BÖLÜM 13

ORTODONTİDE SINIF III KAMUFLAJ SINIRLARI

Gizem Mine TÜRKSEVER[1]
Veysel KAYI[2]

SINIF III KAMUFLAJ TEDAVİSİ: GENEL BAKIŞ VE SINIRLAR

İskeletsel Sınıf III maloklüzyonların tedavi zamanlaması konusunda farklı görüşler bulunmaktadır(1). Bazı yazarlar erken dönemde tedaviye başlanmasının oklüzal ilişkileri düzeltme, deformitenin şiddetini azaltma ve psikososyal gelişime katkı sağlama açısından avantajlı olduğunu savunurken (1–3), bazı çalışmalar erken ve ileri dönem tedavi arasında anlamlı fark göstermemiştir (4,5). Bununla birlikte, pubertal büyüme sonrası mandibular prognatizmin yeniden ortaya çıkabileceği ve ikinci tedavi gereksinimi doğabileceği belirtilmiştir (6). Ayrıca, kullanılan fonksiyonel apareylerin başarısının, Sınıf II maloklüzyonlarda uygulanan fonksiyonel apareylerde olduğu gibi, büyük ölçüde hasta kooperasyonuna bağlı olduğu bildirilmektedir(7). Bu farklılıklar, yalnızca tedavi zamanlamasını değil, aynı zamanda uygulanacak tedavi yönteminin seçiminde de belirleyici olmaktadır. Sınıf III maloklüzyonların tedavisinde yaklaşım; iskeletsel bozukluğun şiddetine, hastanın yüz estetiğine ve beklentilerine göre şekillenir (8,9). Hafif-orta düzeyde bozukluklarda, yüz profilinden memnun olan veya cerrahi istemeyen hastalarda kamuflaj tedavisi, cerrahiye alternatif olarak tercih edilebilmektedir (8–10).

Kamuflaj tedavisi, hafif ile orta derecede iskeletsel uyumsuzluk gösteren ve yüz profilinin estetik açıdan kabul edilebilir olduğu hastalarda uygulanabilen bir tedavi alternatifidir. Bu yaklaşım, büyüme ve gelişimini tamamlamış bireylerde, ortognatik cerrahiye gerek duyulmadan iskeletsel uyumsuzluğun dentoalveoler düzeyde kompanse edilmesini hedefler(11,12).

[1] Arş. Gör., Karadeniz Teknik Üniversitesi, Diş Hekimliği Fakültesi, Ortodonti AD., turksevermine@gmail.com, ORCID iD: 0009-0009-4251-5399
[2] Arş. Gör., Karadeniz Teknik Üniversitesi, Diş Hekimliği Fakültesi, Ortodonti AD., veyselkay@gmail.com, ORCID iD: 0009-0000-1315-0735

DOI: 10.37609/akya.3843.c1179

Bu kriterleri karşılayan hastalarda, ön çapraz kapanış tedavisinin yaklaşık %90 oranında stabil olduğu bildirilmiştir.

SONUÇ

Sınıf III iskeletsel maloklüzyonun kamuflaj tedavisi ile yönetimi, dikkatli vaka seçimi ve bireysel hasta özelliklerinin ayrıntılı değerlendirilmesini gerektirir. Bu karar sürecinde; iskeletsel uyumsuzluğun derecesi, yumuşak doku profili, kesici diş angulasyonları, nasolabial açı, ön yüz oranları, periodontal durum ve özellikle mandibular büyüme potansiyeli gibi parametreler göz önünde bulundurulmalıdır.

Cerrahiye hazırlık gerektirmeyen bu yaklaşımda, farklı ortodontik teknikler kullanılarak dental kompanzasyon hedeflenir. Maksiller dişlerin mezializasyonu ve mandibular arkın distalizasyonu bu tedavinin temel mekanizmalarını oluşturur. Bu hedeflere ulaşmak için intermaksiller elastikler, diş çekimli yaklaşımlar (özellikle alt premolar, kesici veya molar çekimleri), yüz maskesi, iskeletsel ankraj aygıtları gibi çeşitli stratejiler kullanılabilir. Uygun teknik seçimi; alt yüz yüksekliği, dental çapraşıklık miktarı, mandibular düzlem açısı ve hasta kooperasyonu gibi faktörlere bağlıdır.

İskeletsel ankraj sistemleri (mini vidalar ve mini plaklar), hasta kooperasyonunun düşük olduğu durumlarda sürekli ve kontrollü kuvvet uygulama imkânı sunarak kamuflaj tedavisinin etkinliğini artırır.

Sınıf III kamuflaj tedavisi, günümüzde hâlâ ortodontistler için zorluklar barındıran bir yaklaşım olsa da; doğru hasta seçimi, uygun biyomekanik planlama ve stabiliteyi destekleyen uygulamalar ile başarılı sonuçlar elde edilebilir. Tedavi sonrası stabilite için, büyümenin tamamlanmış olması, ideal overjet/overbite ilişkisi ve fonksiyonel interkuspidasyonun sağlanması büyük önem taşımaktadır.

KAYNAKLAR

1. Proffit, W.R., Fields, H.W., Larson, B. and Sarver DM. Contemporary Orthodontic (Proffit, 2018). Elsevier Health Sciences. Elsevier; 2018. 5–24 p.
2. Campbell P M. The Dilemma of Class III Treatment | The Angle Orthodontist
3. Delaire J. Maxillary development revisited: relevance to the orthopaedic treatment of Class III malocclusions. Eur J Orthod
4. Baik HS. Clinical results of the maxillary protraction in Korean children. Am J Orthod Dentofacial Orthop
5. Yüksel S, Üçem TT, Keykubat A. Early and late facemask therapy. Eur J Orthod
6. Lu YC. Craniofacial morphology of adolescent mandibular prognathism | The Angle Orthodontist
7. Pala Mutlu B, Gülnar B, Öztürk T. Dentoskeletal effects of the cast-splint Herbst, twin-block, and twin-force bite corrector devices used to correct class II malocclusion : Three-year follow-up. J Orofac Orthop

8. de Lima E, Brum F, Mezomo M, Pasquali CE, Farret M. Orthodontic treatment of Class III malocclusion with lower extraction and anchorage with mini implants: Case report. J World Fed Orthod
9. Kumaresan J, Kumar TS, Kumar S, Kumaresan J, Kumar TS, Kumar S. Skeletal class III camouflage by mandibular incisor extraction: A case report. APOS Trends in Orthodontics
10. Farret MM, Farret MMB. Skeletal class III malocclusion treated using a non-surgical approach supplemented with mini-implants: A case report. J Orthod
11. Baik HS. Limitations in Orthopedic and Camouflage Treatment for Class III Malocclusion. Semin Orthod
12. Ngan W Peter. Treatment Strategies for Developing and Nondeveloping Class III Malocclusions.
13. Burns NR, Musich DR, Martin C, Razmus T, Gunel E, Ngan P. Class III camouflage treatment: What are the limits? American Journal of Orthodontics and Dentofacial Orthopedics
14. Kerr WJ, Miller S, Dawber JE. Class III malocclusion: surgery or orthodontics? Br J Orthod
15. Liu H, Zhang Y, Lu W, Yang Y, Liu X, Chen S, et al. Lower incisor position in skeletal Class III malocclusion patients: a comparative study of orthodontic camouflage and orthognathic surgery. Angle Orthod
16. Eslami S, Faber J, Fateh A, Sheikholaemmeh F, Grassia V, Jamilian A. Treatment decision in adult patients with class III malocclusion: surgery versus orthodontics. Prog Orthod
17. Sato S, Suzuki Y. Relationship between the development of skeletal mesio-occlusion and posterior tooth-to-denture base discrepancy--its significance in the orthodontic reconstruction of skeletal Class III malocclusion. Nihon Kyosei Shika Gakkai Zasshi. 1988 Dec;47(4):796–810.
18. Janson G, Prado De Souza JE, De Andrade Alves F, Andrade P, Nakamura A, Roberto De Freitas M, et al. Extreme dentoalveolar compensation in the treatment of Class III malocclusion. American Journal of Orthodontics and Dentofacial Orthopedics
19. Özel HE, Pala Mutlu B, Özel MB. Cephalometric analysis in adults with tympanic membrane atelectasis. Cranio
20. Tseng YC, Pan CY, Chou ST, Liao CY, Lai ST, Chen CM, et al. Treatment of adult Class III malocclusions with orthodontic therapy or orthognathic surgery: Receiver operating characteristic analysis. American Journal of Orthodontics and Dentofacial Orthopedics
21. Ning F, Duan Y, Huo N. Camouflage treatment in skeletal Class III cases combined with severe crowding by extraction of four premolars. Orthodontic Waves
22. Stellzig-Eisenhauer A, Lux CJ, Schuster G. Treatment decision in adult patients with Class III malocclusion: Orthodontic therapy or orthognathic surgery? American Journal of Orthodontics and Dentofacial Orthopedics
23. Baik HS. Limitations in Orthopedic and Camouflage Treatment for Class III Malocclusion. Semin Orthod
24. Thiem LC, Rank P, Schmid JQ, Janssens Y, Bettenhäuser-Hartung L, Wiechmann D. Favourable dentoalveolar changes after lower premolar extractions for Class III camouflage with completely customized lingual appliances. Head Face Med
25. Deswita Y, Soegiharto BM, Tarman KE. Camouflage treatment of skeletal Class III malocclusion in an adult cleft-palate patient using passive self-ligating system. American Journal of Orthodontics and Dentofacial Orthopedics
26. Sha HN, Lim SY, Kwon SM, Cha JY. Camouflage treatment for skeletal Class III patient with facial asymmetry using customized bracket based on CAD/CAM virtual orthodontic system: A case report. Angle Orthodontist
27. Aragón MLC, Bichara LM, Flores-Mir C, Almeida G, Normando D. Efficiency of compensatory orthodontic treatment of mild Class III malocclusion with two different bracket systems. Dental Press J Orthod
28. Kreichati S, Kassis A, Aboujaoude RF, Akl R. Influence of orthodontic bracket prescription on smile attractiveness in patients with different sagittal skeletal patterns: A 3-dimensional cross-sectional study. American Journal of Orthodontics and Dentofacial Orthopedics

29. Bellini-Pereira S, Pinzan A, Castillo AAD, Janson G, Sakoda KL, Cury SEN, et al. Class III malocclusion camouflage treatment in adults: A Systematic Review. Journal of Dentistry Open Access. 2019 Nov 29;1–12.
30. Seo YJ, Chung KR, Kim SH, Nelson G. Camouflage treatment of skeletal Class III malocclusion with asymmetry using a bone-borne rapid maxillary expander. Angle Orthodontist
31. Thongudomporn U, Charoemratrote C, Jearapongpakorn S. Changes of anterior maxillary alveolar bone thickness following incisor proclination and extrusion. Angle Orthodontist
32. Liu H, Li JX. Non-surgical treatment of an Angle Class III malocclusion in adults. Int J Clin Exp Med
33. He S, Gao J, Wamalwa P, Wang Y, Zou S, Chen S. Camouflage treatment of skeletal Class III malocclusion with multiloop edgewise arch wire and modified Class III elastics by maxillary mini-implant anchorage. Angle Orthodontist
34. Ngan P, Moon W. Evolution of Class III treatment in orthodontics. American Journal of Orthodontics and Dentofacial Orthopedics
35. Le LN, Do TT, Le KPV. Correcting Class III Malocclusion Using Multiloop Edgewise Archwire (MEAW) Combines Temporary Anchorage Devices (TADs) With Modified Class III Elastics for Camouflage Treatment of in Adolescent: A Case Report. Case Rep Dent
36. Wang F, Liu P, Ding B. A skeletal Class III young adult with severe maxillary transverse deficiency treated with maxillary skeletal expander. Angle Orthod
37. Tai K, Park JH, Tatamiya M, Kojima Y. Distal movement of the mandibular dentition with temporary skeletal anchorage devices to correct a Class III malocclusion. American Journal of Orthodontics and Dentofacial Orthopedics
38. Yeon BM, Lee NK, Park JH, Kim JM, Kim SH, Kook YA. Comparison of treatment effects after total mandibular arch distalization with miniscrews vs ramal plates in patients with Class III malocclusion. American Journal of Orthodontics and Dentofacial Orthopedics
39. Kim YB, Bayome M, Park JH, Lim HJ, Mo SS, Lee NK, et al. Displacement of mandibular dentition during total arch distalization according to locations and types of TSADs: 3D Finite element analysis. Orthod Craniofac Res
40. Setvaji NR, Sundari S. Effect of Timing of Third Molar Extraction on the Rate of Mandibular En Masse Distalization Using Buccal Shelf Implants – A Randomized Controlled Trial. South East Eur J Public Health
41. Sun D, Kim HJ, Noh HK, Park HS. More molar distal movement than pretreatment cone-beam computed tomography posterior space available at the root level in mandibular dentition distalization with microimplants. Angle Orthod
42. Zhang K, Li J, Yu L, Sun W, Xia K, Zhao Z, et al. Extraction camouflage treatment of a skeletal Class III malocclusion with severe anterior crowding by miniscrews and driftodontics in the mandibular dentition. Eur J Med Res
43. Vasconcelos G, Kjellsen K, Preus H, Vandevska-Radunovic V, Hansen BF. Prevalence and severity of vestibular recession in mandibular incisors after orthodontic treatment: A case-control retrospective study. Angle Orthodontist
44. Owen AH. Single lower incisor extractions. J Clin Orthod. 1993 Mar;27(3):153–60.
45. Canut JA. Mandibular incisor extraction: Indications and long-term evaluation. Eur J Orthod
46. Adeni M, Parameswaran R, Vijayalakshmi D, Sainulabdeen J. Multi-disciplinary orthodontic camouflage treatment of a severe skeletal class III malocclusion with 1 year follow-up - A case report. Indian Journal of Dental Research
47. Needham richard. Aligner Treatment in Lower Incisor Extraction Case.
48. Lin J, Gu Y. Lower second molar extraction in correction of severe skeletal class III malocclusion. Angle Orthod
49. Ngoc VTN, Phuong NTT, Anh NV. Skeletal class iii malocclusion with lateral open bite and facial asymmetry treated with asymmetric lower molar extraction and lingual appliance: a case report. Int J Environ Res Public Health
50. Sun C, Zhou Z, Shi H, Algahefi A, Li Z. Enhanced pendulum appliance utilizing temporary

anchorage device-based Nance arch and modified springs for optimized molar distalization control: a case report. Angle Orthod
51. He Y, Wang Y, Wang X, Wang J, Bai D, Guo Y. Nonsurgical treatment of a hyperdivergent skeletal Class III patient with mini-screw-assisted mandibular dentition distalization and flattening of the occlusal plane. Angle Orthodontist
52. Pala Mutlu B. Ortodontide Vertikal Büyüme Yönünün Kontrolü ve Tedavi Başarısına Etkisi. 2021
53. Tseng LLY, Chang CH, Roberts WE. Diagnosis and conservative treatment of skeletal Class III malocclusion with anterior crossbite and asymmetric maxillary crowding. American Journal of Orthodontics and Dentofacial Orthopedics
54. Martina H, De Stefano Adriana A, Ernesto B, Alessandra I, Roberto AV, Gabriella G. Lower molar distalization using clear aligners: Is it effective? A systematic review. J Orthod Sci
55. Pala Mutlu B. Ortodontide Hızlı Maksiller Genişletme. 2021
56. Jackson GW, Kravitz ND. Expansion/Facemask Treatment of an Adult Class III Malocclusion. Case Rep Dent
57. Alotaibi S. Orthodontic camouflage treatment of pseudo-Class III malocclusion on skeletal class III Base complicated with canine impaction treated with temporary anchorage devices: A case report. Clin Case Rep
58. Weir T. Clear aligners in orthodontic treatment. Aust Dent J
59. Padmanabhan A, Khan Y, Lambate V, K U, Naveed N, Singh M, et al. Efficacy of Clear Aligners in Treating Class III Malocclusion With Mandibular Molar Distalization: A Systematic Review. Cureus
60. Pinho T, Melo D, Ferreira S, Gonçalves M. Distalization with Clear Aligners: Accuracy, Impact of Mini-Screws, and Clinical Outcomes. Dent J (Basel)
61. Pinho T, Rocha D. Asymmetrical skeletal Class III camouflage treatment with clear aligners and miniscrew anchorage. J Clin Orthod. 2021 Dec;55(12):757–68.
62. Almagrami I, Almaqrami M, Zhu L, Qiao Y. Class III correction and enhanced periodontal health with aligner treatment in a 53-year-old patient. Angle Orthod
63. Kim YC, Song S Il, Lee SH, Sim HY, Kim YH, Chae HS. Soft tissue paradigm based Treatment planning in skeletal class III. Clin Oral Investig
64. Watanabe JHM, Fitarelli F, de Freitas DS, Cançado RH, de Oliveira RCG, de Oliveira RCG, et al. Comparison of the facial profile attractiveness in Class III borderline patients after surgical or compensatory orthodontic treatment. J Clin Exp Dent
65. Bou Wadi MN, Freitas KMS, Freitas DS, Cançado RH, Oliveira RCG de, Oliveira RCG de, et al. Comparison of Profile Attractiveness between Class III Orthodontic Camouflage and Predictive Tracing of Orthognathic Surgery. Int J Dent
66. Jiang J, Wu J, Yu W, Yu J, Xiong Q, Liu D, et al. Comparative evaluation of periodontally accelerated osteogenic orthodontics (PAOO) versus traditional camouflage orthodontic treatment in adult patients with skeletal class III malocclusion. BMC Oral Health
67. Alhammadi MS, Almashraqi AA, Khadhi AH, Arishi KA, Alamir AA, Beleges EM, et al. Orthodontic camouflage versus orthodontic-orthognathic surgical treatment in borderline class III malocclusion: a systematic review. Clin Oral Investig
68. Kawai N, Watanabe M, Shibata M, Horiuchi S, Fushima K, Tanaka E. Treatment decision of camouflage or surgical orthodontic treatment for skeletal Class III patients based on analysis of masticatory function. J Dent Sci
69. Rustico L, Ronsivalle V, Iaculli F, Spagnuolo G, Isola G, Giudice A Lo. Class III Orthodontic Camouflage: Is the "Ideal" Treatment Always the Best Option? A Documented Case Report. Case Rep Dent
70. Martino F, Peña M, Joubert R. Surgical-orthodontic retreatment of a severe skeletal class iii malocclusion following an orthodontic camouflage. Dental Press J Orthod
71. Farret MM, Farret MMB, Farret AM. Orthodontic camouflage of skeletal Class III malocclusion with miniplate: a case report. Dental Press J Orthod