

Research Article



Spinal Anaesthesia and Obturator Nerve Block for Trans-Urethral Resection of Bladder Tumor in a Patient with Ischaemic Myocardium

Swarna Banerjee^{1,*}, Deepak K. Parhi², Swastika Swaro², Mahesh C. Sahu³

¹Dept of Anaesthesia, IMS and SUM Hospital, Siksha O Anusandhan University, K8, Kalinga Nagar, Bhubaneswar-751003, Odisha, India.

²Department of Cardiology, SCB Medical college and Hospital, Cuttack, Odisha, India.

³Central Research Laboratory, IMS and SUM Hospital, Siksha O Anusandhan University, K8, Kalinga Nagar, Bhubaneswar, Odisha, India.

*Corresponding author's E-mail: dr.swarnabanerjee@gmail.com

Accepted on: 19-06-2015; Finalized on: 31-07-2015.

ABSTRACT

A 69 year old male patient was admitted to our hospital with complaints of burning micturition and hematuria for 4 days. On ultrasonography a hypoechoic vesicular mass of size 54mm * 51mm of irregular outline was seen in lateral and posterior bladder wall. The patient was posted for emergency transurethral resection of bladder tumour for control of bleeding. During the preanesthetic checkup it was noted that the patient had an occupational exposure to coal mines for 30 years and was dyspneic on moderate exertion. His ECG showed ST segment depression and inverted T waves in chest leads V2, V3, V4, V5, V6 and limb leads I and a VL. A screening echocardiography showed trivial tricuspid regurgitation, with ejection fraction of 52% and regional wall motion abnormality in left anterior descending artery territory. Blood investigations revealed a haemogram of 8 gm% and a PCV of 23. General anesthesia in such a patient could result in several challenges and complications. We present such a case conducted uneventfully under spinal anesthesia combined with an obturator nerve block.

Keywords: Posterior and Lateral wall bladder tumour, spinal and obturator nerve block, ischaemic myocardium.

INTRODUCTION

During general anesthesia patients with pulmonary diseases are threatened by various unphysiologic conditions.¹ Supine position, and positive pressure ventilation can hamper borderline respiratory function by reduction in functional residual capacity(FRC).¹ Hypoxia is threatening to an ischaemic myocardium. Coronary heart disease is common comorbid factor present in elderly population which leads to high mortality during surgery. Aim of this case report is to highlight the safety of combined subarachnoid block and obturator nerve block for emergency transurethral resection of bladder tumour in patients with Coronary heart disease and left ventricular dysfunction.

Case Report

A 69 year old patient(weight 59 kg) working in mine fields for 30 years presented with complaints of hematuria and burning micturition for 4 days. History of past illness revealed irregularly treated hypertension. He had intermittent cough associated with mucoid expectoration and was dyspneic on moderate exertion. On general examination his pulse rate was 96/min and blood pressure was 100/60 mm hg. Respiratory rate was 28/min. Bilateral basal crepitations and occasional rhonchi with decreased air entry in both sides basal lung fields were noted. No abnormality was detected in Cardiovascular, abdominal, and central nervous system examinations. Further investigations done in the emergency department revealed a haemogram of 8 gm% and a PCV of 23%. Coagulation profile showed Bleeding time as 3 minutes, clotting time 5 minutes 30 seconds and platelet count was 340,000. Prothrombin time and

activated partial thromboplastin time were within normal limits. Screening echocardiography revealed trivial tricuspid regurgitation, with ejection fraction of 52% and regional wall motion abnormality in left anterior descending artery territory.

Patient was accepted for Anaesthesia under American Society of Anesthesiologists class III and written informed consent obtained with a plan of Spinal Anaesthesia plus obturator nerve block. Two units of packed cells were transfused preoperatively. Patient was nil per oral from the previous night and Tab. Ranitidine 150 mg + Tab. Metoclopramide 10 mg were given at 7 A.M. on the day of surgery. On the operative table his vitals were blood pressure 98/60 mmHg, Pulse rate 92/minute and oxygen saturation was 94% on room air. Pre-loading was done with 250 ml of normal saline. Inj. Mirdazolam 1.5 mg was given intravenously 5 minutes prior to the subarachnoid block.

Procedure

Under all available aseptic precautions, spinal anaesthesia was given at L3-4 space by a 25 G Quincke needle. A total volume of 2.4 ml containing 2ml of hyperbaric bupivacaine. 5% and 0.4 ml of butorphanol was given. Obturator nerve block was given with 25 G spinal needle after lithotomy position. The sensory level of blockade was up to T8. Intra operatively isotonic saline was administered at the rate of 60 ml/hour. The entire procedure lasted for an hour and twenty minutes. Vitals were recorded every 5 mins. ECG monitoring was done with lead II (for inferior wall) and V₅ (for lateral wall) to detect any changes in ST-T segment during peri-op period. Patient was shifted to recovery room and one unit



of packed cells transfused after that he was transferred to intensive care unit. Lactated Ringers solution was given at 100 ml/hour for four hours, after that oral feeds started. Postoperative analgesia was provided with inj. paracetamol i.v. 8th hourly for 24 hours and inj. Tramadol 100mg i.v. 12 hourly. 12 lead ECG was taken twice daily for three days to rule out any fresh changes, in addition to the continuous ECG monitoring in intensive care unit (Fig 1). After a week patient was discharged and was doing well for three months of our follow-up.

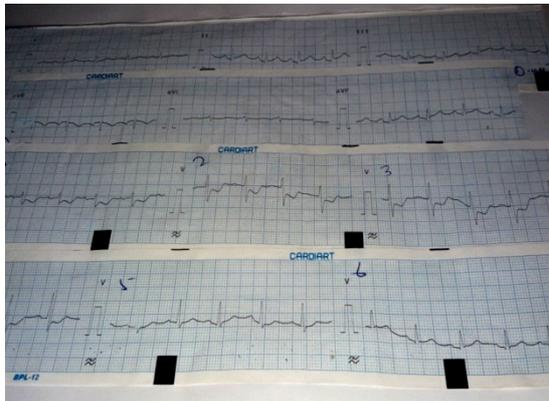


Figure 1: ECG of the patient

DISCUSSION

The anaesthetic management in the patients with obstructive lung pathologies is based on preventing hypoxia. Changes in respiratory physiology in the elderly patients make them prone to hypoxia intra operatively and cardiovascular system changes can result in severe hemodynamic instability under anesthesia. Maintaining the balance between myocardial oxygen requirements and myocardial oxygen delivery is crucial in preventing the myocardial ischemia⁵. Spinal anaesthesia is preferred over General anaesthesia in the elderly patients because of hemodynamic benefits which includes a minimum decrease in myocardial contractility and a modest decrease in blood pressure and cardiac output.^{6,7}

In the present case, bleeding from the tumor would eventually lead to severe anaemia thereby affecting his cardio-respiratory status. General Anaesthesia carries the effects on the hemodynamics of the heart such as depression in myocardial contractility, an alteration in the heart rate and blood pressure as well as prevents which in the present case would be detrimental. Events during general anesthesia like light anesthesia, mechanical irritation due to tube, histamine releasing agents can all cause broncho-constriction and hypoxic events. Spinal Anaesthesia was chosen in this patient because it

produces satisfactory surgical analgesia, causes minimal hemodynamic changes in this age group, avoids tracheal intubation and maintains spontaneous ventilation leading to unimpaired lung function. Obturator nerve block was added to avoid adductor contractions as the tumour involved the lateral wall of bladder. In this patient, hemodynamic stability was maintained throughout the procedure because of addition of intrathecal butorphanol with reduction in local anaesthetic volume. 0.4 ml (0.4mg) of butorphanol with 2.0 ml of hyperbaric 0.5% bupivacaine was used, thus reducing the dose of local anaesthetic which is responsible for the sympathetic blockade and hypotension. Butorphanol also prolongs the duration of blockade.⁶

CONCLUSION

Patients with known ischaemic heart disease and chronic obstructive pulmonary diseases posted for emergency transurethral resection of bleeding bladder tumour may be managed with subarachnoid block combined with obturator nerve block while keeping the haemodynamic variables stable.

REFERENCES

1. Henzler D, Dembinski R, Kuhlen D, Roissant R, Anesthetic considerations in patients with pulmonary diseases, *Minerva Anestesiologica*, 70, 2004, 279-84.
2. Goldman L, Caldera DL, Southwick FS, Nussbaum SR, Murray B, O'malley TA, Slater EE, Cardiac risk factors and complications in non-cardiac surgery, *Medicine*, 57(4), 1978, 357.
3. Larsen SF, Olesen KH, Jacobsen E, Nielsen H, Nielsen AL, Pietersen A, Nyboe J. Prediction of cardiac risk in non-cardiac surgery, *European heart journal*, 8(2), 1987, 179-185.
4. Naveen KA, Jagadeesha SC, Anaesthesia Management of Elderly Woman with Coronary Heart Disease and Severe Left Ventricular Dysfunction Suffering from Left Obstructed Inguinal Hernia Posted for Emergency Surgery Under Combined Continuous Low Dose Segmental Epidural and Ilioinguinal Nerve Block, *International journal of scientific study*, 2(4), 2014, 73-76.
5. Raghuraman MS, Umeshkumar A, Kumar VRH, Spinal anaesthesia for trans-urethral resection of bladder tumor in a patient with recent myocardial infarction, *Journal of evolution of medical and dental sciences*, 1, 2012, 936-939.
6. Chari VR, Goyal AA, Singh V. A study of addition of inj.butorphanol to hyperbaric inj.bupivacaine given intrathecally to patients undergoing lower segment caesarean section: a randomized, controlled trial, 6(2), 2013, 156-160.

Source of Support: Nil, **Conflict of Interest:** None.