Can Propofol Mimic Alcohol-related Pain in Patients with Hodgkin Lymphoma?

To the Editor:

Alcohol-related pain was first reported in 1950 in association with Hodgkin lymphoma (HL).[1] Initially considered a highly predictive and specific symptom of HL, over the years however, it has also been seen in osseous diseases, pancreatitis, and malignancies of the thymus and pancreas.[2] We present the case of a patient who experienced a painful episode mimicking alcohol-related pain, in association with the anesthetic agent propofol.

A 34-yr-old woman was scheduled for a diagnostic biopsy of an enlarged lymph node, possible right video-assisted thoracoscopic surgery, and biopsy of a mediastinal mass under general anesthesia. She had earlier presented with a 4-month history of episodic right shoulder discomfort with acute worsening after alcohol ingestion. A week before seeking medical help, she noticed a "lump" in her right shoulder, which on examination was provisionally diagnosed as an enlarged supraclavicular lymph node. Computed tomography scan of the chest revealed an anterior mediastinal mass. Of note, she had no history of anesthesia. On the day of surgery, general anesthesia was induced with the patient lying comfortably in a supine position on the operating table. Immediately after intravenous injection of the induction dose of propofol (150 mg), the patient complained of severe upper back pain on the right side (site of underlying disease) and became agitated and restless. Local extravasation of the induction agents was excluded by visual examination of the intravenous site. Because there was no significant change in vital signs and the patient remained hemodynamically stable, succinylcholine (100 mg) was administered intravenously and the airway was secured uneventfully. The procedure and remainder of the patient's hospital course were uneventful. The histopathology report confirmed the diagnosis of HL (nodular sclerosis type). The peculiar set of circumstances, *i.e.*, severe pain in the upper back during intravenous administration of propofol, prompted us to review the literature regarding this particular symptom. Association of pain with alcohol ingestion is well known and has been reported in the past, particularly in the oncology literature.[3–5]

Alcohol-related pain has been classically associated with HL. The reported incidence of this disorder is approximately 3%.[6] Women and those with nodular sclerosis subtype of HL are especially prone; the alcohol content of a liqueur-filled chocolate or even a sip of beer has been reported to trigger the pain.[3,5,7] The onset of pain is immediate; the patient descriptions of pain vary from "aching" to "stabbing," and the intensity ranges from mild to unbearable, forcing some patients to give up alcohol entirely.[5] The exact mechanism is unknown, but it is hypothesized that a localized alcohol associated allergic response induces vasodilatation and swelling in the diseased tissue, activating nociceptive signals.[5,8] This may help explain the high correlation observed between the site of the pain and underlying disease.[3]

Although it is difficult to establish an exact cause-and-effect relationship in our case, several features about our patient's episode led us to speculate that her symptom was propofol associated. First, the patient's pain was precipitated immediately after intravenous injection of propofol and in the absence of any other inciting factors, so this witnessed temporal relationship between the onset of pain and propofol infusion, and its location in the vicinity of her underlying disease lends credence to our assumption. The previous descriptions of alcohol-related syndrome have also been based on circumstantial evidence and establishment of a temporal association between alcohol consumption and pain.[3–5] Second, the vasodilatory effect of propofol could possibly have stimulated nociceptors by a similar mechanism. Finally, the patient's sex, diagnosis of nodular sclerosis type of HL, and history of alcohol-related pain in the shoulder suggest that she may be susceptible to painful episodes of such nature.

Despite the circumstances surrounding the patient's episode and her suggestive history, in the absence of supportive literature, the reason for the cross-reactivity between alcohol and propofol (as manifested by a common symptom) is unknown. It would also be unfair to suggest that all patients with HL who experience alcohol-related pain will experience propofol-associated pain also. That said, it would be beneficial for anesthetists to be cognizant of this association.

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