

Subcutan Isosulfan Blue Administration May Interfere with Pulse Oximetry

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Abstract : Sentinel lymph node biopsy (SLNB) is a minimal invasive technique with lower morbidity in axillary staging of breast cancer. Isosulfan blue stain is frequently used in SLNB and regarded as safe. The present case report aimed to report severe decrement in SpO₂ following isosulfan blue administration, as well as skin and urine signs and inconsistency with clinical picture in a 67-year-old, 77 kg, ASA II female case that underwent SLNB under general anesthesia. Ten minutes after subcutaneous administration of 10 ml 1% isosulfan blue by the surgeons into the patient, who were hemodynamically stable, SpO₂ first reduced to 87% from 99%, and then to 75% in minutes despite 100% oxygen support. Meanwhile, blood pressure and EtCO₂ monitoring was unremarkable. After specifying that anesthesia device worked normally, airway pressure did not increase and the endotracheal tube has been placed accurately, the blood sample was taken from the patient for arterial gas analysis. A severe increase was thought in MetHb concentration since SpO₂ persisted to be 75% although the concentration of inspired oxygen was 100%, and solution of 2500 mg ascorbic acid in 500 ml 5% Dextrose was given to the patient via intravenous route until the results of arterial blood gas were obtained. However, arterial blood gas results were as follows: pH: 7.54, PaCO₂: 23.3 mmHg, PaO₂: 281 mmHg, SaO₂: %99, and MetHb: %2.7. Biochemical analysis revealed a blood MetHb concentration of 2%. However, since arterial blood gas parameters were good, hemodynamics of the patient was stable and methemoglobin concentration was not so high, the patient was extubated after surgery when she was relaxed, cooperated and had adequate respiration. Despite the absence of respiratory or neurological distress, SpO₂ value was increased only up to 85% within 2 hours with 5 L/min oxygen support via face mask in the surgery room as the patient was extubated. At that time, the skin of particularly the upper part of her body has turned into blue, more remarkable on the face. The color of plasma of the blood taken from the patient for biochemical analysis was blue. The color of urine coming throughout the urinary catheter placed in intensive care unit was also blue. Twelve hours after 5 L/min. oxygen inhalation via a mask, the SpO₂ reached to 90%. During monitoring in intensive care unit on the postoperative 1st day, facial color and urine color of the patient was still blue, SpO₂ was 92%, and arterial blood gas levels were as follows: pH: 7.44, PaO₂: 76.1 mmHg, PaCO₂: 38.2 mmHg, SaO₂: 99%, and MetHb 1%. During monitoring in clinic on the postoperative 2nd day, SpO₂ was 95% without oxygen support and her facial and urine color turned into normal. The patient was discharged on the 3rd day without any problem. In conclusion, SLNB is a less invasive alternative to axillary dissection. However, false pulse oximeter reading due to pigment interference is a rare complication of this procedure. Arterial blood gas analysis should be used to confirm any fall in SpO₂ reading during monitoring.

Keywords : isosulfan blue, pulse oximetry, SLNB, methemoglobinemia

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