



Case Report / Olgu sunumu

Transdermal Ginseng Patches as a Rare Trigger of Psychosis: Implications for Herbal Product Safety

Transdermal Ginseng Yamaları ve Psikoz İlişkisi: Bitkisel Ürün Güvenliğinin Önemi

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Abstract

This case report describes a 49-year-old woman who developed ginseng-induced psychosis after using transdermal ginseng patches. Presenting with visual hallucinations, disorganized thoughts, and anxious behavior, she had no prior psychiatric history. Diagnostic tests, including brain imaging and EEG, were normal. The patient's symptoms resolved after discontinuing the patches and receiving risperidone. Ginseng, commonly used for physical and mental fatigue, rarely causes psychosis. This case highlights the potential psychiatric side effects of herbal products, particularly transdermal forms, which lack regulatory oversight. Emergency physicians should consider herbal use in patients with psychotic symptoms, emphasizing the need for caution and regulation of such products.

Keywords: Ginseng, herbal medicine, psychotic disorders, transdermal patch, adverse drug reaction

INTRODUCTION

Ginseng, derived from the root of *Panax* species, is a widely utilized herbal remedy in Asian traditional medicine. It is reputed for its adaptogenic properties in addressing physical fatigue, cognitive enhancement, and sexual dysfunction.

^[1] Despite its therapeutic popularity, ginseng is associated with adverse effects such as nervousness, insomnia, and hypertension, though psychotic manifestations are extremely rare.^[2] The pharmacological activity of ginseng is attributed to ginsenosides, triterpenoid saponins that modulate

Öz

Bu vaka raporu, transdermal ginseng bantları kullandıktan sonra ginseng kaynaklı psikoz geliştiren 49 yaşında bir kadını anlatmaktadır. Görsel halüsinasyonlar, dağınık düşünceler ve kaygılı davranışlar sergileyen hastanın öncesinde psikiyatrik öyküsü yoktu. Beyin görüntüleme ve EEG dahil tanısal testler normaldi. Hastanın semptomları, bantların kesilmesi ve risperidon tedavisi sonrasında tamamen düzeldi. Fiziksel ve zihinsel yorgunluk için yaygın olarak kullanılan ginseng, nadiren psikoza neden olur. Bu vaka, özellikle düzenleyici denetimden yoksun transdermal formlar da dahil olmak üzere bitkisel ürünlerin potansiyel psikiyatrik yan etkilerini vurgulamaktadır. Acil hekimleri, psikotik semptomları olan hastalarda bitkisel ürün kullanımını göz önünde bulundurmalı ve bu tür ürünlerin dikkatli kullanımı ve düzenlenmesi gerekliliğini vurgulamalıdır.

Anahtar Kelimeler: Ginseng, bitkisel ilaç, psikotik bozukluklar, transdermal yama, istenmeyen ilaç reaksiyonu

neurotransmitter systems, including dopaminergic and serotonergic pathways.^[3] While oral consumption of ginseng has been sporadically associated with psychiatric symptoms, no previous cases have implicated transdermal delivery systems. This report presents the first documented case of ginseng-induced psychosis following the use of transdermal patches, highlighting the need for increased clinical awareness of unconventional herbal administration routes.



CASE

A 49-year-old woman with no psychiatric history was brought to the emergency department by her spouse due to acute-onset bizarre behavior over nine hours. The patient exhibited repetitive actions, including compulsive opening faucets and fixating on running water, alongside verbalizing incoherent fears of "drowning in her thoughts." Her husband reported she had applied five over-the-counter transdermal patches, purchased from a local pharmacy, marketed as "energy boosters" containing ginseng extract (**Figure 1**). Vital signs revealed tachycardia (110 bpm) but were otherwise unremarkable. Mental status examination demonstrated increased psychomotor agitation, visual hallucinations (e.g., "seeing shadows swallow the walls"), disorganised thought processes, and profound anxiety.



Figure 1. A sample of the transdermal patches used by the patient

Initial laboratory tests; Complete blood count, electrolytes, renal/hepatic function, thyroid panel, and toxicology screens (urine and blood) were within normal limits. Neuroimaging (CT, MRI, DWI) and electroencephalography (EEG) ruled out structural abnormalities, vascular events, or seizure activity. A neurological consultation confirmed the absence of organic pathology and prompted a psychiatric evaluation. The patient was diagnosed with ginseng-induced psychosis based on the temporal correlation between patch application and symptom onset, coupled with the exclusion of alternative etiologies. Management included immediate discontinuation of the patches and initiation of risperidone 1 mg daily. Within 72 hours, her symptoms resolved completely, and she remained asymptomatic at a one-month outpatient follow-up.

DISCUSSION

Psychosis, characterised by reality distortion through hallucinations, delusions, or disorganised cognition, is typically associated with primary psychiatric disorders but may also arise secondary to drug use, metabolic disorders, or herbal supplements.^[4] This case highlights the under-recognised neuropsychiatric risks of ginseng, particularly via transdermal routes. Despite ginsenosides, the bioactive constituents of ginseng, increasing dopamine and serotonin levels, providing anti-depressant and anxiolytic effects, there are cases of psychosis as an adverse effect of ginseng monopreparations.^[5,6] Transdermal delivery can bypass first-pass metabolism, which increases the bioavailability of bioactive compounds. While this method is beneficial for avoiding hepatic metabolism and ensuring sustained drug release, it also presents unique risks. These include unregulated absorption kinetics and the absence of standardized dosing guidelines.^[7]

The patient's use of multiple patches likely resulted in cumulative ginsenoside exposure exceeding homeostatic thresholds, triggering neurochemical imbalances. Notably, transdermal herbal products are not classified as drugs in many jurisdictions, evading rigorous safety evaluations mandated for medicinal drugs.^[8] A systematic review by Boullata and Nace^[9] identified inconsistent labelling and contamination as critical safety concerns for herbal supplements, with <15% of products providing adequate risk disclosures. This regulatory vacuum is particularly perilous for transdermal formulations, where variable skin permeability and patch composition can lead to unpredictable systemic exposure.^[7] Also variability can arise from unmeasured constituents like ginsenosides, making dose standardization challenging.^[10]

Previous reports of ginseng-induced psychosis are limited to oral consumption. Joshi and Faubion^[11] described a patient who developed manic psychosis after ingesting ginseng tea, with symptoms remitting upon discontinuation. In contrast, transdermal delivery complicates clinical recognition, as patients and providers may overlook topical products during history-taking. This case highlights the need for clinicians to meticulously inquire about all herbal product use including topical, inhaled, or transdermal forms; In patients presenting with acute psychosis. Furthermore, it aligns with emerging evidence that herbal supplements, even in "natural" formulations, possess significant neuropharmacological activity warranting stricter regulatory oversight.^[9]

This case represents the first reported instance of transdermal ginseng-induced psychosis, expanding the documented spectrum of herbal supplement adverse effects. The rapid resolution of symptoms following patch removal and antipsychotic intervention reinforces causality. Clinicians must recognize transdermal herbal products as potential etiologic agents in psychosis, particularly in patients lacking

traditional risk factors. Regulatory agencies should mandate standardized labeling, dose transparency, and adverse effect warnings for herbal transdermal products to mitigate risks. Future research should focus on pharmacokinetic profiling of transdermal ginsenosides and identifying genetic or metabolic vulnerabilities predisposing individuals to neuropsychiatric complications.

ETHICAL DECLARATIONS

Informed Consent: All patients signed the free and informed consent form.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

Note: This case was orally presented at the 3rd International Congress on Emergency Medicine (ICON-EM), hosted at the Rixos Sungate Hotel and Convention Center in Antalya, Turkiye, from November 5 to 8, 2023.

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