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Volatile Liquid Mosquito Repellant Induced Psychosis: A Rare Psychiatric Presentation

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Abstract: This case highlights a rare instance of psychosis induced by occupational exposure to diethyl phthalate, a primary component in certain liquid mosquito repellents. A 48-year-old male exhibited increased irritability, suspiciousness towards family members, and forgetfulness. He had a three-year history of occupational exposure to volatile liquid mosquito repellents containing predominantly diethyl phthalate. Comprehensive evaluations ruled out other causes. MRI revealed toxic encephalopathy. Mental status examination showed anterograde amnesia, persecutory delusions, irritable affect, impaired judgment, and lack of insight. The patient was treated with Sodium Valproate (1g) and Olanzapine (20mg), leading to significant improvement. This case underscores the neuropsychiatric risks associated with prolonged occupational exposure to diethyl phthalate and highlights the need for further research and awareness.

Keywords: *Diethyl Phthalate, Occupational Exposure, Toxic Encephalopathy, Psychosis, Case Report.*

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I. INTRODUCTION

Volatile inhalant use disorder is commonly observed among adolescents due to its abuse potential. However, such occurrences are rare among adults, especially with occupational exposure. This report presents a case of induced psychosis associated with occupational exposure to diethyl phthalate, a chemical used in certain liquid mosquito repellents.

II. PATIENT INFORMATION

- *Demographics: 48-year-old male.*
- *Chief Complaints: Increased irritability, suspiciousness, and forgetfulness.*
- *Occupational History: 3-year exposure to mosquito repellents with diethyl phthalate.*
- *Medical/Psychiatric History: None significant.*
- *Family and Psychosocial History: Non-contributory.*

III. CLINICAL FINDINGS

Anterograde amnesia, persecutory delusions, irritable affect, impaired judgment, and absent insight were noted during clinical examination.

- Timeline
  - 3 years ago: Began occupational use of mosquito repellents with diethyl phthalate.
  - 3 months ago: Onset of irritability and suspiciousness.
  - 1 month ago: Forgetfulness noted.
  - At presentation: Evaluated and diagnosed.
  - Post-treatment: Significant improvement noted.

- Diagnostic Assessment

MRI revealed toxic encephalopathy. Blood and urine investigations were normal. Establishing the causal link to diethyl phthalate was challenging due to limited data, but no alternative explanation was found. Prognosis improved with treatment and exposure cessation.

- Therapeutic Intervention

Sodium Valproate 1g/day and Olanzapine 20mg/day were administered orally with clinical supervision. No dosage changes were needed.

- Follow-up and Outcomes

The patient showed significant improvement. Follow-up testing revealed no abnormalities. No adverse effects were reported.

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IV. DISCUSSION

Diethyl phthalate (DEP) is a plasticizer used in industrial and personal care products. It is readily absorbed through inhalation. Though most studies highlight neurodevelopmental concerns from prenatal exposure, its impact on adults, particularly the CNS, remains underexplored. Animal studies show anxiety-like behavior and cognitive impairment with phthalate exposure. Regulatory agencies highlight its widespread use, yet human data on neurotoxicity are scarce. This case emphasizes the need for research and awareness of DEP's neuropsychiatric risks.

- *Patient Perspective*

The patient reported improved functioning and expressed gratitude for the medical care. He acknowledged the importance of minimizing chemical exposure.

- *Informed Consent*

Written informed consent was obtained from the patient for the publication of this case report.

REFERENCES

[1]. Safarpour S, Ghasemi-Kasman M, Safarpour S, Darban YM. Effects of Di-2-Ethylhexyl Phthalate on central nervous system functions: A narrative review. Curr Neuropharmacol. 2022;20(4):766-76.
[2]. Weaver JA, Beverly BEJ, Keshava N, Mudipalli A, Arzuaga X, Cai C, et al. Hazards of diethyl phthalate (DEP) exposure: A systematic review of animal toxicology studies. Environ Int. 2020;145:105848.
[3]. EPA. Diethyl Phthalate (DEP) Factsheet. https://www.epa.gov/sites/default/files/2015-04/documents/diethylphathalate.pdf
[4]. CDC. Diethyl Phthalate: Occupational Exposure. https://wwwn.cdc.gov/TSP/PHS/PHS.aspx?phsid=601&toxid=112