



Anesthesia and Kratom Use

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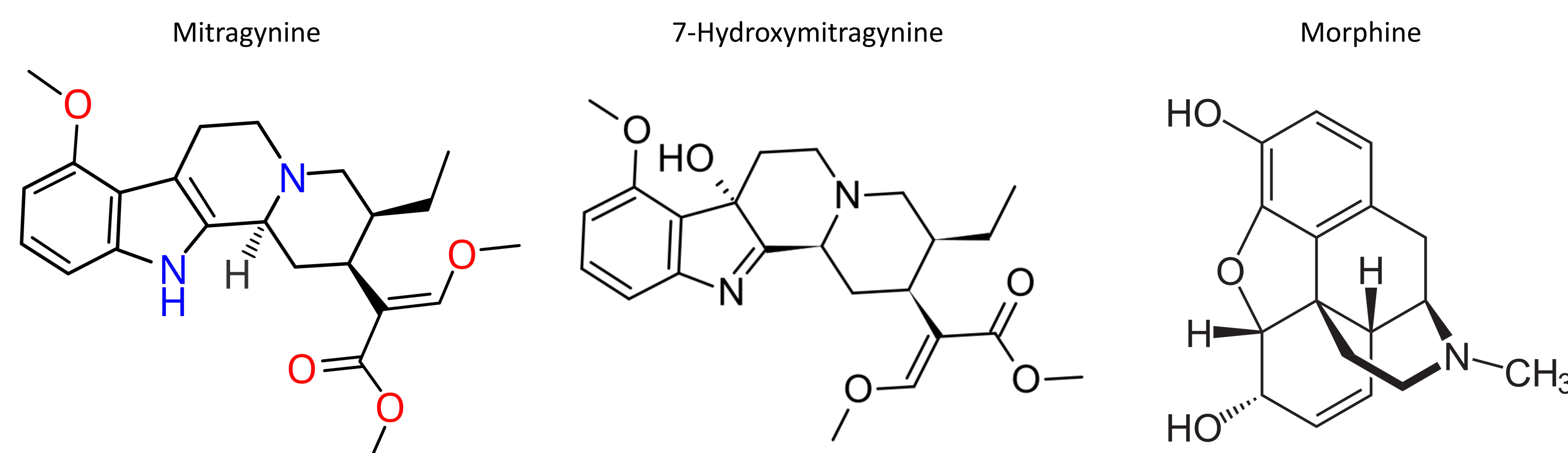
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Learning Objective: To recognize the implications of kratom use in the perioperative setting, including potential interactions with anesthetic agents.

Introduction to Kratom

- **Overview:** Herbal extract from the *Mitragyna speciosa* tree, native to Southeast Asia, used for centuries as a stimulant and analgesic, as tea or chewed leaves.
- **Active Components and Mechanism:** Primary active compounds, mitragynine and 7-hydroxymitragynine (7-OHMG), act as partial agonists at μ -opioid receptors and antagonists at κ - and δ -opioid receptors; mitragynine also stimulates α 2-adrenergic receptors to enhance sedative and analgesic effects.
- **Growing Usage:** Kratom has gained popularity due to its natural, legal, and affordable nature. Used to manage opioid withdrawal, chronic pain, anxiety and depression.
- **Risk of CNS Depression:** The opioid-like and sedative effects can increase risk of central nervous system (CNS) depression, especially when used with other sedatives or anesthetics.
- **Perioperative Considerations:** Withdrawal symptoms, increased tolerance, and altered anesthetic dosing



Case Description

A 32-year-old male with a history of daily kratom use presented for open reduction internal fixation of a scaphoid fracture.

While talking with him for anesthesia consent, he disclosed a long history of kratom use. He has been drinking kratom every day for the past 7 years, first starting to use it to help with his alcohol use disorder, generalized anxiety disorder, and major depressive disorder.

He does experience some withdrawal symptoms when he does not consume his normal amount of kratom, reporting feelings of increased anxiety and shakiness. Because of his NPO order for the surgery, at the time of anesthesia consent, he did confirm having some of these symptoms.

Preoperative management:

- Prior to giving the supraclavicular nerve block, he was given a 2mg injection of midazolam, which the patient expressed some anxiety relief from, although not entirely
- Supraclavicular nerve block was achieved with 20mL of 5mg/mL ropivacaine and 5mg of dexamethasone

Intraoperative management:

- Anesthesia induction was started with a second 2 mg dose of midazolam followed by 100mcg of fentanyl (1.33 mcg/kg) and 200mg (2.67 mg/kg) of propofol
- A supraglottic airway was placed and his anesthesia was maintained with sevoflurane gas

There were no documented notable anesthetic events that occurred. The supraglottic airway was successfully removed and brought to the post-anesthesia care unit (PACU). He was discharged home from the PACU with no concerns.

Case Discussion

Chronic use of kratom can lead to tolerance to both anesthetics and analgesics, potentially requiring higher doses for effective sedation and anesthesia. In this case, the patient's regular kratom consumption may have contributed to the need for slightly increased doses of propofol for induction (2.67 mg/kg) compared to typical induction doses (1.5–2.5 mg/kg).

Although no notable intraoperative events occurred, the patient's self-reported withdrawal symptoms prior to surgery underscore the importance of careful perioperative management, particularly when patients are NPO and unable to take their usual substances.

Recognizing the potential for increased anesthetic requirements and withdrawal symptoms ensures more tailored and safe care, particularly as kratom use continues to rise among patients managing chronic pain, substance use disorders, and mental health conditions.

Conclusion

- Anesthesia providers must be informed about patients' use of supplements like kratom, which is becoming more common
- Kratom use may cause withdrawal symptoms and increased tolerance, potentially requiring higher anesthetic and analgesic doses.
- Identifying kratom use is essential to ensure safe and tailored anesthetic care, minimizing risk of complications.

Sources

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2. Sethi R, Hoang N, Ravishankar DA, McCracken M, Manzardo AM. Kratom (*Mitragyna speciosa*): Friend or Foe?. *Prim Care Companion CNS Disord*. 2020;22(1):19nr02507. Published 2020 Jan 30. doi:10.4088/PCC.19nr02507