstable pelvic fractures. Injury 2009;40(10): 1023–1030.
5. Durkin A, Sagi HC, Durham R, Flint L. Contemporary management of pelvic fractures. Am J Surg 2006;192(2):211–223.
6. Dyer GS, Vrahas MS. Review of the pathophysiology and acute management of haemorrhage in pelvic fracture. Injury 2006;37(7):602–613.
7. Cullinane DC, Schiller HJ, Zielinski MD, et al. Eastern Association for the Surgery of Trauma practice management guidelines for hemorrhage in pelvic fracture: update and systematic review. J Trauma 2011;71(6):1850–1868.
8. Jeske HC, Larndorfer R, Krappinger D, et al. Management of hemorrhage in severe pelvic injuries. J Trauma 2010;68(2):415–420.
9. Figler B, Hoffler CE, Reisman W, et al. Multi-disciplinary update on pelvic fracture associated bladder and urethral injuries. Injury 2012;43(8):1242–1249.
10. Stambaugh LE 3rd, Blackmore CC. Pelvic ring disruptions in emergency radiology. Eur J Radiol 2003; 48(1):71–87.
11. Kurylo JC,Tornetta P 3rd. Initial management and classification of pelvic fractures. Instr Course Lect 2012;61:3–18.
12. Star AJ, Malekzadeh AS. Fractures of the Pelvic Ring. In Rockwood & Green's Fractures in Adults, 6th Edition. Bucholz RW, Heckman JD, Court-Brown CM (ed). Lippincott Williams & Wilkins Volume 2, Section Four, Chapter 41: 1585 – 1663.
13. DeLancey J 2008 Anatomy of the pelvis Global Library of Women's Medicine Available from https://editorial.glowm. com/Potassium.htm?p=glowm.cml%2Fsection_view &articleid=95&fbclid=IwAR3GzIzKPPqJ6LVka3MAL 8uRCOPER3QsmYZiX0xy111Cdv2keUrtgR6Hm8w
14. Tile M. Pelvic ring fractures: should they be fixed? J Bone Joint Surg 1988;70B:1–12.
15. Pennal GF, Tile M, Waddell JP, Garside H. Pelvic disruption: assessment and classification. Clin Orthop Relat Res. 1980; (151):12-21.
16. Langford JR, Burgess AR, Liporace FA, Haidukewych GJ 2013 Pelvic fractures: Part 1. Evaluation, classification, and resuscitation Journal of the American Academy of Orthopaedic Surgeons 21 (8) 448–457
17. Lee C, Porter K 2007 The prehospital management of pelvic fractures, Emergency Medicine Journal 24 (2) 130–133
18. Lowth M 2015 Pelvic Fractures Available from https://patient. info/doctor/pelvic-fractures (accessed 21 March 2020)
19. Langford JR, Burgess AR, Liporace FA, Haidukewych GJ 2013 Pelvic fractures: Part 2. Contemporary indications and techniques for definitive surgical management Journal of the American

Academy of Orthopaedic Surgeons 21 (8) 458–468
20. Chiodo A 2007 Neurologic injury associated with pelvic trauma: Radiology and electrodiagnosis evaluation and their relationships to pain and gait outcome Archives of Physical Medicine and Rehabilitation 88 (9) 1171–1176
21. BOA 2016 The Management of Urological Trauma Associated with Pelvic Fractures Available from www.boa.ac.uk/ uploads/assets/86c72eff-26aa-4cec-98d1e85cda3 dac6c/bcdaeccf-0cf-f-4da8-bca1b9519b3a542d/the% 20management%20of%20urological%20trauma%20associated%20with%20pelvic%20fractures.pdf (accessed 21 March 2020).
22. Saxena P, Agrawal A, Sakale H 2014 Introduction to pelvic injury and its acute management Journal of Orthopedics, Traumatology and Rehabilitation 7 (1) 1–7
23. BOA 2018 The Management of Patients with Pelvic Fractures Available from www.boa.ac.uk/uploads/assets/e0ff512b – 6364-42ef-af23617e1894d8bd/04fe5a18-47a2-46d7 – 9aa6cc158825014d/the%20management%20of% 20patients%20with%20pelvic%20fractures.pdf (accessed March 2020).
24. NICE 2016a Fractures (complex): Assessment and management Available from www.nice.org.uk/guidance/ NG37/chapter/recommendations (accessed 21 March 2020).
25. Moran CG et al 2018 Changing the System – Major Trauma Patients and Their Outcomes in the NHS (England) 2008– 17 EClinicalMedicine 2–3 (2018) 13-21. doi: https://doi.org/10.1016/j.eclinm.2018.07.001. Available from https:// www.thelancet.com/action/showPdf?pii=S2589-5370% 2818%2930007-5
26. NICE 2016b Major trauma: Assessment and initial management Available from www.nice.org.uk/guidance/ ng39/chapter/Recommendations (accessed 21 March 2020).
27. Graf 2018 Unstable Pelvic Fractures Workup Medscape Available from https://emedicine.medscape.com/article/ 1247426-workup (accessed 21 March 2020).
28. O'Connor TJ, Cole PA 2014 Pelvic insufficiency fractures Geriatric Orthopaedic Surgery & Rehabilitation 5 (4) 178–190
29. Giannoudis PV et al 2007 Prevalence of pelvic fractures, associated injuries, and mortality: The United Kingdom perspective Journal of Trauma – Injury, Infection and Critical Care 63 (4) 875–883
30. BOA 2017 Open Fractures Available from www.boa.ac.uk/ uploads/assets/3b91a-d0a-9081-4253-92f7d90e8df0 fb2c/29bf80f1-1cb6-46b7-afc761119341447f/open% 20fractures.pdf (accessed 21 March 2020).
31. Weaver MJ, Bruinsma W, Toney E, Dafford E, Vrahas MS.What are the patterns of injury and displacement seen in lateral compression pelvic fractures? Clin Orthop Relat Res 2012;470(8): 2104–2110.
32. Osgood GM, Manson TT, O'Toole RV, Turen CH. Combined pelvic ring disruption and acetabular fracture: associated injury patterns in 40 patients. J Orthop Trauma 2013;27(5):243–247.
33. Stover MD, Mayo KA, Kellam JF. Pelvic ring disruptions. In: Skeletal trauma: basic science, management, and reconstruction. 4th ed. Philadelphia, Pa: Saunders, 2009; 1107–1170.
34. Tile M, Hearn T, Vrahas MS. Biomechanics. In: Fractures of the pelvis and acetabulum. 3rd ed. Philadelphia, Pa: Lippincott Williams & Wilkins, 2003; 32–45.
35. Burgess AR, Eastridge BJ,Young JW, et al. Pelvic ring disruptions: effective classification system and treatment protocols. J Trauma 1990;30(7): 848–856.
36. Young JW, Burgess AR, Brumback RJ, Poka A. Pelvic fractures: value of plain radiography in early assessment and management. Radiology 1986;160(2): 445–451.
37. Dalal SA, Burgess AR, Siegel JH, et al. Pelvic fracture in multiple trauma: classification by mechanism is key to pattern of organ injury, resuscitative requirements, and outcome. J Trauma 1989;29(7): 981–1000; discussion 1000–1002.
38. Gänsslen A, Pohlemann T, Paul C, Lobenhoffer P, Tscherne H. Epidemiology of pelvic ring injuries. Injury 1996;27(suppl 1):S13–S20.
39. Young JW, Resnik CS. Fracture of the pelvis: current concepts of classification. AJR Am J Roentgenol 1990;155(6):1169–1175.

40. Scheyerer MJ, Osterhoff G, Wehrle S, Wanner GA, Simmen HP, Werner CM. Detection of posterior pelvic injuries in fractures of the pubic rami. Injury 2012;43(8):1326–1329.
41. Rogers LF. Pelvic trauma. In: Radiology of skeletal trauma. 3rd ed. Philadelphia, Pa: Churchill Living – stone, 2002; 930–1029.
42. Starks I, Frost A, Wall P, Lim J. Is a fracture of the transverse process of L5 a predictor of pelvic fracture instability? J Bone Joint Surg Br 2011;93(7): 967–969.
43. Blackmore CC, Jurkovich GJ, Linnau KF, Cummings P, Hoffer EK, Rivara FP. Assessment of volume of hemorrhage and outcome from pelvic fracture. Arch Surg 2003;138(5):504–508.
44. Sandler CM, Harris JH Jr, Corriere JN Jr, Toombs BD. Posterior urethral injuries after pelvic fracture. AJR Am J Roentgenol 1981;137(6):1233–1237.
45. Vaidya R, Colen R, Vigdorchik J, Tonnos F, Sethi A.Treatment of unstable pelvic ring injuries with an internal anterior fixator and posterior fixation: initial clinical series. J Orthop Trauma 2012;26(1): 1–8.