

Monitored Anaesthesia Care in An One Hundred Years Old Man in NIO&H

Rubina Yasmin¹, Kanijun Nahar Quadir², SM Shafiqul Alam³

¹Associate Professor, Anaesthesiology, National Institute of Ophthalmology and Hospital, Dhaka (NIO&H), ²Assistant Professor, Anaesthesiology, National Institute of Ophthalmology and Hospital, Dhaka (NIO&H), ³Junior Consultant, Department of Anaesthesiology, Dhaka Medical College Hospital, Dhaka

Corresponding author: E-mail: rubinayasmin61@yahoo.com

Abstract:

A hundred years old man was admitted in NIO&H with the diagnosis of cataract in right eye. He was scheduled for operation under local anaesthesia, but on the O.T. table he became restless, non cooperative. So, the surgical team planned to do the operation under general anaesthesia. Necessary investigations for GA done and the patient was found nondiabetic but had anterolateral ischaemia and had cardiomegaly in X-ray chest. Our anaesthetic plan was to do the surgery under sedation with local anaesthetic block (MAC). We provided the patient monitored anaesthesia care (MAC) by giving Inj. Fentanyl, Inj. Midazolam and Inj. Propofol. The operation took twenty five minutes. Initially after the administration of drugs, his SPO₂ fell down. Oxygen given and SPO₂ increased to 99% within 90 seconds. Throughout the peroperative period patient remained haemodynamically stable. Within 10 minutes, he opened his eyes, responded to vocal command and after one hour, he was shifted from postoperative ward to general ward.

Keywords: geriatric patient, monitored anaesthesia care

(JBSA 2014; 27(1): 36-38)

Case Report:

A 100 years old man weighing 45kg, was admitted in National Institute of Ophthalmology and Hospital (NIO&H) with the diagnosis of cataract in right eye. The patient was scheduled for operation under local anaesthetic block. But on the O.T. table, he became restless and noncooperative. The surgical team postponed the operation and planned to do the surgery under general anaesthesia. We did the necessary investigations for general anaesthesia. Patient was found non diabetic, but had anterolateral ischaemia in ECG and cardiomegaly in chest X-ray.

Our anaesthetic plan was to do the surgery under sedation with local anaesthetic block (monitored anaesthesia care). On the OT table, patient had pulse rate 66/min, B.P.-170/90mmHg, SPO₂-98%. IV channel established and Hartmann's solution infused. When the surgical team was ready, we administered the patient Inj. Fentanyl 25µg/kg, Inj. Midazolam 2mg and Inj. Propofol 50mg(1mg/kg) intravenously. Patient was found in deep sedation.

Immediately it was noticed that his SPO₂ fell down upto 85%. Guedel's airway was put in situ and oxygen administered through face mask 7-8L/min. Within 90 seconds, his SPO₂ increased to 99%. Then the surgical team gave the local anaesthetic block and after few minutes started operation. Throughout the per operative period, patient was given oxygen through nasal cannula 3L/min, his pulse rate remained 62-64/min, BP-140/90 mmHg, SPO₂ -99%. Two incremental doses (10mg) of Inj. Propofol were given in the peroperative period. The total operation time was 25 minutes. After completion of operation, within ten minutes the patient opened his eyes, responded to vocal command. After one hour, he was shifted to general ward from postoperative ward and discharged from hospital in the next day. His operation was uneventful except oxygen desaturation for 90 seconds which occurred initially.

Discussion:

The combination of local anaesthesia with intravenous sedative and analgesic drugs is

extremely popular in the ambulatory setting in developed country. It has been suggested that upto 50% of all outpatient procedures could be performed with a Monitored anaesthesia technique(MAC) and the cost of perioperative care can be reduced upto 80% in comparison to general anaesthesia¹

Monitored Anaesthesia care is the term used when an anaesthesiologist monitors a patient receiving local anaesthesia or administers supplemental drugs to patients undergoing diagnostic or therapeutic procedures.² The ASA defines MAC as instances in which an anaesthesiologist has been suggested to provide specific anaesthesia services to a particular patient undergoing a planned procedure in connection with which a patient receives local anaesthesia, or in some cases, no anaesthesia at all.³ In such a case, the anaesthesiologist is in control of the patient's vital sign and is available to administer anaesthetics and provide other medical care as appropriate. The standard of care for patients receiving MAC should be the same as for patients undergoing general or regional anaesthesia, such care includes a complete pre-operative assessment, intra operative monitoring and post operative recovery care. Vigilant monitoring is required because patients may rapidly progress from a light level of sedation to deep sedation or unconsciousness and thus maybe at risk for airway obstruction, oxygen desaturation and even aspiration.

The primary objective in providing MAC is to ensure patient comfort, safety and satisfaction during surgery. Anaesthetic drugs are administered during procedures under MAC with the goal of providing analgesia, sedation and anxiolysis and ensuring rapid recovery without side effects. Systemic analgesics are used to reduce the discomfort associated with the injection of local anaesthesia and prolonged immobilization.⁴ Sedative hypnotic drugs are used to make procedures more tolerable for patients by reducing anxiety and providing a degree of intraoperative amnesia while allowing them to rest during the operation.⁵ Barbiturates, benzodiazepines, Ketamine, Propofol, opioid analgesics have been used during MAC with wide variety of delivery system eg. intermittent boluses, variable rate infusion, target controlled infusion, patient

controlled sedation.^{6,7} The most commonly used sedation technique is a small dose of midazolam(1-2mg) or propofol (0.5-1 mg/kg) or both followed by a propofol infusion at 25 to 100µg/kg/min.⁸ Avramov and White⁹ described the combined use of alfentanil (0.3 to 0.4 µg/kg/min) and propofol (25-75 µg/kg/min) infusion for MAC. Propofol produces a dose related reduction in the opioid requirement (25-50%) and PONV(0-17%) compared with alfentanil alone (33%). Many other drugs like remifentanyl, Ketamine, dexmedetomidine can also be used for MAC.

The advantages of MAC in comparison to general anaesthesia care are anaesthetic drugs cost can be significantly reduced, decrease in operating room exit time so enhanced turnover of cases, decreased post operative pain and sore throat leading to improved quality of recovery. Disadvantages of MAC include residual sedation, pain on injection with propofol, incidence of oxygen desaturation and greater degree of respiratory depression with remifentanyl.

Monitoring patients' vital sign remains the most common method for determining the 'depth of anaesthesia' during surgery. Recent studies have suggested that the use of cerebral monitoring improves early recovery after general anaesthesia in ambulatory setting¹⁰.

Despite the emphasis on rapid recovery after MAC, patients do not appear to be at increased risk for awareness when compared with patients receiving general anaesthesia.¹¹ From the perspective of the patient, the quality of recovery appears to be improved with cerebral monitoring versus traditional monitoring practices.¹²

In this case, the patient was of extreme age (100 years old), with anterolateral ischaemia and cardiomegaly. Still then his cataract surgery was done under monitored anaesthesia care. We used here the most common sedation technique by using Inj. Midazolam, Inj. Fentanyl and Inj. Propofol. Propofol infusion was not given as we have no syringe pump. The risk of MAC is oxygen desaturation which occurred in this patient initially, but by administering oxygen, his SPO₂ increased to 99%. Throughout the perioperative period we gave him oxygen 3L/min through nasal cannula and the patient remained haemodynamically stable. The operation time was also

less, only 25 minutes. His recovery was also rapid and smooth. His perioperative period was uneventful except oxygen desaturation for 90 seconds.

So, in ophthalmic surgery, in non-cooperative even in elderly patient we can give monitored anaesthesia care which can provide patient comfort, safety and satisfaction during surgery.

References:

1. Shiley SG, Lalwani K, Milczuk HA: Intravenous sedation vs. general anaesthesia for paediatric otolaryngology procedures. *Arch Otolaryngol Head Neck Surgery* 129:637, 2003
2. Sa Rego MM, Watcha MF, White PF: The changing role of monitored anaesthesia care in ambulatory setting. *Anesth Analg* 85:1020, 1997
3. American Society of Anaesthesiologists: Position on Monitored Anaesthesia Care. Park Ridge IL, American Society of Anaesthesiologists, 1997; p413
4. Ramirez-Ruiz M, Smith I, White PF: Use of analgesics during propofol sedation; A comparison of Ketorolac, dezocine and fentanyl. *J Clin Anaesth* 7:481, 1995
5. Smith I: Monitored anaesthesia care : how much sedation, how much analgesia? *J Clin Anesth* 7:765, 1996
6. Newson C, Joshi GP, Victor R, et al: Comparison of propofol administration technique for sedation during MAC, *Anaesth Analg* 81:486, 1995
7. Ghouri AF, Taylor E, White PF: Patient controlled drug administration during local anaesthesia; A comparison of midazolam, propofol and alfentanil, *J Clin Anesth* 4: 476-479, 1992
8. White PF, Negus JB: Sedative infusion drug local and regional anaesthesia: A comparison of midazolam and propofol, *J Clin Anesth* 3:32, 1991
9. Avramov MN, White PF: Use of alfentanil and propofol for outpatient monitored anaesthesia care: Determining the optimal dosing regimen. *Anesth Analg* 72:616, 1991
10. Gan JJ, Glass PS, Windsor A, et al: Bispectral index monitoring allows faster emergence and improved recovery from propofol, alfentanil and nitrous oxide anaesthesia. *Anesthesiology* 87: 808, 1997
11. Wennervirta J, Ranta SO, Hynynen M: Awareness and recall in outpatient anaesthesia. *Anesth Analg* 95:72, 2002
12. Recart A, Gasanova I, White PF et al: Effect of cerebral monitoring on recovery after GA; Comparison of the auditory evoked potential and bispectral devices with standard clinical practice. *Anesth Analg* 97:1667, 2003