

Bölüm 8

EL BİLEĞİ VE EL AĞRILARINA YAKLAŞIM

Ömer DİKİCİ¹

GİRİŞ

Günlük yaşıntımızda el kavrama, tutma, kendimizi ifade etme ve dokunma gibi çok çeşitli fonksiyonlara sahiptir. Bu fonksiyonları yerine getirebilmek için elin kompleks bir yapısı vardır. Üst ekstremitenin en aktif bölümü olan el aynı zamanda yaralanmalara da açık bir organdır. El bileğinin ise elin üç düzlemede de hareketine izin verebilecek şekilde bir yapısı vardır ve el bileği eli önkola bağlar⁽¹⁾.

El ve/veya el bileği ağrısıyla başvuran hastalar farklı klinik özelliklere sahip olabilirler. Hastaların bu ağrılarıyla alakalı veya alakalı olmayan şikayetleri vardır. Ağrı bazen lokalize olabildiği gibi bazen de servikal, omuz veya dirsek gibi daha proksimalden kaynaklı olabilir. Kafa karıştırıcı durumlar olsa da bu faktörleri tanımlamak, ayırcı tanıyı yapmak ve uygun tanıya göre tedavi etmek hekimin görevidir.

Bu bölümde kısaca el ve el bileğinin anatomisi, değerlendirilmesi ve sık karşılaşılan hastalıklarından bahsedilecektir.

ANATOMİ

El anatomsisini tanımlamak için bazı terimler kullanılır. “Volar” ve “palmar” elin avuç tarafı için, “dorsal” elin sırtı için, “radial kısım” başparmak tarafı için, “ulnar kısım” 5. parmak tarafı için kullanılır⁽²⁾.

El ve el bileği 27 kemik, 27 eklem, 34 kas, yüzden fazla ligament ve tendon ile sayısız damar ve sinirden oluşur. 8 karpal, 5 metakarpal ve 14 falanks kemiği bulunur. Distal radius ve ulna, 8 karpal kemik ve 5 metakarpal kemiğin proksimali el bileğini oluşturur. El bileğinde 13 eklem, 5 metakarpofalangeal eklem, 4

¹ Fiziksel Tıp ve Rehabilitasyon Uzmanı, İzmir Katip Çelebi Üniversitesi Atatürk Eğitim ve Araştırma Hastanesi, dr_dikici@hotmail.com

ile konulabilmektedir. Ayrıca son yıllarda teknolojik gelişmelerle birlikte kas iskelet sistemi hastalıklarının tanı ve tedavisinde ultrasonografi gibi tıbbi cihazların kullanımı artmıştır. Hekimler kanıt dayalı tıp çerçevesinde hastalara uygun tanıları koyduktan sonra uygun tedavileri düzenlemelidirler. Konservatif tedaviler genellikle ilk seçenek olarak tercih edilmelidir. Bu tedavilere yanıt alınmayan hastalar ise cerrahi tedavi için fazla bekletilmeden ilgili hekimlere yönlendirilmelidir.

Anahtar Kelimeler: el, el bileği, karpal tünel sendromu

*Şekil 1'in çizimini yapan Dr. Merve İncekara'ya teşekkür ederim.

KAYNAKÇA

1. Kijima Y, Viegas SF. Wrist anatomy and biomechanics. *J Hand Surg Am*, 2009;34:1555–1563.
2. Day CS, Wu WK, Smith CC. Examination of the Hand and Wrist. *The New England journal of medicine*, 2019;380:e15.
3. Tanrıkuşu S, Bekmez Ş, Üzümçügil A, et al. Anatomy and Biomechanics of the Wrist and Hand. *Sports Injuries: Prevention, Diagnosis, Treatment and Rehabilitation*, 2015;35:441-447. https://doi.org/10.1007/978-3-642-36569-0_49
4. Swigart, CR. (2013). Hand and wrist pain. Gary Firestein, Ralph Budd, Sherine E Gabriel, Iain B McInnes, & James O'Dell (Eds.), In Kelley's Textbook of Rheumatology 9th Edt. (pg. 708 – 720. e3). Philadelphia: Elsevier Saunders.
5. Kuran, B. El ve el bileği ağrısı nedenleri ve muayenesi. Mehmet Beyazova, & Yeşim G Kutsal (Eds.). (2016). *Fiziksel tip ve rehabilitasyon cilt 2 içinde*. Güneş Tip Kitabevleri.
6. Champion D. Gouty tenosynovitis and the carpal tunnel syndrome. *Med J Aust*, 1969;1:1030.
7. Gould JS, Wissinger HA: Carpal tunnel syndrome in pregnancy. *South Med J*, 1978;71:144–145.
8. Green EJ, Dilworth JH, Levitin PM. Tophaceous gout: an unusual cause of bilateral carpal tunnel syndrome. *JAMA*, 1977;237:2747–2748.
9. Leach RE, Odom JA. Systemic causes of the carpal tunnel syndrome. *Postgrad Med*, 1968;44:127–131.
10. Massey EW. Carpal tunnel syndrome in pregnancy. *Obstet Gynecol Surg*, 1978;33:145.
11. Michaelis LS. Stenosis of carpal tunnel, compression of median nerve, and flexor tendon sheaths, combines with rheumatoid arthritis elsewhere. *Proc R Soc Med* 1950;43:414.
12. Phillips RS. Carpal tunnel syndrome as manifestation of systemic disease. *Ann Rheum Dis*, 1967;26:59.
13. Karpitskaya Y, Novak CB, Mackinnon SE. Prevalence of smoking, obesity, diabetes mellitus, and thyroid disease in patients with carpal tunnel syndrome. *Ann Plast Surg*, 2002;48:269–273.
14. Mondelli M, Giannini F, Giacchi M. Carpal tunnel syndrome incidence in a general population. *Neurology*, 2002;58:289–294.
15. da Costa BR, Vieira ER. Risk factors for work-related musculoskeletal disorders: A systematic review of recent longitudinal studies. *Am J Ind Med*, 2010;53:285–323.
16. Lettin AWF. Carpal tunnel syndrome in childhood. *J Bone Joint Surg*, 1965;47:556–559.
17. al-Qattan MM, Thomson HG, Clarke HM. Carpal tunnel syndrome in children and adolescents with no history of trauma. *J Hand Surg Br* 1996;21B:108–111.
18. Kummel BM, Zazanis GA. Shoulder pain as the presenting complaint in carpal tunnel syndrome. *Clin Orthop*, 1972;83:41–47.
19. Werner RA, Andary M. Carpal tunnel syndrome: pathophysiology and clinical neurophysiology. *Clin Neurophysiol*, 2002;113:1373-1381.
20. Pryse-Phillips WE. Validation of a diagnostic sign in carpal tunnel syndrome. *J Neurol Neurosurg Psychiatry*, 1984;47:870-872.
21. D'Arcy CA, McGee S. Does this patient have carpal tunnel syndrome?. *Jama*, 2000;283:3110–3117.
22. Phalen GS. Spontaneous compression of the median nerve at the wrist. *JAMA*, 1951;145:1128.

23. Durkan JA. A new diagnostic test for carpal tunnel syndrome. *J Bone Joint Surg*, 1991;73:535-538.
24. Gonzalez del Pino J, Delgado-Martinez AD, Gonzalez Gonzalez I, et al. Value of the carpal compression test in the diagnosis of carpal tunnel syndrome. *J Hand Surg (Am)*, 1997;22:38-41.
25. Wipperman J, Goerl K. Carpal Tunnel Syndrome: Diagnosis and Management. *American family physician*, 2016;94:993-999.
26. Melvin JL, Schuckmann JA, Lanese RR. Diagnostic specificity of motor and sensory nerve conduction variables in the carpal tunnel syndrome. *Arch Phys Med Rehabil*, 1973;54:69.
27. Jablecki CK, Andary MT, So YT, et al. Literature review of the usefulness of nerve conduction studies and electromyography for the evaluation of patients with carpal tunnel syndrome. AAEM Quality Assurance Committee. *Muscle Nerve*, 1993;16:1392-414.
28. Kemble F. Electrodagnosis of the carpal tunnel syndrome. *J Neurol Neurosurg Psychiatry*, 1968;31:23.
29. Ludin HP, Lütschg J, Valsangiacomo F. Comparison of orthodromic and antidromic sensory nerve conduction, 1: normals and patients with carpal tunnel syndrome. *EEG EMG*, 1977;8:173.
30. Richier HP, Thoden U. Early electroneurographic diagnosis of carpal tunnel syndrome. *EEG EMG*, 1977;8:187.
31. Padua L, Coraci D, Erra C, et al. Carpal tunnel syndrome: clinical features, diagnosis, and management. *The Lancet Neurology*, 2016;15:1273-1284.
32. Tai TW, Wu CY, Su FC, et al. Ultrasonography for diagnosing carpal tunnel syndrome: a meta-analysis of diagnostic test accuracy. *Ultrasound Med Biol*, 2012;38:1121-1128.
33. Drakopoulos D, Mitsiokapa E, Karamanis E, et al. Ultrasonography Provides a Diagnosis Similar to That of Nerve Conduction Studies for Carpal Tunnel Syndrome. *Orthopedics*, Future article 2019. <https://doi.org/10.3928/01477447-20190604-02>.
34. Huisstede BM, Fridén J, Coert JH, et al. Carpal tunnel study syndrome: hand surgeons, hand therapists, and physical medicine and rehabilitation physicians agree on a multidisciplinary treatment guideline results from the European HANDGUIDE Study. *Arch Phys Med Rehabil*, 2014;95:2253-2263.
35. Shi Q, MacDermid JC. Is surgical intervention more effective than non-surgical treatment for carpal tunnel syndrome? A systematic review. *J Orthop Surg Res*, 2011;6:17.
36. Turner A, Kimble F, Gulyás K, et al. Can the outcome of open carpal tunnel release be predicted?: a review of the literature. *ANZ J Surg*, 2010;80:50-54.
37. Bozentka DJ. Cubital tunnel syndrome pathophysiology. *Clin Orthop Relat Res*, 1998;351:90-94.
38. Robertson C, Saratsiotis J. A review of compressive ulnar neuropathy at the elbow. *J Manip Physiol Ther*, 2005;28:345.
39. Norkus SA, Meyers MC. Ulnar neuropathy of the elbow. *Sports Med*, 1994;17:189-199.
40. Folberg CR, Weiss AP, Akelman E. Cubital tunnel syndrome. Part I: presentation and diagnosis. *Orthop Rev*, 1994;23:136-144.
41. Bradshaw DY, Shefner JM. Ulnar neuropathy at the elbow. *Neurol Clin*, 1999;17:447-461.
42. Andrews K, Rowland A, Pranjal A, et al. Cubital tunnel syndrome: anatomy, clinical presentation, and management. *Journal of orthopaedics*, 2018;15:832-836.
43. Ciccotti MC, Schwartz MA, Ciccotti MG. Diagnosis and treatment of medial epicondylitis of the elbow. *Clin Sports Med*, 2004;23:693-705.
44. Montagna P, Liguori R. The motor tinel sign: a useful sign in entrapment neuropathy? *Muscle Nerve*, 2000;23:976-978.
45. Posner MA. Compressive neuropathies of the ulnar nerve at the elbow and wrist. *Instr Course Lect*, 2000;49:305-317.
46. Chen J, Chang KV, Wu WT, et al. Ultrasound parameters other than the direct measurement of ulnar nerve size for diagnosing cubital tunnel syndrome: a systemic review and meta-analysis. *Archives of physical medicine and rehabilitation*, 2019;100:1114-1130.
47. Blunden R. Neuritis of deep branch of the ulnar nerve. *J Bone Joint Surg*, 1958;40:354.

48. Eckman PB, Perlstein G, Altrocchi PH. Ulnar neuropathy in bicycle riders. *Arch Neurol*, 1975;32:130–131.
49. Uriburu IJF, Morchio FJ, Marin JC. Compression syndrome of the deep branch of the ulnar nerve (piso-hamate hiatus syndrome). *J Bone Joint Surg*, 1976;58:145–147.
50. Poppi M, Padovani R, Martinelli P, et al. Fractures of the distal radius with ulnar nerve palsy. *J Trauma*, 1978;18:278–279.
51. Vance RM, Gelberman RH. Acute ulnar neuropathy with fractures at the wrist. *J Bone Joint Surg*, 1978;60:962–965.
52. Jeffery AK. Compression of the deep palmar branch of the ulnar nerve by an anomalous muscle. *J Bone Joint Surg*, 1971;53:718–723.
53. Kalisman M, Laborde K, Wolff TW. Ulnar nerve compression secondary to ulnar artery false aneurysm at the Guyon's canal. *J Hand Surg (Am)*, 1982;7:137–139.
54. McFarland GB, Hoffer MM. Paralysis of the intrinsic muscles of the hand secondary to lipoma in Guyon's canal. *J Bone Joint Surg*, 1971;53:375–376.
55. Richmond DA. Carpal ganglion with ulnar nerve compression. *J Bone Joint Surg*, 1963;45:513–515.
56. Toshima Y, Kimata Y. A case of ganglion causing paralysis of intrinsic muscles innervated by the ulnar nerve. *J Bone Joint Surg*, 1961;43:153.
57. Ramchurn N, Mashamba C, Leitch E, et al. Upper limb musculo-skeletal abnormalities and poor metabolic control in diabetes. *Eur J Intern Med*. 2009;20:718–721.
58. Bonnici AV, Spencer JD. A survey of 'trigger finger' in adults. *J Hand Surg (Am)*, 1988;13:202–203.
59. Koh S, Nakamura S, Hattori T, et al. Trigger digits in diabetes: their incidence and characteristics. *J Hand Surg Eur Vol*, 2010;35:302–305.
60. Matthews A, Smith K, Read L, et al. Trigger finger: an overview of the treatment options. *Journal of the American Academy of PAs*, 2019;32:17–21.
61. Jeanmonod R, Waseem M. Trigger Finger. Treasure Island, FL: StatPearls Publishing; 2019
62. Parks E. The hand, wrist, and elbow. In: Practical Office Orthopedics. New York, NY: McGraw-Hill Education; 2017.
63. Spirig A, Juon B, Banz Y, et al. Correlation between sonographic and In Vivo measurement of A1 pulleys in trigger fingers. *Ultrasound Med Biol*, 2016;42:1482–1490.
64. Colbourn J, Heath N, Manary S, et al. Effectiveness of splinting for the treatment of trigger finger. *J Hand Ther*, 2008;21:336–343.
65. Ryzewicz M, Wolf JM. Trigger digits: principles, management, and complications. *J Hand Surg Am*, 2006;31:135–146.
66. Wojahn RD, Foeger NC, Gelberman RH, et al. Long-term outcomes following a single corticosteroid injection for trigger finger. *J Bone Joint Surg Am*, 2014;96:1849–1854.
67. Finkelstein H. Stenosing tendovaginitis at the radial styloid process. *J Bone Joint Surg*, 1930;12:509–540.
68. Pick RY. De Quervain's disease: a clinical triad. *Clin Orthop*, 1979;143:165–166.
69. Sato J, Ishii Y, Noguchi H. Clinical and ultrasound features in patients with intersection syndrome or de Quervain's disease. *Journal of Hand Surgery (European Volume)*, 2016;41:220–225.
70. Huisstede BM, Gladdines S, Randsdorp MS, et al. Effectiveness of conservative, surgical, and postsurgical interventions for trigger finger, dupuytren disease, and de quervain disease: a systematic review. *Archives of physical medicine and rehabilitation*, 2018;99:1635–1649.
71. Richie CA, Briner WW. Corticosteroid injection for treatment of de Quervain's tenosynovitis: a pooled quantitative literature evaluation. *J Am Board Fam Pract*, 2003;16:102–106.
72. Kang HJ, Koh IH, Jang JW, et al. Endoscopic versus open release in patients with de Quervain's tenosynovitis: a randomised trial. *Bone Joint J*, 2013;95:947–951.
73. Altman R, Alarcon G, Appelrouth D, et al. The American College of Rheumatology criteria for the classification and reporting of osteoarthritis of the hand. *Arthritis & Rheumatism: Official Journal of the American College of Rheumatology*, 1990;33:1601–1610.
74. Kloppenburg M, Kwok WY. Hand osteoarthritis - a heterogeneous disorder. *Nature Reviews Rheumatology*, 2011;8:22–31.

75. Prieto-Alhambra D, Judge A, Javaid MK, et al. Incidence and risk factors for clinically diagnosed knee, hip and hand osteoarthritis: influences of age, gender and osteoarthritis affecting other joints. *Annals of the rheumatic diseases*, 2014;73:1659-1664.
76. Marshall M, Watt FE, Vincent TL, et al. Hand osteoarthritis: clinical phenotypes, molecular mechanisms and disease management. *Nature Reviews Rheumatology*, 2018;14:641-656.
77. Zhang W, Doherty M, Leeb BF, et al. EULAR evidence based recommendations for the management of hand osteoarthritis: report of a Task Force of the EULAR Standing Committee for International Clinical Studies Including Therapeutics (ESCISIT). *Annals of the rheumatic diseases*, 2007;66:377-388.
78. Tan AL, Grainger AJ, Tanner SF, et al. High-resolution magnetic resonance imaging for the assessment of hand osteoarthritis. *Arthritis & Rheumatism: Official Journal of the American College of Rheumatology*, 2005;52:2355-2365.
79. Marshall M, Peat G, Nicholls E, et al. Subsets of symptomatic hand osteoarthritis in community-dwelling older adults in the United Kingdom: prevalence, inter-relationships, risk factor profiles and clinical characteristics at baseline and 3-years. *Osteoarthritis and cartilage*, 2013;21:1674-1684.
80. Villaña JH, Valdes K. Combined thumb abduction and index finger extension strength: a comparison of older adults with and without thumb carpometacarpal osteoarthritis. *J Manipulative Physiol Ther*, 2013;36:238-244.
81. McQuillan TJ, Kenney D, Crisco JJ, et al. Weaker functional pinch strength is associated with early thumb carpometacarpal osteoarthritis. *Clin Orthop Relat Res*, 2016;474:557-561.
82. Coughlan MJ, Bourdillon A, Crisco JJ, et al. Reduction in cylindrical grasp strength is associated with early thumb carpometacarpal osteoarthritis. *Clinical Orthopaedics and Related Research*, 2017;475:522-528.
83. Rees F, Doherty S, Hui M, et al. Distribution of finger nodes and their association with underlying radiographic features of osteoarthritis. *Arthritis care & research*, 2012;64:533-538.
84. Hodkinson B, Maheu E, Michon M, et al. Assessment and determinants of aesthetic discomfort in hand osteoarthritis. *Ann Rheum Dis*, 2012;71:45-49.
85. Vlychou M, Koutroumpas A, Alexiou I, et al. High-resolution ultrasonography and 3.0 T magnetic resonance imaging in erosive and nodal hand osteoarthritis: high frequency of erosions in nodal osteoarthritis. *Clin Rheumatol*, 2013;32:755-762.
86. Marshall M, Nicholls E, Kwok WY, et al. Erosive osteoarthritis: a more severe form of radiographic hand osteoarthritis rather than a distinct entity?. *Annals of the rheumatic diseases*, 2015;74:136-141.
87. Addimanda O, Mancarella L, Dolzani P, et al. Clinical and radiographic distribution of structural damage in erosive and nonerosive hand osteoarthritis. *Arthritis care & research*, 2012;64:1046-1053.
88. Kwok WY, Kloppenburg M, Marshall M, et al. Comparison of clinical burden between patients with erosive hand osteoarthritis and inflammatory arthritis in symptomatic community-dwelling adults: the Keele clinical assessment studies. *Rheumatology*, 2013;52: 2260-2267.
89. Wittoek R, Cruyssen BV, Verbruggen G. Predictors of functional impairment and pain in erosive osteoarthritis of the interphalangeal joints: comparison with controlled inflammatory arthritis. *Arthritis Rheum*. 2012;64:1430-1436.
90. Kwok WY, Kloppenburg M, Marshall M, et al. The prevalence of erosive osteoarthritis in carpo-metacarpal joints and its clinical burden in symptomatic community-dwelling adults. *Osteoarthritis and cartilage*, 2014;22:756-763.
91. Kortekaas MC, Kwok WY, Reijnierse M, et al. In erosive hand osteoarthritis more inflammatory signs on ultrasound are found than in the rest of hand osteoarthritis. *Ann Rheum Dis*, 2013;72:930-934.
92. Haugen IK, Mathiessen A, Slatkowsky-Christensen B, et al. Synovitis and radiographic progression in non-erosive and erosive hand osteoarthritis: is erosive hand osteoarthritis a separate inflammatory phenotype?. *Osteoarthritis and cartilage*, 2016;24:647-654.