KETAMINE FOR PALLIATIVE SEDATION IN THE EMERGENCY DEPARTMENT

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Abstract—Background: Palliative sedation to treat severely distressing symptoms in those with a poor prognosis is well-accepted. Objective: We discuss palliative sedation in the Emergency Department and the use of ketamine. Case Report: We present the case of a patient with angioedema of the tongue and severe respiratory distress. The patient’s nursing home was unable to control her symptoms and she was transferred to the Emergency Department. The patient received fentanyl 50 µg i.v. and ketamine 50 mg i.v. every 5 min until adequate palliative sedation was achieved. Conclusion: Ketamine can be considered for Emergency Department palliative sedation in selected patients. Identifying and caring for unmet palliative care needs is an important skill for Emergency Medicine. © 2013 Elsevier Inc.

Keywords—palliative sedation; ketamine; angioedema; palliative care; end of life care

INTRODUCTION

Palliative sedation (PS) is defined as “the use of sedative medications to relieve intractable and refractory symptoms by a reduction in patient consciousness” and is considered ethically and legally accepted therapy near the end of life (1–3). Refractory symptoms are those for which all possible treatments have failed, and no available symptom-specific palliative intervention is available within a reasonable period of time (4). The intent of PS is to relieve distress rather than hasten death, and this is the differentiating factor between PS and euthanasia or physician-assisted death. Although PS for physical distress is universally accepted, PS for existential distress remains controversial (5,6). In their position statement on PS, the American Association of Hospice and Palliative Medicine advocates for a proportional level of sedation, and differentiates PS that preserves consciousness from PS resulting in loss of consciousness (7). However, need for PS can arise emergently in catastrophic conditions, such as agitated delirium, severe dyspnea, status epilepticus, or severe bleeding from advanced head and neck cancer (8,9). Midazolam has been considered the drug of first choice for PS and reports of lorazepam and propofol use have been published (1,3,10). Although opioids are considered first-line therapy for intractable dyspnea, the use of opioids alone for PS is not recommended, as most opioids are inefficient sedatives, with sedation occurring at doses that can be associated with undesirable effects; in addition, even high doses of opioids can fail to induce sedation (1,2).

CASE REPORT

A 96-year-old woman presented by ambulance to the ED from a nursing home. Emergency medical technicians reported the acute onset of tongue swelling and shortness...
of breath after administration of levofloxacin for presumed pneumonia. Nursing home staff administered epinephrine 0.6 mg intramuscularly and diphenhydramine 50 mg orally before ambulance arrival. The patient was unable to speak, and had an enlarged tongue protruding from her mouth causing near complete upper airway obstruction. The patient’s weight was estimated as 40 kg and she was immediately treated with epinephrine 0.3 mg intramuscularly, diphenhydramine 50 mg i.v., famotidine 20 mg i.v., and methylprednisolone 125 mg i.v. Nebulized racemic epinephrine 2.25% solution mixed with lidocaine 4% solution was delivered via face mask and preparations for fiberoptic nasotracheal intubation as well as surgical airway were made. A nasal airway lubricated with viscous lidocaine 2% was placed until other airway protection techniques were attempted. Her vital signs were temperature 99.8° F (37.7°C), blood pressure 180/67 mm Hg, heart rate 87 beats per minute, and O2 Sat 97% on 100% nonrebreather face mask. The patient’s tongue continued to swell and the nasal airway provided no relief. The patient appeared very frightened and in severe respiratory distress.

The patient’s daughter, who had power of attorney, arrived as preparations for airway control were taking place (about 10 min after the patient arrived to the Emergency Department). The daughter informed the team about her mother’s medical history and advance directives. The patient was in hospice care and had a medical history of end-stage Alzheimer’s dementia, atrial fibrillation, sick sinus syndrome, hypertension, depression, hypothyroidism, stroke, congestive heart failure and chronic renal failure. Her regular medications included levothyroxine, omeprazole, amlodipine, venlafaxine, olanzapine, lorazepam and lactulose. She had prepared advance directives stating her wish to avoid cardiopulmonary resuscitation, intubation, and medications or i.v. hydration to prolong her life, with the expressed exception of antibiotics. She desired palliative care including pain management and symptom relief as needed. The daughter had requested the nursing home to send her mother to the hospital if they were unable to control her symptoms or provide adequate comfort measures. She asked that her mother be treated for pain and sedated so that she avoids suffering during what appears to be near complete airway obstruction.

The patient received glycopyrrolate 0.4 mg i.v. and fentanyl 50 µg i.v. twice with no apparent effect. She struggled to breathe and appeared fearful. The daughter repeated her wishes that the patient receive analgesics and sedation, even if unconsciousness resulted. Ketamine was chosen to provide dissociative sedation, while not suppressing respiratory efforts or decreasing protective airway reflexes. Ketamine 50 mg i.v. and fentanyl 50 µg i.v. were titrated every 5 min during the first 15 min until the patient appeared comfortable. The patient required additional dosages every 30 min and after 2-h ED stay she was admitted to the hospital’s palliative care unit. The patient received a total dose of fentanyl 350 µg i.v. and ketamine 250 mg during her ED stay. The patient died the next morning.

The family, in keeping with the patient’s past wishes, requested that medical professionals receive additional training in palliative care and that this case report be prepared.

**DISCUSSION**

This case represents successful use of ketamine for PS in the ED setting to relieve severe distress from angioedema-induced dyspnea refractory to other therapies, short of intubation or surgical airway. Progressive and uncontrolled dyspnea is one of the major distressing symptoms at the end of life and a principal indication for PS (3,11,12). While opioids are considered first-line therapy to ameliorate dyspnea, our patient did not respond to a trial of fentanyl. We chose ketamine rather than a benzodiazepine in order to achieve sedation without jeopardizing respiration. Carter et al. reported successful ketamine use for PS after levomepromazine and midazolam failed to control severe agitation in an inpatient dying from tonsillar carcinoma (13).

Ketamine is a short acting (30–60 min) dissociative sedative agent that can be administered both i.v. and intramuscularly. It can cause bronchodilation, tachycardia, and mild blood pressure elevation, but does not cause respiratory depression or suppression of airway protective reflexes. Its side effects include dysphoric emergence phenomena (arousal agitation) and vomiting, as well as, very rarely, bronchospasm and laryngospasm (14). In a study of 8,282 ED ketamine sedations, only 22 patients (0.3%) developed laryngospasm. The risk of ketamine-associated laryngospasm was unrelated to age, dose, or other clinical features (15).

Our patient had a potentially reversible condition (angioedema), and therefore we selected an agent for PS that was unlikely to worsen the risk of further airway compromise. Both midazolam and lorazepam were considered and rejected for fear of additional respiratory depression.

Before our being made aware of the patient’s wishes, we were prepared to intubate the patient or establish a surgical airway. This might have caused unnecessary suffering for the patient and her family, as well as a prolonged intensive care unit stay with its associated high cost. This is a recurring and challenging scenario for Emergency Physicians. Successful palliative sedation appeared to relieve distress in this case, although with the potential loss of patient awareness of her situation and surroundings.
PS requires frequent patient reassessment and careful titration of sedating agents in order to minimize discomfort.

Our case highlights the following important points: 1) The importance of family presence both to witness the care provided as well as express the patient’s wishes. 2) Emergency medical services personnel should inquire about Do Not Resuscitate status and bring advance directive documents when transporting chronically ill patients from home, nursing home, or hospice. 3) Emergency Physicians should be comfortable with providing palliative care. 4) PS is a therapeutic option in extreme situations when other measures fail to provide symptom relief. 5) For patients with life-limiting illnesses or injuries and a poor prognosis, a “time out” before pursuing invasive procedures can improve the quality of care.

CONCLUSIONS

PS to treat severely distressing symptoms in those with a poor prognosis is appropriate. Ketamine can be considered in this setting given its analgesic and sedative properties. The ED is a crucial setting for identifying unmet palliative care needs and initiating end-of-life discussions with patients, families, and primary care physicians to ensure appropriate care.

REFERENCES


