

Management of a case of ventricular bigeminy using central neuraxial blockade

Sir,

Ventricular premature complexes (VPCs) are the premature discharge of ventricular ectopic focus. We report the anaesthetic management of a patient with VPCs who underwent vaginal hysterectomy under single-shot subarachnoid block (SAB). Consent for publication was obtained from the patient.

A 45-year-old (52 kg, 165 cm) female, a farmer by occupation, was scheduled for vaginal hysterectomy. She had palpitations for the past 7 years with no relation to routine activity. She was otherwise healthy, active and suffering from no symptoms of breathlessness, chest pain, presyncope, syncope or exercise-induced fatigue. There was no associated comorbidity.

Her radial pulse rate was 80 beats/min, which was regularly irregular, and non-invasive blood pressure (NIBP) was 110/78 mmHg. Her systemic examination and investigations were within normal limits. Electrocardiogram (ECG) trace is shown in Figure 1. The 24-h Holter monitoring revealed frequent VPCs of right bundle-branch block morphology with superior axis, left bundle-branch block morphology (4% of total beats) with bigeminy and trigeminy. Two-dimensional echocardiography was suggestive of mild mitral regurgitation, mild tricuspid regurgitation and no regional wall-motion abnormality. with an ejection fraction of 60%. The patient was receiving oral propranolol 40 mg.

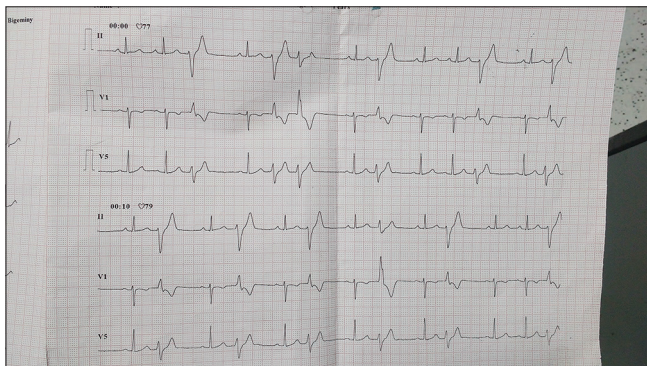


Figure 1: Electrocardiogram showing multiple ventricular premature complexes

We opted for single-shot SAB given the absence of any structural heart abnormality and short duration of surgery. Emergency resuscitation drugs and a charged defibrillator were kept ready. Preoperatively, oral diazepam 5 mg was used as anxiolytic. In the operation theatre, after placement of standard monitors and five-lead ECG (Lead II and Lead V), the patient was given SAB in sitting position with 10 mg of bupivacaine (heavy) with 25 mcg of fentanyl and a sensory level up to T8 was achieved. The patient was positioned to lithotomy after drug fixation. Following SAB, the rhythm converted into normal sinus rhythm [Figure 2]. After 45 min, sensory level regressed to T10 and the rhythm again became irregular. The NIBP remained stable throughout the surgery. The duration of surgery lasted for 80 min, and the post-operative course was uneventful. Twelve-lead ECG after 24 h was similar to the pre-operative ECG.

The goal in the management of this patient was to avoid worsening of VPCs and its haemodynamic implications. Since the patient had no associated haemodynamic disturbances, no antiarrhythmic other than propranolol was suggested. Administering an anxiolytic and providing a calm, quiet environment reduced pre-operative stress and anxiety. Perioperative beta-blocker was continued as it controls symptoms in patients with VPCs from multiple sites.^[1]

We chose neuraxial anaesthesia as there was no structural or physiological abnormality of cardiovascular system, her effort tolerance was good, and the regurgitant fraction would be reduced by SAB. Neuraxial anaesthesia reduces the stress response and provides effective analgesia compared to general anaesthesia (GA), wherein haemodynamic stress responses have to be blunted during intubation and extubation. In the absence of any pathology, normocarbica, normothermia and analgesia could

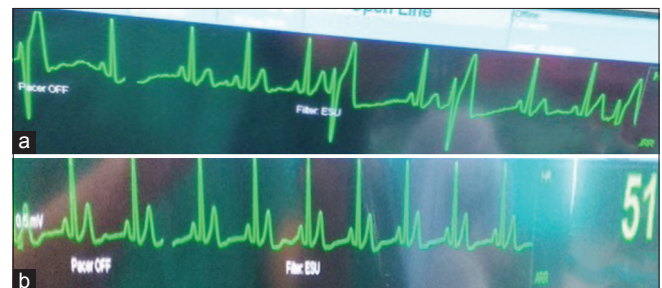


Figure 2: (a and b) Multiple ectopics before giving subarachnoid block and sinus rhythm for 5 min after giving subarachnoid block

be well maintained with SAB. The incidence of bradycardia is increased if the sensory block is T5 or higher due to the inhibition of cardiac accelerator fibres, and the incidence is least with a level of T7–T8.^[2] We achieved a sensory block height of T8 to avoid severe bradycardia in an already beta-blocked patient. Addition of fentanyl to bupivacaine decreased the dose of bupivacaine needed and ensured a longer SAB without potentially increasing the adverse effects of high local anaesthetics. Studies have shown that sympathetic activity returns to normal after the sensory level has regressed to T10,^[3] which might have unmasked the basal stress level in the index patient.

Case reports have been published, wherein the neuraxial route has been safely utilised in arrhythmogenic syndromes such as Brugada and congenital sick sinus syndromes.^[4] There are case reports of management of patients with benign VPCs using GA. There also are case reports of management of patients with dilated cardiomyopathy with combined spinal–epidural anaesthesia, where giving a small dose of intrathecal local anaesthetic followed by epidural drugs is an effective management strategy.^[5]

The aim of submitting this case report was to emphasise the fact that after adequate workup to exclude cardiac pathology and electrolyte imbalance and with necessary resuscitative measures as a standby, a patient with VPCs can safely undergo surgery under SAB.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Gunjan Singh, Manpreet Kaur, Maya Dehnan

Department of Anaesthesiology, Pain Medicine and Critical Care,
All India Institute of Medical Sciences, New Delhi, India

Address for correspondence:

Dr. Manpreet Kaur,
Department of Anaesthesiology, Pain Medicine and Critical Care,
All India Institute of Medical Sciences, E-19 Ayurvigyan Nagar,
New Delhi - 110 029, India.
E-mail: manpreetkaurrajpal@yahoo.com

REFERENCES

1. Ahn MS. Current concepts of premature ventricular contractions. *J Lifestyle Med* 2013;3:26-33.
2. Cousins MJ. Neural Blockade in Clinical Anaesthesia and Pain Medicine. 4th ed. Philadelphia, PA: Lippincott Williams and Wilkins; 2009. 224-6.
3. Stevens RA, Beardsley D, White JL, Kao TC, Gantt R, Holman S, *et al.* Does spinal anaesthesia result in a more complete sympathetic block than that from epidural anaesthesia? *Anesthesiology* 1995;82:877-83.
4. Staikou C, Chondrogiannis K, Mani A. Perioperative management of hereditary arrhythmogenic syndromes. *Br J Anaesth* 2012;108:730-44.
5. Ituk US, Habib AS, Polin CM, Allen TK. Anesthetic management and outcomes of parturients with dilated cardiomyopathy in an academic centre. *Can J Anaesth* 2015;62:278-88

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online	
Quick response code	Website: www.ijaweb.org
	DOI: 10.4103/ija.IJA_182_18

How to cite this article: Singh G, Kaur M, Dehnan M. Management of a case of ventricular bigeminy using central neuraxial blockade. *Indian J Anaesth* 2018;62:567-8.

© 2018 Indian Journal of Anaesthesia | Published by Wolters Kluwer - Medknow