Complex Pain Management in Calciphylaxis

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ABSTRACT

Calciphylaxis, a rare disruption in calcium regulation, is associated with painful necrotic skin lesions, pseudo and vascular disease. Often associated with renal failure, obesity, hyperparathyroidism and concomitant androgenic use, the condition has mortality rates that approach 80%. Eruptions on the upper and lower extremities are an early and extremely painful sign. Dressing changes are required every four to six hours and are a source of significant pain and anxiety for the patient. In this report, we review the case of a thirty-six year old patient with calciphylaxis. We address the acute-on-chronic nature of her pain and how we consulted with internal medicine, clinical pharmacists, burn team, acute and chronic pain management to cooperatively develop a narcotic-based pain regimen that would reduce her discomfort during dressing changes yet not overly sedate to exacerbate her concomitant pulmonary and cardiac disease.

PATIENT MANAGEMENT

The primary team utilized a multimodal narcotic-based approach for her pain management: gabapentin 600 mg TID, oxycodone 20 mg BID, oxycodone 10 mg q 4 hours, lidocaine patches, lorazepam 0.5 mg q 4 hours, dilaudid 1 mg q 2 hours PRN and acetaminophen 1000 mg q 4 hours PRN. Acute pain service increased her oxycodone to 30 mg TID and oxycodone IR to 30 mg every three hours PRN. The patient continued to rate her pain as 7/10 at bedtime and 9/10 at worst. At that point, the chronic pain service was consulted. We offered the patient bilateral lumbar sympathetic blocks with RFA. However, given the high risk nature of the procedure, the patient preferred medical management. We started Cymbalta 30 mg at bedtime, with escalation to 90 mg every evening. Additionally, we increased oxycodone to 45 mg TID and discontinued the oxycodone IR. We also recommended addition of Dilaudid 2-4 mg every four hours PRN. These changes reduced the patient’s baseline pain, however she would have uncontrolled pain with dressing changes and hyperbaric oxygen treatments. To manage these periods, the Dilaudid was increased to 6-8 mg every three hours PRN. While this benefited her pain level, it significantly increased her somnolence and confusion.

Oral ketamine was proposed for short term pain relief for pain during dressing changes, yet institutional regulations at our institution mandate an increased level of care. The patient did not desire a change in location. Given the increased risk, sympathetic block remained undesirable. We decided to transition from high risk to 30 mg TID and oxycodone

The cause of calciphylaxis remains unknown; diabetes, warfarin, hyperparathyroidism, renal disease, steroid use, obesity and autoimmune disease may increase the likelihood of developing this condition. Patients must be treated with wound care, frequent debridement and intravenous antibiotics. The comorat of pain management in calciphylaxis currently centers on narcotics. Case reports by Polizzotto suggest that tramadol, morphine and amitriptyline are insufficient, noting that patients require escalation of medications from oral preparations to continuous subcutaneous subcutaneous insulin infusion with ketamine for adequate pain control. A multi-modal approach, combining modulation of NMDA and GABA receptors with opioids, may be optimal. Green et al. successfully used bilateral lumbar sympathetic blocks at the L2 level to achieve pain relief in a patient with calciphylaxis. These results fueled our desire for procedure-based intervention in our case, however the patient refused. A case report by M. Pools has a similar to ours in both presentation, medication escalation and resolution. They initiated lidocaine (extended release nitroprusside), transdermal fentanyl, morphine, hydromorphone, duloxetine, S-ketamine, Haldol and lorazepam before converting all narcotics over to 5mg levoneth tolone every four hours with a dramatic decrease in pain.

Conclusion and Future Direction

Painful cutaneous lesions combined multiple disease processes in an anti-coagulated patient with cardiac disease and pulmonary compromise creates a challenging clinical case. Intervention via bilateral sympathetic nerve blocks, while high risk, may have provided rapid pain relief in our patient with less narrow requirement. However, patient desire and risk stratification relegated our role to medical management. We found that a multi-modal approach utilizing high dose-long term narcotics, benzodiazepines and gabapentin provided our patient with significant pain relief that was not overly sedating, minimized cardiac risk and prevented hypercarbic respiratory failure. We continue to work within our institution to reform policy that will allow patients to safely receive oral ketamine in a step-down care setting for wound care, dressing changes and short-term pain management.

DISCUSSION

The case of calciphylaxis remains unknown; diabetes, warfarin, hyperparathyroidism, renal disease, steroid use, obesity and autoimmune disease may increase the likelihood of developing this condition. Patients must be treated with wound care, frequent debridement and intravenous antibiotics. The comorateral of pain management in calciphylaxis currently centers on narcotics. Case reports by Polizzotto suggest that tramadol, morphine and amitriptyline are insufficient, noting that patients require escalation of medications from oral preparations to continuous subcutaneous subcutaneous insulin infusion with ketamine for adequate pain control. A multi-modal approach, combining modulation of NMDA and GABA receptors with opioids, may be optimal. Green et al. successfully used bilateral lumbar sympathetic blocks at the L2 level to achieve pain relief in a patient with calciphylaxis. These results fueled our desire for procedure-based intervention in our case, however the patient refused. A case report by M. Pools has similar to ours in both presentation, medication escalation and resolution. They initiated lidocaine (extended release nitroprusside), transdermal fentanyl, morphine, hydromorphone, duloxetine, S-ketamine, Haldol and lorazepam before converting all narcotics over to 5mg levoneth tolone every four hours with a dramatic decrease in pain.

References