

Clinical Image

Open Access, Volume 3

Man with betel nut toxicity

Molly Stott^{1*}; Chiemela Ubani²; John Hurley³; Dawn Sollee^{1,4}; Sophia Sheikh^{1,4}

¹FL/USVI Poison Information Center, Jacksonville, USA.

²Southeast Texas Poison Center, Galveston, USA.

³Virginia Common Wealth University, Richmond, USA.

⁴Department of Emergency Medicine, University of Florida College of Medicine Jacksonville, USA.

*Corresponding Author: Molly K Stott

Emergency Medicine and Clinical Toxicology Fellow,
FL/USVI Poison Information Center – Jacksonville,
655 w 8th Street, C-23, Jacksonville, FL 32209-6595,
USA.

Ph: 904-244-4954, Mobile: 717-468-0601;

Email: stott@poison.ufl.edu.

Received: Nov 09, 2022

Accepted: Nov 29, 2022

Published: Dec 06, 2022

Archived: www.jcimcr.org

Copyright: © Stott MK (2022).

DOI: www.doi.org/10.52768/2766-7820/2186

Background

A 36-year-old Burmese male was found unresponsive at his place of work with possible seizure-like activity. The patient received naloxone by Emergency Medical Services with no response. Upon ED arrival, the patient was tachycardic, hypertensive, with a Glasgow Coma Score of 3, and sluggishly reactive but equal pupils of 4 mm. He was subsequently intubated for airway support. During intubation, extensive dental decay and brown deposits were noted on his teeth. Laboratory testing revealed: Ethyl alcohol of 32.5 mg/dL, ammonia of 184 mcmmol/L, anion gap of 17 mmol/L, pH 7.3, and lactic acid level of 4.2 mmol/L. A small plastic bag was found in the patient's pocket containing brown liquid and plant matter that was identified as kun-ya (Figure 1).

A common cultural tradition in most south Asian countries is the chewing of betel nut preparations ("betel quid," "paan," "kun-ya") consisting of areca nut and slaked lime paste wrapped inside a betel leaf, often with cardamom, aniseed, cloves and sweetened grated coconut added to enhance Flavor [1,2] arecoline, an active alkaloid found in areca nut, is a muscarinic agonist and a partial nicotinic agonist. The betel leaf itself contains a sympathomimetic alkaloid [3]. Acute toxicity is associated with euphoria, salivation, tachycardia, and bronchoconstriction. Arecoline may exacerbate bronchospasm in asthmatics [4]. Seizures may also occur given arecoline's nicotinic effects. Areca nut is highly addictive and chronic use can produce areca nut chewer's syndrome, which is characterized by oral cavity fibrosis, oral mucosa discoloration, and cancer [2,4]. Treatment of acute toxicity is supportive.



Figure 1: Cut betel or areca nut (*Areca catechu*) (red arrows) unwrapped from a betel nut leaf along with cloves (yellow arrow).

References

1. Gunjal S, Pateel DGS, Yang YH, Doss JG, Bilal S, Maling TH, Mehrotra R, Cheong SC, Zain RBM. An Overview on Betel Quid and Areca Nut Practice and Control in Selected Asian and South East Asian Countries. *Subst Use Misuse.* 2020; 55: 1533-1544.
2. Papke RL, Bhattacharyya I, Hatsukami DK, Moe I, Glatman S. Betel Nut (areca) and Smokeless Tobacco Use in Myanmar. *Subst Use Misuse.* 2020; 55: 1385-1394. Erratum in: *Subst Use Misuse.* 2019; 54: 2425.
3. Fox LM. Plant- and Animal-Derived Dietary Supplements. In: Nelson LS, Howland M, Lewin NA, Smith SW, Goldfrank LR, Hoffman RS. eds. *Goldfrank's Toxicologic Emergencies*, 11e. McGraw Hill; 2019. Accessed August 19, 2022. [https://accesspharmacy-mhmedical-com.lp.hscl.ufl.edu/content.aspx?bookid=2569 & sectionid=210271724](https://accesspharmacy-mhmedical-com.lp.hscl.ufl.edu/content.aspx?bookid=2569§ionid=210271724).
4. Garg A, Chaturvedi P, Gupta PC. A review of the systemic adverse effects of areca nut or betel nut. *Indian J Med Paediatr Oncol.* 2014; 35: 3-9.