

When Is a Monobloc Not a Monobloc? Cautions for Clinical Practice

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The authors of the recently published *Journal of Clinical Sleep Medicine* manuscript that compared mandibular advancement device (MAD) and nasal continuous positive airway pressure (CPAP) treatment outcomes¹ are to be commended for their contribution to the area of MAD therapy. Their findings strengthen the evidence for positional obstructive sleep apnea (P-OSA) as a clinical predictor for MAD therapy outcome. The finding that MADs are as efficacious as CPAP in those with P-OSA supports the expanding use of MADs in the treatment of obstructive sleep apnea (OSA). This is not the first study to report equivalent outcomes when comparing MAD treatment to CPAP for those with OSA. Hoekema² previously reported the findings of a randomized controlled trial demonstrating equivalence of treatment outcome in mild-to-moderate OSA patients without controlling for position. Hopefully, given that compliance with CPAP is poor and likely to be abandoned by patients, more patients will be given the opportunity to receive MAD therapy: an equivalent alternative.

There are concerns with some of the terms used in the manuscript and how they may be interpreted. The authors repeatedly term the appliance used a “monobloc” appliance as opposed to an “adjustable or titratable” appliance. The methods used in this study may mislead readers as to the results likely to be achieved with monobloc appliances. Monobloc appliances are single piece devices fabricated in a fixed, non-adjustable lower jaw position (protrusion). Clinicians expect to fabricate a monobloc MAD at one protrusive position and leave it there for the entire course of treatment until the device is worn out years later.

Titratable or adjustable MADs allow for increases (or decreases) in protrusive position at any time in the course of treatment by incorporating expansion screws or other mechanisms.

The present study by Takaesu et al.¹ effectively turned a monobloc into an adjustable MAD. The MADs in the study were sequentially remade after being cut apart and repositioned at increased protrusive positions as required to achieve optimal outcome.

Many previous MAD studies, supposedly using “monoblocs,” have used similar methodology.³⁻⁵ These methods can lead to the false conclusion that monobloc MADs are equivalent to adjustable MADs in treating OSA. This conclusion in turn may lead to inadequate treatment of patients when clinics cannot duplicate the research procedures. Monoblocs in clinical practice are not cut apart sequentially and repositioned. This practice would be prohibitive in terms of clinician time and laboratory expense. It is only feasible under research conditions.

The cost of a clinical process using monobloc MADs repeatedly remade at increasing protrusive position is likely to be more than that employing an adjustable device. Thus

the suggestion that a monobloc is a cost-effective alternative is misleading. The conclusion that an effective appliance is custom-made and titratable (adjustable) remains.⁶

While the authors have contributed to the field demonstrating equivalent outcomes achieved comparing MAD to CPAP treatment, the findings do not contradict the clinical guideline recommendation that “When oral appliance therapy is prescribed by a sleep physician for an adult patient with obstructive sleep apnea, we suggest that a qualified dentist use a *custom, titratable appliance*...”⁷

CITATION

Dort LC. When is a monobloc not a monobloc? Cautions for clinical practice. *Journal of Dental Sleep Medicine* 2016;3(4):109.

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SUBMISSION & CORRESPONDENCE INFORMATION

Submitted for publication September, 2016

Accepted for publication September, 2016

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DISCLOSURE STATEMENT

Dr. Dort is Editor-in-Chief of the *Journal of Dental Sleep Medicine*.