Mandibular Advancement Devices in the Treatment of Obstructive Sleep Apnea: Experience from Dubrava University Hospital

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Abstract

Snoring and obstructive sleep apnea (OSA) are among the most common sleep-related disorders and represent a significant public health problem because of their association with cardiovascular, metabolic, and neurocognitive consequences. Reduced oropharyngeal muscle tone during sleep leads to mandibular retrusion, airway narrowing, and soft tissue vibration, causing snoring, while mechanical collapse of the pharynx results in episodes of apnea and hypopnea. Diagnostic evaluation includes home respiratory polygraphy and laboratory polysomnography. Dentists play an important role in recognizing symptoms and referring patients for specialist assessment. Although continuous positive airway pressure (CPAP) therapy remains the gold standard for moderate to severe OSA, limited patient adherence has encouraged the development of oral appliances as minimally invasive and well-tolerated alternatives. Mandibular advancement devices (MADs) move the mandible and tongue base forward, increasing pharyngeal patency and reducing upper airway collapsibility. Silensor-sl, a two-piece mandibular advancement device with adjustable connectors, enables individualized protrusion titration while preserving mandibular movements and providing a high level of comfort. Studies have reported an average reduction in the apnea–hypopnea index (AHI) of 54% and a reduction in snoring in 82% of cases, together with favorable patient adherence. Indications for MADs include primary snoring and mild to moderate OSA, particularly in patients who cannot tolerate CPAP. Contraindications described in the presented approach include severe OSA (AHI >30), active temporomandibular disorders, insufficient dentoalveolar anchorage, and pronounced prognathism. Long-term adverse effects may include mild jaw pain, xerostomia, and irreversible occlusal changes, emphasizing the importance of regular follow-up. Mandibular advancement devices, including Silensor-sl, represent an effective, safe, and clinically relevant treatment option for selected patients. Dentists have a key role in patient selection, appliance fabrication, and treatment monitoring.

Keywords: obstructive sleep apnea; mandibular advancement device; snoring

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Mandibularne protruzijske udlage u liječenju opstruktivne apneje u spavanju: iskustva iz Kliničke bolnice Dubrava

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Sažetak

Hrkanje i opstruktivna apneja u spavanju (OSA) među najčešćim su poremećajima povezanima sa spavanjem te predstavljaju značajan javnozdravstveni problem zbog povezanosti s kardiovaskularnim, metaboličkim i neurokognitivnim posljedicama. Smanjenje tonusa orofaringealne muskulature tijekom spavanja dovodi do retruzije mandibule, suženja dišnih putova i vibracije mekih tkiva, što uzrokuje hrkanje, dok mehanički kolaps ždrijela rezultira epizodama apneje i hipopneje. Dijagnostička obrada uključuje kućnu respiracijsku poligrafiju i laboratorijsku polisomnografiju. Doktor dentalne medicine ima važnu ulogu u prepoznavanju simptoma i upućivanju bolesnika na specijalističku obradu. Iako je terapija kontinuiranim pozitivnim tlakom u dišnim putovima (CPAP) zlatni standard za umjerenu i tešku OSA-u, ograničena suradljivost bolesnika potaknula je razvoj oralnih naprava kao minimalno invazivne i dobro podnošljive alternative. Mandibularne protruzijske udlage (MAD) pomiču mandibulu i korijen jezika prema naprijed, povećavajući prohodnost ždrijela i smanjujući sklonost kolapsu gornjih dišnih putova. Silensor-sl, dvodijelna protruzijska udlaga s podesivim spojnicama, omogućuje individualnu titraciju protruzije uz očuvanje mandibularnih kretnji i visoku razinu udobnosti. U istraživanjima je zabilježeno prosječno smanjenje indeksa apneje i hipopneje (AHI) od 54 % te smanjenje hrkanja u 82 % slučajeva, uz povoljnu suradljivost bolesnika. Indikacije za primjenu MAD-a uključuju primarno hrkanje i blagu do umjerenu OSA-u, osobito u bolesnika koji ne podnose CPAP. Kontraindikacije navedene u prikazanom pristupu uključuju tešku OSA-u (AHI >30), aktivne temporomandibularne poremećaje, nedostatno dentoalveolarno sidrište i izražen prognatizam. Dugoročne nuspojave mogu uključivati blagu bol u čeljusti, kserostomiju i ireverzibilne okluzijske promjene, što naglašava važnost redovitog praćenja. Mandibularne protruzijske udlage, uključujući Silensor-sl, predstavljaju učinkovitu, sigurnu i klinički relevantnu terapijsku mogućnost za odabrane bolesnike. Doktor dentalne medicine ima ključnu ulogu u odabiru bolesnika, izradi udlage i praćenju liječenja.

Ključne riječi: opstruktivna apneja u spavanju; mandibularna protruzijska udlaga; hrkanje

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