Periodic Limb Movements in Sleep (PLMS): Clinical Significance and a Case Report

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Abstract

Periodic limb movements in sleep (PLMS) are stereotyped, repetitive movements, most commonly involving the lower extremities, occurring at intervals of 20–40 seconds. Their prevalence increases with age and is particularly high in patients with chronic kidney disease, restless legs syndrome (RLS), and obstructive sleep apnea (OSA). The clinical significance of PLMS lies in sleep fragmentation, an increased arousal index (AI), and sympathetic activation, all of which may contribute to adverse cardiovascular consequences. PLMS are identified by polysomnography according to the criteria of the American Academy of Sleep Medicine (AASM). A periodic limb movement index (PLMI) ≥15/hour in the presence of relevant clinical symptoms may suggest periodic limb movement disorder (PLMD), provided that other potential causes have been considered. This report presents a 77-year-old woman referred by a cardiologist because of first- and second-degree atrioventricular block (Wenckebach type) and right bundle branch block (RBBB). Her medical history included arterial hypertension, hyperlipidemia, knee osteoarthritis, and intermittent symptoms of RLS. Overnight polysomnography confirmed severe OSA (AHI 59.6/hour), impaired sleep continuity (sleep efficiency 58.8%; AI 53.4/hour), and PLMS with a moderately elevated PLMI (25.2/hour) but pronounced motor manifestations. Synchronous flexion of the hip and knee, accompanied by hip abduction and rotation and elbow flexion, was recorded, predominantly on the right side. Following successful continuous positive airway pressure (CPAP) titration (residual AHI 5.3/hour), clinical reassessment of PLMS was planned to determine the need for pharmacological treatment. This case highlights the clinical complexity and multifactorial etiology of PLMS and emphasizes the importance of recognizing this condition in the differential diagnosis of sleep disorders. Timely identification of PLMS and PLMD enables appropriate treatment and may help prevent long-term adverse effects on sleep quality and daytime functioning.

Keywords: periodic limb movements in sleep; periodic limb movement disorder; restless legs syndrome; obstructive sleep apnea; polysomnography; CPAP; cardiac conduction abnormalities

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Periodični pokreti udova tijekom spavanja (PLMS): klinički značaj i prikaz bolesnice

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Sažetak

Periodični pokreti udova tijekom spavanja (engl. *periodic limb movements in sleep*, PLMS) stereotipne su, ponavljajuće kretnje, najčešće donjih ekstremiteta, koje se pojavljuju u razmacima od 20 do 40 sekundi. Njihova prevalencija raste s dobi te je osobito visoka u bolesnika s kroničnom bubrežnom bolešću, sindromom nemirnih nogu (RLS) i opstruktivnom apnejom u spavanju (OSA). Klinički značaj PLMS-a očituje se u fragmentaciji spavanja, povećanju indeksa mikrobuđenja (AI) i simpatičkoj aktivaciji, što može pridonijeti nepovoljnim kardiovaskularnim posljedicama. PLMS se utvrđuju polisomnografijom prema kriterijima Američke akademije za medicinu spavanja (AASM). Indeks periodičnih pokreta udova tijekom spavanja (PLMI) ≥15/sat, uz prisutnost odgovarajućih kliničkih simptoma, može upućivati na poremećaj periodičnih pokreta udova tijekom spavanja (PLMD), nakon razmatranja drugih mogućih uzroka. Prikazana je 77-godišnja bolesnica koju je kardiolog uputio zbog atrioventrikularnog bloka prvog i drugog stupnja (Wenckebachov tip) i bloka desne grane (RBBB). U anamnezi su bili prisutni arterijska hipertenzija, hiperlipidemija, osteoartritis koljena i povremeni simptomi sindroma nemirnih nogu. Cjelonoćnom polisomnografijom potvrđena je teška OSA (AHI 59,6/sat), narušen kontinuitet spavanja (učinkovitost spavanja 58,8 %; AI 53,4/sat) te PLMS s umjereno povišenim indeksom (PLMI 25,2/sat), ali izraženim motoričkim manifestacijama. Registrirane su sinkrone fleksije u kuku i koljenu, praćene abdukcijom i rotacijom u kuku te fleksijom u laktu, izraženije na desnoj strani. Nakon uspješne titracije kontinuiranoga pozitivnog tlaka u dišnim putovima (CPAP), uz rezidualni AHI od 5,3/sat, planirana je ponovna klinička procjena PLMS-a radi utvrđivanja potrebe za farmakološkim liječenjem. Prikaz ističe kliničku složenost i multifaktorijalnu etiologiju PLMS-a te važnost njihova prepoznavanja u diferencijalnoj dijagnostici poremećaja spavanja. Pravodobno prepoznavanje PLMS-a i PLMD-a omogućuje odgovarajuće liječenje i može pomoći u sprječavanju dugoročnih nepovoljnih učinaka na kvalitetu spavanja i dnevno funkcioniranje.

Ključne riječi: periodični pokreti udova tijekom spavanja; poremećaj periodičnih pokreta udova tijekom spavanja; sindrom nemirnih nogu; opstruktivna apneja u spavanju; polisomnografija; CPAP; poremećaji srčanog provođenja

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