

Introduction

- Formication is described as the feeling of bugs crawling inside or on a person's skin.
 - Often caused by psychiatric disorders, use of illegal substances, side effects of medication, or medical conditions.
- This case report discusses similar effects from the psychoactive substance found in areca nuts, otherwise known as "betel nut."
 - Highlights the importance of sociocultural awareness and perspective.



Case Description

- A **53-year-old female** presented with shortness of breath after missing two days of dialysis. She endorsed no psychiatric history and her medical history was significant for end-stage renal disease, coronary artery disease, and diabetes mellitus.
- She **immigrated** to the United States two years ago from **Palau, Micronesia**.
- Labs were significant for **hyperkalemia** at 6.8 with corresponding T-waves, and she underwent urgent dialysis. The urine toxicology screen was unremarkable.
- The psychiatry team was then consulted for ongoing complaints of **"worms crawling out of my right ear"** for the last two years.
- Patient reported a crawling sensation that radiates from her stomach to her ears, worse when lying down and better after hemodialysis. No overt psychiatric symptoms were observed.
- Physical exam showed **light red-stained teeth** and no signs of skin excoriations.
- A large **bag of betel nuts** was seen by her bedside and she admitted to a **twenty-year history of daily betel nut consumption**, averaging 4-6 ounces over the course of a few days.

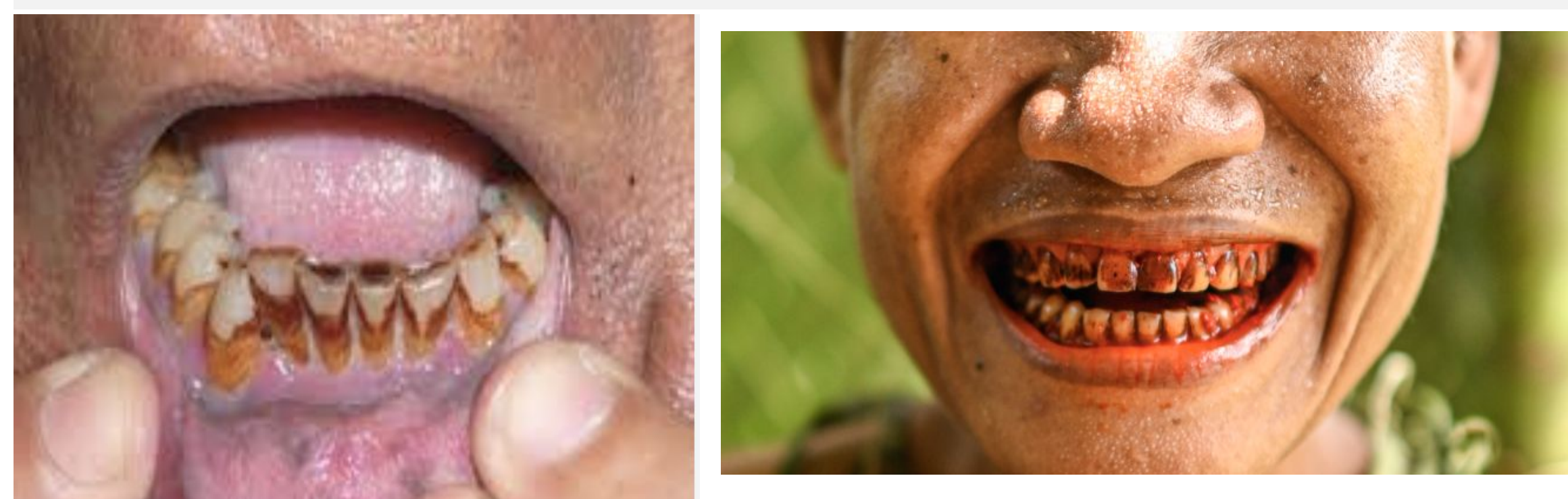
Discussion

Betel nut (areca nut) is most popular in the tropical Pacific, Asia, and East Africa.

- Consumed by chewing the nut inside betel leaves (paan) or with tobacco (betel quid).
 - Our patient consumes the nut (paan), as this is the social norm in Micronesia.
- Frequent use can lead to tolerance and dependence.
 - A study of six different Asian countries revealed that the incidence of betel quid dependence exceeds that of alcohol dependence.

The major chemical ingredient in areca nut is arecoline.

- This alkaloid produces psychoactive and stimulant-like effects on the central nervous system.
 - In high concentrations, can cause formication or parasitosis.
- Effects include increased alertness, GABA inhibition, and neuron damage in high concentrations.
- Effects on the cardiovascular system include coronary artery spasms, palpitations, and high blood pressure, all of which should be considered in a patient with renal disease or cardiovascular risk factors.



Acute patient presentation can include:

- Diaphoresis, tachycardia, hypertension, palpitations
- Euphoria, alertness, tremor
- Paranoia, delusions
- Formication
- Nausea and vomiting, abdominal pain

Long-term use of Betel nut can lead to:

- Discolouration of teeth and gums (reddish-brown)
- Oral ulcers, gingival hyperplasia, oral cancers
- Tolerance and dependence

Ultimately, this discussion emphasizes the importance of cultural competence in modern healthcare, particularly as global migration increases the diversity of patient populations in the United States.

By being culturally aware and incorporating this knowledge into patient care, healthcare providers can offer more accurate diagnoses and effective treatments, tailored to the unique needs of each patient.

Key Points

Betel Nut Use as a Diagnostic Consideration

- Chronic betel nut consumption, common in certain cultures, can lead to neurological symptoms like formication, which should be recognized as a potential cause in relevant patient populations.

Arecoline's Systemic Impact

- The alkaloid arecoline in betel nuts not only affects the central nervous system, causing symptoms like formication, but also poses significant risks to cardiovascular health, particularly in patients with existing conditions.

Cultural Competence in Multidisciplinary Care

- This case highlights the importance of cultural competence across healthcare teams, ensuring that cultural practices like betel nut use are considered when diagnosing and managing complex symptoms in patients from diverse backgrounds.

References

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