



counterclockwise rotation orthognathic and sleep apnea



Search

Advanced

User Guide

Search results

Save Email Send to Display options

Ann Plast Surg. 2021 Jun 1;86(6):640-646. doi: 10.1097/SAP.0000000000002580.

Counterclockwise Rotational Orthognathic Surgery for the Obstructive Sleep Apnea in Class II Dentofacial Deformity: Polysomnography and 3D Computed Tomographic Analysis

Jong Woo Choi¹, Woo Shik Jeong¹, Min Kyu Kang¹, Jang Yeol Lee², Yoo Sam Chung³

Affiliations + expand

PMID: 33346553 DOI: 10.1097/SAP.0000000000002580

Abstract

Traditionally, maxillomandibular advancement is an orthognathic surgical procedure that has been used to manage obstructive sleep apnea in patients not able or willing to maintain adherence to continuous positive airway pressure therapy or for patient who are not able to adhere to treatment. However, maxillomandibular advancement often leads to unsatisfactory cosmetic results. This prospective study investigated functional and esthetic outcomes using polysomnography and 3-dimensional computed tomography, after counterclockwise rotational orthognathic surgery. We enrolled 17 patients with obstructive sleep apnea, who underwent orthognathic surgery at single institution between March 2013 and December 2018. After 12 months, the patients' mean self-rated score for facial appearance, using a 10-step visual analog scale, was 7.36. The preoperative apnea-hypopnea index and respiratory disturbance index were 34.70 and 37.45, respectively; postoperative indices were 11.60 and 12.69, respectively (P = 0.003, 0.003). The mean posterior pharyngeal airway space increased from 5357.88 mm³ preoperatively to 8481.94 mm³ after 6 postoperative months. Counterclockwise rotational orthognathic surgery for the correction of obstructive sleep apnea turned out to be the ideal solution not only in the correction of the sleep apnea, but also in the facial esthetics.

Copyright © 2020 Wolters Kluwer Health, Inc. All rights reserved.

Conflict of interest statement

Conflicts of interest and sources of funding: This study was supported by a grant (2012-0676) from the Asan Institute for Life Sciences, Asan Medical Center, Seoul, Korea. The authors declare no conflict of interest.

Similar articles

[Change in Posterior Pharyngeal Space After Counterclockwise Rotational Orthognathic Surgery for Class II Dentofacial Deformity Diagnosed With Obstructive Sleep Apnea Based on Cephalometric Analysis.](#)

Jeong WS, Kim YC, Chung YS, Lee CY, Choi JW.

J Craniofac Surg. 2017 Jul;28(5):e488-e491. doi: 10.1097/SCS.0000000000003761.

PMID: 28665848

[Virtual surgical planning improves surgical outcome measures in obstructive sleep apnea surgery.](#)

Barrera JE.

Laryngoscope. 2014 May;124(5):1259-66. doi: 10.1002/lary.24501. Epub 2013 Dec 6.

PMID: 24357526

[Maxillomandibular advancement for obstructive sleep apnea.](#)

Li KK.

J Oral Maxillofac Surg. 2011 Mar;69(3):687-94. doi: 10.1016/j.joms.2010.09.014. Epub 2010 Dec 24.

PMID: 21185642

[Improved apnea-hypopnea index and lowest oxygen saturation after maxillomandibular advancement with or without counterclockwise rotation in patients with obstructive sleep apnea: a meta-analysis.](#)

Knudsen TB, Laulund AS, Ingerslev J, Homøe P, Pinholt EM.

J Oral Maxillofac Surg. 2015 Apr;73(4):719-26. doi: 10.1016/j.joms.2014.08.006. Epub 2014 Aug 11.

PMID: 25443377 Review.

[Maxillomandibular Advancement for Treatment of Obstructive Sleep Apnea: A Meta-analysis.](#)

Zaghi S, Holty JE, Certal V, Abdullatif J, Guilleminault C, Powell NB, Riley RW, Camacho M.

JAMA Otolaryngol Head Neck Surg. 2016 Jan;142(1):58-66. doi: 10.1001/jamaoto.2015.2678.

PMID: 26606321 Review.

[See all similar articles](#)

Cited by 1 article

[Current trends in orthognathic surgery.](#)

Seo HJ, Choi YK.

Arch Craniofac Surg. 2021 Dec;22(6):287-295. doi: 10.7181/acfs.2021.00598. Epub 2021 Dec 20.

PMID: 34974683 [Free PMC article.](#)

References

- Bazurto Zapata MA, Martinez-Guzman W, Vargas-Ramirez L, et al. Prevalence of central sleep apnea during continuous positive airway pressure (CPAP) titration in subjects with obstructive sleep apnea syndrome at an altitude of 2640 m. *Sleep Med.* 2015;16:343-346.
- Heinzer R, Vat S, Marques-Vidal P, et al. Prevalence of sleep-disordered breathing in the general population: the HypnoLaus study. *Lancet Respir Med.* 2015;3:310-318.
- Pinto AM, Devaraj U, Ramachandran P, et al. Obstructive sleep apnea in a rural population in South India: feasibility of health care workers to administer level III sleep study. *Lung India.* 2018;35:301-306.
- Peppard PE, Young T, Barnett JH, et al. Increased prevalence of sleep-disordered breathing in adults. *Am J Epidemiol.* 2013;177:1006-1014.
- Abramson Z, Susarla S, August M, et al. Three-dimensional computed tomographic analysis of airway anatomy in patients with obstructive sleep apnea. *J Oral Maxillofac Surg.* 2010;68:354-362.

Show all 43 references

MeSH terms

- > Dentofacial Deformities*
- > Humans
- > Mandibular Advancement*
- > Maxilla
- > Orthognathic Surgery*
- > Orthognathic Surgical Procedures*
- > Polysomnography
- > Prospective Studies
- > Sleep Apnea, Obstructive* / diagnostic imaging
- > Sleep Apnea, Obstructive* / etiology
- > Sleep Apnea, Obstructive* / surgery
- > Treatment Outcome

Related information

MedGen

LinkOut - more resources

Full Text Sources

[Ovid Technologies, Inc.](#)

[Wolters Kluwer](#)

Medical

[Genetic Alliance](#)

FULL TEXT LINKS



ACTIONS

Cite

Favorites

SHARE



PAGE NAVIGATION

Title & authors

Abstract

Conflict of interest statement

Similar articles

Cited by

References

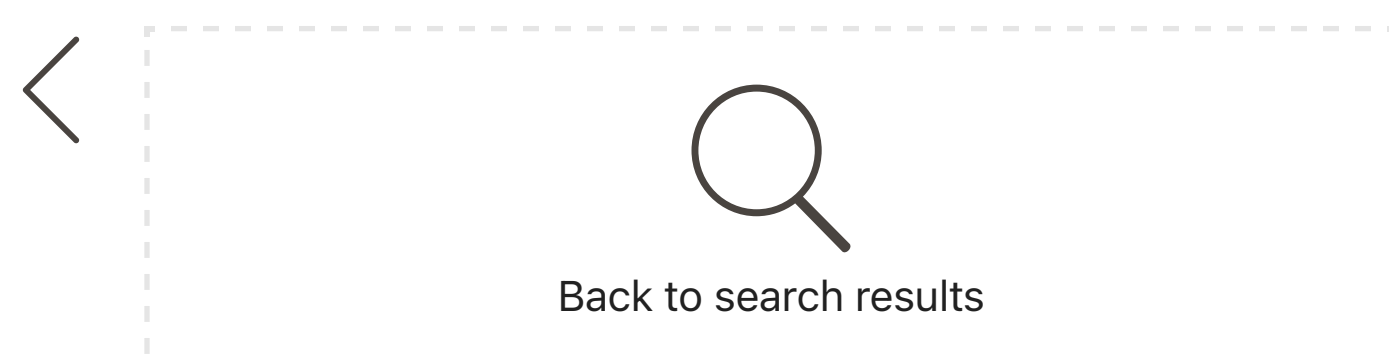
MeSH terms

Related information

LinkOut - more resources

NEXT RESULT 2 of 15

Search result 1 of 15 for counterclockwise rotation orthognathic and sleep apnea



Improved **apnea-hypopnea** index and lowest oxygen saturation after maxillomandibular advancement with or without **counterclockwise rotation** in patients with obstructive **sleep apnea**: a meta-analysis.

Knudsen TB, et al. J Oral Maxillofac Surg. 2015. PMID: 33346553

Review.

PURPOSE: This study investigated whether patients with obstructive **sleep apnea** (OSA) who undergo maxillomandibular advancement ...

