Resolution of Suicidality and Depressive Symptoms After Hanging Attempt

Volodymyr I. Karpa, MD[a,*]; Junji Takeshita, MD[a]; and Deborah A. Goebert, PhD[a]

Suicide surpassed vehicular crashes to become the leading cause of injury death in the United States, with the majority of the increase due to hanging/suffocation (104% increase for ages 45–59 years between 2000 and 2010).[1] While hanging/suffocation is a common method of suicide mortality in the United States, we have seen a rise in psychiatric consultations over the last 10 years related to attempts. Previous studies[2] suggested that people who attempted suicide by highly lethal methods such as hanging are at a substantially higher risk for completed suicide in the short and long term, thus underscoring the importance of careful acute psychiatric evaluations and treatment as well as focused aftercare following attempts. We present 2 cases wherein depressive symptoms and suicidality resolved after a suicide attempt by hanging, thus potentially questioning the need for involuntary psychiatric hospitalization in certain unusual cases. This report is the first, to our knowledge, of resolution of depressive symptoms as well as suicidality following an attempt.

Case 1

A 25-year-old woman was admitted to the intensive care unit (ICU) with ligature marks around her neck after an apparent suicide attempt by hanging precipitated by relationship problems. Her head and neck computed tomography (CT) imaging indicated subtle diffuse edema. Her urine drug screen (UDS) was negative. Collateral information revealed no past psychiatric history, no psychotropic prescriptions, no prior suicide attempts or drug abuse history, 2 weeks of depressive symptoms, and maternal history of depression and suicide attempts. On the second day of hospitalization, the patient was alert and oriented to person and time only, had a linear thought process, did not appear depressed, reported good mood, and denied suicidal and homicidal ideations or any psychiatric symptoms consistent with depression, psychosis, mania, hypomania, or panic disorder. She was unaware of her relationship problems and the hanging. Once medically cleared, she was transferred to the psychiatry department but maintained that she had no thoughts of self-harm, exhibited no depressive symptoms, appeared future oriented, and was thus discharged.

Case 2

A 26-year-old woman was admitted to the ICU with a ligature mark around her neck after a suicide attempt by hanging. Collateral information revealed that she had felt depressed, mentioned suicide, used recreational drugs, and refused to seek mental health help. Her head and neck CT imaging was unremarkable. Her UDS was positive for cannabis and alcohol. Per psychiatric assessment on the third day of admission, she was alert, awake, and oriented; denied hanging herself; repudiated any past or present manic and psychotic symptoms; and denied past psychiatric diagnoses, medications, hospitalizations, or suicide attempts. She reported occasional alcohol use and a family history of schizophrenia. Once medically cleared, she was admitted to the psychiatry department, but continued denying all psychiatric symptoms, exhibited no significant signs of psychiatric illness, and was subsequently discharged.

Discussion

Both patients exhibited resolution of depressive symptoms and suicidality with no antidepressant medication intervention, electroconvulsive therapy, or psychosocial treatment. Per chart review, to our knowledge, neither patient was seen for another suicide attempt at an acute care facility in our state to date (16 and 14 months, respectively, post discharge). Previous reports[3] described amnesia secondary to attempted hanging, arguing that hypoxia in the context of arterial hypotension and arterial hypoxia are similar to cardiopulmonary arrest, which is known to cause amnesia that is most likely mediated via hippocampal injury, given known susceptibility of the hippocampus to hypoxic injury. This susceptibility may be related to episodic memory loss and resolution of symptoms in our 2 patients. Global brain ischemia may also play a role: given that long-term and short-term memory recall includes neocortex and other subcortical regions with reciprocal connections to the hippocampus, one may speculate that an insult to the hippocampus, temporal lobe, and thalamus could all play a role in the resolution of depressive symptoms, as well as suicidality, observed in our patients.[4,5] Regardless, having observed other similar cases, we feel that awareness and further study of these cases may be of significance.

[a]Department of Psychiatry, John A. Burns School of Medicine, University of Hawaii, Honolulu, Hawaii

*Corresponding author: Volodymyr I. Karpa, MD, Department of Psychiatry, 1356 Lusitana Street 4th Floor, University of Hawaii, Honolulu, Hawaii 96813 (Karpa@dop.hawaii.edu).

Prim Care Companion CNS Disord 2019;21(2):18l02357

To cite: Karpa VI, Takeshita J, Goebert DA. Resolution of suicidality and depressive symptoms after hanging attempt. *Prim Care Companion CNS Disord*. 2019;21(2):18l02357.

To share: https://doi.org/10.4088/PCC.18l02357

Potential conflicts of interest: None.

Funding/support: None.

Patient consent: Cases have been through review by the authors' medical center's institutional review board (IRB); approval stipulated that the patient information be de-identified by altering any nonpertinent descriptors. After de-identifying the cases to protect anonymity, the IRB approved a waiver of consent.

Published online: April 18, 2019.

REFERENCES

1. Baker SP, Hu G, Wilcox HC, et al. Increase in suicide by hanging/suffocation in the US, 2000–2010. *Am J Prev Med*. 2013;44(2):146–149.
2. Persett PS, Grimholt TK, Ekeberg O, et al. Patients admitted to hospital after suicide attempt with violent methods compared to patients with deliberate self-poisoning: a study of background variables, somatic and psychiatric health and suicidal behavior. *BMC Psychiatry*. 2018;18(1):21.
3. Medalia AA, Merriam AE, Ehrenreich JH. The neuropsychological sequelae of attempted hanging. *J Neurol Neurosurg Psychiatry*. 1991;54(6):546–548.
4. Grubb NR, Fox KA, Smith K, et al. Memory impairment in out-of-hospital cardiac arrest survivors is associated with global reduction in brain volume, not focal hippocampal injury. *Stroke*. 2000;31(7):1509–1514.
5. Sulzgruber P, Kliegel A, Wandaller C, et al. Survivors of cardiac arrest with good neurological outcome show considerable impairments of memory functioning. *Resuscitation*. 2015;88:120–125.