

POSTERIOR TIBIAL VE SURAL SİNİRLERİN TUZAK – KOMPRESYON NÖROPATİLERİ

Dr. Derya TAKTAKOĞLU¹

14. BÖLÜM

POSTERIOR TIBIAL SİNİRİN TUZAK NÖROPATİLERİ

Genel bilgiler

Posterior tibial sinir siyatik sinirin medial kısmından köken alır. Siyatik sinirden ayrıldıktan sonra popliteal fossada sural sinire ve bacağın posterior kompartman kaslarına dallar verir. Ayak bileğinde tarsal tünelden geçerek kalkaneal, medial ve lateral plantar dallarına ayrılır. Posterior tibial sinir seyri boyunca bacak proksimalinde, tarsal tünelde (tarsal tünel sendromu) ve ayakta (morton nöroması) tuzaklanabilir.

Tarsal tünel sendromu

Genel Bilgiler

Alt ekstremite tuzak nöropatileri çok sık görülmeyen bu yüzden tanısı atلان veya zor olan hastalıklardır. Tarsal tünel ayak bileği medialinde bulunur. Tarsal tünel sendromu nadir bir tuzak nöropatidir. Proksimal ve distal olarak ikiye ayrıılır. Proksimalde posterior tibial sinir tarsal tünel içinde medial malleol posterioru ile talus ve kalkaneus mediali arasından geçerken tuzaklanır. Distalde terminal dalların (medial plantar sinir, lateral plantar sinir, medial kalkaneal sinir) bir veya daha fazlası tarsal tünel içinde veya ayrıldıktan sonra tuzaklanmaktadır [1]. Bu sendrom Kopell ve Thompson tarafından 1960 yılında tanımlanmıştır [2]. Ayak bileği, topuk, ayak tabanı ve ayak parmakları medialinde ağrı, duyu kaybı, parestezî görülür.

¹ Sağlık Bilimleri Üniversitesi Adana Şehir Eğitim ve Araştırma Hastanesi, Nöroloji Kliniği, Adana, Türkiye

Kaynaklar

1. Lopez-Ben R: Imaging of nerve entrapment in the foot and ankle. *Foot Ankle Clin* 2011;16(2):213-224.
2. Kopell HP, Thompson WA. Peripheral entrapment neuropathies of the lower extremity. *N Engl J Med* 1960;262:56-60.
3. Heimkes B, Posel P, Stotz S, Wolf K. The proximal and distal tarsal tunnel syndromes. An anatomical study. *Int Orthop* 1987;11(3):193-196.
4. Mann RA, Baxter DE. Diseases of the nerve. In: Mann RA, Coughlin JC, editors. *Surgery of the foot and ankle*. St Louis (MO): Mosby, 1993:554-8.
5. Havel PE, Ebraheim NA, Clark SE. Tibial branching in the tarsal tunnel. *Foot Ankle* 1988; 9: 117-119.
6. Rask MR. Medial plantar neurapraxia (jogger's foot): report of 3 cases. *Clin Orthop Relat Res* 1978;(134):193-195.
7. Reade BM, Longo DC, Keller MC. Tarsal tunnel syndrome. *Clin Podiatr Med Surg* 2001;18(3):395-408
8. Baxter DE, Thigpen CM. Heel pain-operative results. *Foot Ankle* 1984;5(1):16-25.
9. Alshami AM, Souvlis T, Coppelters MW. A review of plantar heel pain of neural origin: differential diagnosis and management. *Man Ther* 2008;13(2):103-11
10. Lau, J.T. and T.R. Daniels, Tarsal tunnel syndrome: a review of the literature. *Foot&ankle international*, 1999;20(3):201-209.
11. Joshi, S., S. Joshi, and S. Athavale, Anatomy of tarsal tunnel and its applied significance. *J Anat Soc India*, 2006;55(1);52-56
12. Erickson SJ, Quinn SF, Kneeland JB, Smith JW, Johnson JE, Carrera GF, Shereff MJ, Hyde JS, Jesmanowicz A. MR imaging of the tarsal tunnel and related spaces: Normal and abnormal findings with anatomic correlation. *AJR Am J Roentgenol* 1990;155(2):323-328.
13. Antoniadis, G. and K. Scheglmann, Posterior tarsal tunnel syndrome: diagnosis and treatment. *Deutsches Ärzteblatt International*, 2008;105(45):776
14. John TC, Lau MD. Tarsal Tunnel Syndrome : A review of the literature. *Foot Ankle Int* 1999;20(3):201-209.
15. Ferkel E, Davis WH, Ellington JK. Entrapment Neuropathies of the Foot and Ankle. *Clinics in sports medicine* 2015;34(4):791-801
16. Bowley MP, Doughty CT. Entrapment neuropathies of the lower extremity. *Medical Clinics of North America* 2019;103(2):371-382
17. Abouelela, A.A. and A.K. Zohiery, The triple compression stress test for diagnosis of tarsal tunnel syndrome. *The Foot*, 2012;22(3):146-149
18. Edwards WG, Lincoln CR, Bassett FH, Goldner JL. The tarsal tunnel syndrome. Diagnosis and treatment. *JAMA* 1969;207(4):716-20.
19. Lam SJ. A tarsal-tunnel syndrome. *Lancet* 1962;2(7270):1354-1355.
20. Schwieterman B, Haas D, Columber K, et al. Diagnostic accuracy of physical examination tests of the ankle/foot complex: a systematic review. *Int J Sports Phys Ther* 2013;8(4):416-426.
21. Bsteh G, Wanschitz JV, Gruber H, et al. Prognosis and prognostic factors in nontraumatic acute onset compressive mononeuropathies-radial and peroneal mononeuropathies. *European Journal of Neurology* 2013;20(6):981-985
22. Kinoshita M, Okuda R, Morikawa J, et al. The dorsiflexion-eversion test for diagnosis of tarsal tunnel syndrome. *J Bone Joint Surg Am* 2001;83-A(12):1835-1839.
23. Trepman E, Kadel NJ, Chisholm K, et al. Effect of foot and ankle position on tarsal tunnel compartment pressure. *Foot Ankle Int* 1999;20(11):721-726

24. Patel AT, Gaines K, Malamut R, et al. Usefulness of electrodiagnostic technique in the evaluation of suspected tarsal tunnel syndrome: an evidence-based review. *Muscle Nerve* 2005;32(2):236-240.
25. Alan, U.S.P.D. and H.T.T. Sendromu, Tarsal tunnel syndrome in a patient on long term peritoneal dialysis: case report. *Turkish neurosurgery*, 2007;17(4):283-285.
26. Preston, D. and B. Shapiro, Nerve conduction studies normal adults' values. In *Electromyography and neuromuscular disorders. Clinical-electrophysiologic correlations*. 2nd Edition. Philadelphia: Elsevier Butterworth Heinemann 2005: 365-371
27. Gatens PF, Saeed MA. Electromyographic findings in the intrinsic muscles of normal feet. *Arch Phys Med Rehabil* 1982;63:317-318.
28. Fantino O. Role of ultrasound in posteromedial tarsal tunnel syndrome: 81 cases. *J Ultrasound* 2014;32(17):99-112.
29. Nagaoka, M. and H. Matsuzaki, Ultrasonography in tarsal tunnel syndrome. *Journal of ultrasound in medicine*, 2005;24(8):1035-1040.
30. Samarawickrama D, Therimadasamy AK, Chan YC, Vijayan J, Smith EP. Nerve ultrasound in electrophysiologically verified tarsal tunnel syndrome. *Muscle Nerve* 2016;53(6):906-912
31. McSweeney SC, Cichero M. Tarsal tunnel syndrome—a narrative literature review. *Foot (Edinb)* 2015;25(4):244-250.
32. Singh, S.K., M.G. Wilson, and C.P. Chiodo, The surgical treatment of tarsal tunnel syndrome. *The Foot*, 2005;15(4):212-216.
33. Lee, M., et al., Tarsal tunnel syndrome caused by talocalcaneal coalition. *Clinical imaging*, 2002;26(2):140-143.
34. Morscher E, Ulrich J, Dick W. Morton's intermetatarsal neuroma: morphology and histological substrate. *Foot Ankle Int*. 2000;21:558-562.
35. Civinini F. Su d'un nervoso gangliare rigonfiamento alla pianta del piede Lettera anatomica al Dr. Salomone Lampronti. Pistoia: Tip. Bracali; 1835.
36. Durlacher L. Treatise on corns, bunions, the diseases of nails and the general management of the feet. London: Simpkin-Marshall; 1845.
37. Jain S, Mannan K. The diagnosis and management of morton's neuroma. *Foot&Ankle Specialist*. 2013;6(4),307-317.
38. Bradley N, Miller WA, Evans JP. Plantar neuroma: analysis of results following surgical excision in 145 patients. *South Med* 1976;69(7):853-854.
39. Kasparek M, Schneider W. Surgical treatment of Morton's neuroma: clinical results after open excision. *Int Orthop* 2013;37(9):1857-1861.
40. Gouglias N, Lampridis V, Sakellariou A. Morton's interdigital neuroma: instructional review. *Foot ankle int* 2019;4:14-24.
41. Claassen L, Bock K, Ettinger M, Waizy H, Stukenborg-Colsman C, Plaass C. Role of MRI in detection of Morton's neuroma. *Foot Ankle Int* 2014;35(10):1002-1005.
42. Quinn TJ, Jacobson JA, Craig JG, van Holsbeeck MT. Sonography of Morton's neuromas. *AJR Am J Roentgenol*. 2000;174:1723-1728.
43. Ter MR, Kwong PK, Suthar M, Horvath BC, Colletti PM. Morton neuroma: evaluation with MR imaging performed with contrast enhancement and fat suppression. *Radiology* 1993;189:239-241.
44. Di caprio F, Meringolo R, Eddine MS, Ponziani L. Morton's interdigital neuroma of the foot A literature review. *Foot ankle surgery* 2017;24(2):92-98.
45. Oh SJ, Sarala PK, Kuba T, et al. Tarsal tunnel syndrome: electrophysiological study. *Ann Neurol* 1978; 5: 327-330
46. Beltran LS, Bencardino J, Ghazikhanian V, Beltran J. Entrapment neuropathies III: lower limb. *Semin Musculoskeletal Radiol* 2010; 14(5): 501-511.

47. Craig A. Entrapment neuropathies of the lower extremity. PMR 2013;5(5 Suppl):S31–40.
48. Yuebing L, Lederman RJ. Sural mononeuropathy: a report of 36 cases. Muscle Nerve 2014;49(3):443–445.
49. Stickler DE, Morley KN, Massey EW. Sural neuropathy: etiologies and predisposing factors. Muscle Nerve 2006;34:482–484.