

# Obstrüktif Uyku Apnesinde Distraksiyon Osteogenezisi Uygulamaları

Gürkan Raşit BAYAR<sup>1</sup>

## Giriş

İlk olarak, Guilleminault ve ark.<sup>1</sup> tarafından tanımlanan obstrüktif uyku apne sendromu (OUAS) tıp ve diş hekimliğinde önemli bir konu olarak yerini almıştır. OUAS uyku sırasında genellikle düşük oksijen saturasyonu ile beraber seyreden üst solunum yollarındaki tekrarlayan aralıklarla gelişen kısmi veya tam tikanıklık olarak tanımlanmaktadır.<sup>1</sup> OUAS gece uykusu ve gündüz uyuqlama sırasında artmış hava akımı direnci ile beraber tekrar eden farengeal kollaps ile karakterizedir. OUAS'ın yoğun gün içi uykululuk, yorgunluk ve nörobilişsel bozukluklar yanında, kardiyovasküler ve serebrovasküler ilişkili morbidite ve mortalitelere yol açtığı gösterilmiştir. Tedavi edilmediği takdirde, OUAS'a bağlı mortalitenin 15 yıl içerisinde %30 olduğu da bildirilmiştir.<sup>2</sup> Bununla birlikte toplumda teşhis edilmiş çokOUAS hastası olduğu düşünülmekte, özellikle hipertansif hastalarda görülmeye sıklığı %17'ye kadar ulaşabilmektedir.<sup>2</sup>

OUAS tedavisi temel olarak cerrahi ve medikal olmak üzere iki gruba ayrılmaktadır. Medikal tedavide devamlı negatif hava basincı yöntemi (DNHB) altın standart olarak kabul edilmekte ve OUAS hastalarının çoğu hala bu yöntemle tedavi edilmektedir.<sup>3</sup> 2006 yılında yapılmış olan bir "cochrane" sistematik taramada, uykusuzluk semptomlarının azaltılmasında ve orta veya yüksek düzeydeki OUAS hastalarının yaşam kalitelerini yükseltmede DNHB'nin etkili bir tedavi olduğu ileri sürülmektedir.<sup>4</sup> Bununla birlikte, DNHB yöntemi hastaların %50'sinden daha azı tarafından tolere edilebilmektedir.<sup>5,6</sup> DNHB tedavisine karşı hastaların uyumsuz olması, genel olarak; uyku arkadaşına verilen rahatsızlık, seksüel yaşam düzensizliği gibi psikolojik durumlar ve tolerans sorunları ile ilişkilendirilmektedir.<sup>7</sup>

<sup>1</sup> Doç. Dr., S.B.Ü. Gülhane Diş Hekimliği Fakültesi, Ağız, Diş, Çene Hastalıkları ve Cerrahisi Anabilim Dalı, Ankara, gurkanbayar@yahoo.com

## Kaynakça

1. Somers VK, White DP, Amin R, et al. Sleep apnea and cardiovascular disease: an American Heart Association/American College of Cardiology Foundation Scientific Statement from the American Heart Association Council for High Blood Pressure Research Professional Education Committee, Council on Clinical Cardiology, Stroke Council, and Council on Cardiovascular Nursing. *J Am Coll Cardiol*, 2008;52:686–717.
2. Holty, J.E.C. and Guilleminault, C. Maxillomandibular Advancement for the treatment of Obstructive Sleep Apnea: A Systematic Review and Meta-Analysis. *Sleep Medicine Reviews*, 2010; 14:287–297.
3. Giles TL, Lasserson TJ, Smith BJ, et al. Continuous positive airways pressure for obstructive sleep apnoea in adults. *Cochrane Database Syst Rev*, 2006;19(3):CD001106.
4. Engleman HM, Wild MR. Improving CPAP use by patients with the sleep apnoea/hypopnoea syndrome (SAHS). *Sleep Med Rev*, 2003;7:81–99.
5. Reishtein JL, Maislin G, Weaver TE. Outcome of CPAP treatment on intimate and sexual relationships in men with obstructive sleep apnea. *J Clin Sleep Med*, 2010;6:221–6.
6. Shin SH, Ye MK, Kim CG. Modified uvulopalatopharyngoplasty for the treatment of obstructive sleep apnea-hypopnea syndrome: resection of the musculus uvulae. *Otolaryngol Head Neck Surg*, 2009;140:924–9.
7. Khan A, Ramar K, Maddirala S, et al. Uvulopalatopharyngoplasty in the management of obstructive sleep apnea: the mayo clinic experience. *Mayo Clin Proc*, 2009;84:795–800.
8. Richard W, Kox D, den Herder C, et al. One stage multilevel surgery (uvulopalatopharyngoplasty, hyoid suspension, radiofrequency ablation of the tongue base with/without genioglossus advancement), in obstructive sleep apnea syndrome. *Eur Arch Otorhinolaryngol*, 2007; 264:439–44.
9. Lin HC, Friedman M, Chang HW, et al. The efficacy of multilevel surgery of the upper airway in adults with obstructive sleep apnea/hypopnea syndrome. *Laryngoscope*, 2008;118:902–8.
10. Kezirian EJ, Goldberg AN. Hypopharyngeal surgery in obstructive sleep apnea: an evidence-based medicine review. *Arch Otolaryngol Head Neck Surg*, 2006;132:206–13.
11. Sher AE, Schechtman KB, Piccirillo JF. The efficacy of surgical modifications of the upper airway in adults with obstructive sleep apnea syndrome. *Sleep*, 1996;19:156–77.
12. Johns FR, Strollo PJ Jr, Buckley M, et al. The influence of craniofacial structure on obstructive sleep apnea in young adults. *J Oral Maxillofac Surg*, 1998;56:596–602.
13. Iwanaga K, Hasegawa K, Shibata N, et al. Endoscopic examination of obstructive sleep apnea syndrome patients during drug-induced sleep. *Acta Otolaryngol Suppl*, 2003;36–40.
14. Holty JE, Guilleminault C. Maxillomandibular advancement for the treatment of obstructive sleep apnea: a systematic review and metaanalysis. *Sleep Med Rev*, 2010;14:287–97.
15. Gassmann CJ, Van Sickels JE, Thrash WJ. Causes, location, and timing of relapse following rigid fixation after mandibular advancement. *J Oral Maxillofac Surg*, 1990;48:450–4.

16. Lake SL, McNeill RW, Little RM, et al. Surgical mandibular advancement: a cephalometric analysis of treatment response. *Am J Orthod*, 1981;80:376–94.
17. Mobarak KA, Espeland L, Krogstad O, et al. Mandibular advancement surgery in high-angle and low-angle class II patients: different Tsui et al. Medicine (2016) 95:36 Medicine long-term skeletal responses. *Am J Orthod Dentofacial Orthop*, 2001;119:368–81.
18. McCarthy JG, Schreiber J, Karp N, et al. Lengthening the human mandible by gradual distraction. *Plast Reconstr Surg*, 1992;89:1–10.
19. Ow A, Cheung LK. Bilateral sagittal split osteotomies versus mandibular distraction osteogenesis: a prospective clinical trial comparing inferior alveolar nerve function and complications. *Int J Oral Maxillofac Surg*, 2010;39:756–60.
20. Ow A, Cheung LK. Bilateral sagittal split osteotomies and mandibular distraction osteogenesis: a randomized controlled trial comparing skeletal stability. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*, 2010;109:17–23.
21. Walker DA. Management of severe mandibular retrognathia in the adult patient using distraction osteogenesis. *J Oral Maxillofac Surg*, 2002;60:1341–6.
22. Klein C, Howaldt HP. Lengthening of the hypoplastic mandible by gradual distraction in childhood—a preliminary report. *J Craniomaxillofac Surg*, 1995;23:68–74.
23. van Strijen PJ, Perdijk FB, Becking AG, et al. Distraction osteogenesis for mandibular advancement. *Int J Oral Maxillofac Surg*, 2000;29:81–5.
24. Vos MD, Baas EM, de Lange J, et al. Stability of mandibular advancement procedures: bilateral sagittal split osteotomy versus distraction osteogenesis. *Int J Oral Maxillofac Surg*, 2009;38:7–12.
25. Mudd PA, Perkins JN, Harwood JE, et al. Early intervention: distraction osteogenesis of the mandible for severe airway obstruction. *Otolaryngol Head Neck Surg*, 2012;146:467–72.
26. Swennen G, Schliephake H, Dempf R, et al. Craniofacial distraction osteogenesis: a review of the literature: Part 1: Clinical studies. *Int J Oral Maxillofac Surg*, 2001;30:89–103.
27. Mofid MM, Manson PN, Robertson BC, et al. Craniofacial distraction osteogenesis: a review of 3278 cases. *Plast Reconstr Surg*, 2001; 108:1103–17.
28. Suhr MA, Kreusch T. Technical considerations in distraction osteogenesis. *Int J Oral Maxillofac Surg*, 2004;33:89–94.
29. Jacobson, R.L. and Schendel, S.A. Treating Obstructive Sleep Apnea: The Case for Surgery. *American Journal of Orthodontics and Dentofacial Orthopedics*, 2012; 142:435–442.
30. Alanko, O.M., Svedström-Oristo, A.L. and Tuomisto, M.T. Patients' Perceptions of Orthognathic Treatment, Well-Being, and Psychological or Psychiatric status: A Systematic Review. *Acta Odontologica Scandinavica*, 2010; 68:249–260.
31. Oliveira De Felippe, N.L., Da Silveira, A.C., Viana, G., et al. Relationship between Rapid Maxillary Expansion and Nasal Cavity Size and Airway Resistance: Short- and Long-Term Effects. *American Journal of Orthodontics and Dentofacial Orthopedics*. 2008; 134:370–382.
32. Şençimen M, Altuğ HA, Akçam T, Erdemci F, Bayar GR, Altuğ H, Arıcı G. Mandibular Distraction Osteogenesis fort the Treatment of an Obstructive Sleep Apnea Patient

- with Orthognathic Anomaly: A Case Report and Literature Review. *Case Reports in Clinical Medicine*, 2014, 3:621-630.
- 33. Tsui WK, Yang Y, Cheung LK, Leung YY. Distraction osteogenesis as a treatment of obstructive sleep apnea syndrome: A systematic review. *Medicine (Baltimore)*, 2016;95(36):e4674.
  - 34. Li J, Zhu S, Wang T, et al. Staged treatment of temporomandibular joint ankylosis with micrognathia using mandibular osteodistraction and advancement genioplasty. *J Oral Maxillofac Surg*, 2012;70: 2884–92.
  - 35. Rachmiel A, Emodi O, Aizenbud D. Management of obstructive sleep apnea in pediatric craniofacial anomalies. *Ann Maxillofac Surg*, 2012;2:111–5.
  - 36. Wang X, Liang C, Yin B. Distraction osteogenesis in correction of mandibular micrognathia accompanying obstructive sleep apnea syndrome. *Zhonghua Yi Xue Za Zhi*, 2001;81:978–82.
  - 37. Looby JF, Schendel SA, Lorenz HP, et al. Airway analysis: with bilateral distraction of the infant mandible. *J Craniofac Surg*, 2009;20:1341–6.
  - 38. Rachmiel A, Aizenbud D, Pillar G, et al. Bilateral mandibular distraction for patients with compromised airway analyzed by three dimensional CT. *Int J Oral Maxillofac Surg*, 2005;34:9–18.
  - 39. Li J, Zhu S, Wang T, et al. Staged treatment of temporomandibular joint ankylosis with micrognathia using mandibular osteodistraction and advancement genioplasty. *J Oral Maxillofac Surg*, 2012;70:2884–92.
  - 40. Feiyun P, Wei L, Jun C, et al. Simultaneous correction of bilateral temporomandibular joint ankylosis with mandibular micrognathia using internal distraction osteogenesis and 3-dimensional craniomaxillofacial models. *J Oral Maxillofac Surg*, 2010;68:571–7.
  - 41. Wang X, Wang XX, Liang C, et al. Distraction osteogenesis in correction of micrognathia accompanying obstructive sleep apnea syndrome. *Plast Reconstr Surg*, 2003;112:1549–59.
  - 42. Mitsukawa N, Satoh K, Suse T, et al. Clinical success of mandibular distraction for obstructive sleep apnea resulting from micrognathia in 10 consecutive Japanese young children. *J Craniofac Surg*, 2007; 18:948–53.
  - 43. Burstein FD, Williams JK. Mandibular distraction osteogenesis in Pierre Robin sequence: application of a new internal single-stage resorbable device. *Plast Reconstr Surg*, 2005;115:61–9.
  - 44. Genecov DG, Barcelo CR, Steinberg D, et al. Clinical experience with the application of distraction osteogenesis for airway obstruction. *J Craniofac Surg*, 2009;20(suppl 2):1817–21.
  - 45. Hsieh YJ, Liao YF. Effects of maxillomandibular advancement on the upper airway and surrounding structures in patients with obstructive sleep apnoea: a systematic review. *Br J Oral Maxillofac Surg*, 2013; 51:834–40.
  - 46. Kole H. Surgical operations on the alveolar ridge to correct occlusal abnormalities. *Oral Surg Oral Med Oral Pathol*, 1959;12:277–288.
  - 47. Rachmiel A, Srouji S, Emodi O, et al. Distraction osteogenesis for tracheostomy dependent children with severe micrognathia. *J Craniofac Surg*, 2012;23:459–63.
  - 48. Guilleminault C. Obstructive sleep apnea syndrome and its treatment in children: areas of agreement and controversy. *Pediatr Pulmonol*, 1987;3:429–36.