

Follow the minimum monitoring standards; use the pulse oximeter

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Sir,

Minimum Mandatory Monitoring Standards (MMMS) have been formulated globally and at various national levels of the developing nations.¹ A minimum monitoring with an ECG, a pulse oximeter and a non-invasive blood pressure monitor is mandatory according to these standards.² The question, "Is the pulse oximeter on the patient and functioning?" is an essential item in the WHO surgical safety checklist.³ We report an incident highlighting importance of MMMS, especially the use of pulse oximetry.

A 30 year old male sustained a fracture shaft of his left femur and pubic rami and was posted for closed reduction and internal fixation. Preoperative evaluation was unremarkable. He had Hb 13.1 g/dl, a normal ECG and normal radiograph of chest. As an ASA grade 1 patient, a combined spinal - epidural technique was planned for him. On the operating table, the patient was connected to monitoring devices according to MMMS. He was mildly febrile with a pulse rate 136/minute, BP 110/80 mm Hg, respiratory rate 18 breaths/min and SpO₂ 88% on room air. The saturation improved to 92% on oxygenation through face mask. His chest was clear on auscultation and he appeared comfortable. We attached the probe on multiple sites but the pulse oximeter continued to show low readings. We deferred the case for further investigation. Next day a 2D-echocardiography was done and it revealed

mild pulmonary artery hypertension with a PASP of 40 mmHg. A CT pulmonary angiogram revealed pulmonary embolism involving the left inferior pulmonary artery with extension into the lobar and segmental arteries (Figure 1). After a cardiologist consultation, the patient was started on intravenous unfractionated heparin for five days. After which he was posted for surgery. This time the SpO₂ was 98% on room air preoperatively and the surgery went uneventfully.

Early detection and correction of perioperative events through the use of pulse oximetry improves patient outcomes.⁴ The clinical manifestations of pulmonary embolism are not always definitive or specific. It may present silently and may be missed by the clinicians.⁵ Our case is an apt example of a situation where the pulse oximeter used as a part of the MMMS helped in diagnosis and avoidance of an untoward outcome.

It is no wonder then, that many authors have complimented the pulse oximeter by saying "Having an oximeter is like having a skilled pair of hands"⁴ and "Always keep a finger on the patient's pulse and a pulse oximeter on the patient's fingers".²

Our case conveys an important message to all practicing anesthesiologists - "Follow the guidelines if you want to be safe" and "Make liberal use of the pulse oximeter from the preinduction period upto the postoperative period".

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