

Management of Hypertensive Patient Posted for TAH in Secondary Care Institute

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Abstract: Hypertension is the commonest avoidable medical cause for postponement of surgery (9). Long standing and uncontrolled hypertension is a major risk factor for causing coronary events, stroke, heart failure, peripheral vascular disease, chronic kidney disease and mortality (1 - 4). Hypertension in the perioperative period increases chances of cardiovascular events, cerebrovascular events, bleeding, mortality and acute kidney injury and should be controlled prior to any major elective surgery (5 - 7). Hypertensive comorbidities associated with adverse perioperative outcomes include occult coronary artery disease (Q waves on the electrocardiogram), heart failure, left ventricular hypertrophy, serum creatinine higher than 2.0 mg/dL, and cerebrovascular disease (10). However, there are no universally accepted guidelines stating the cut off level of blood pressure at which elective surgery should be cancelled (9). Increased rate of complications have been reported if the preoperative diastolic blood pressure is 110 mmHg or higher (11). It is recommended to cancel elective surgery if the systolic blood pressure is 180 mmHg or higher or if the diastolic blood pressure is 110 mmHg or higher (8, 10).

Keywords: Anesthesia, Hypertension, systolic blood pressure, diastolic blood pressure, spinal anesthesia, general anesthesia, fibroid, total abdominal hysterectomy

1. Case Report

A 42 year old female presented with chief complaints of pain abdomen and bleeding per vaginum with failed medical management. She was a known case of hypertension with h/o irregular medication. Clinical examination revealed her NIBP 170/120 mmHg, HR 88/min regular, and SpO₂ 97% on room air. Her ECG showed ST segment Depression in chest leads from V₁ - V₆. CXR and other blood investigations were normal. On auscultation there was no murmur and B/L air entry was equal. Patient was referred to cardiologist and an ECHO was done, which revealed EF of 65% with no other structural or functional abnormality. All the other organ systems were normal. Patient was put on anti hypertensives (Amlodipine 5mg and telmisartan 40mg) for 2 weeks with strict compliance and BP monitoring. After 10 days her BP was reduced to 128/90 mmHg. Patient was asked to continue her medication for another week and then was posted for TAH under spinal anesthesia. Patient was administered inj Midazolam 1mg i/v in the immediate preoperative period. All the standard monitoring including ECG, intermittent NIBP, SpO₂ was attached. Lumber puncture was done in sitting position with 26G Quinke's spinal needle and after confirmation of free flow of CSF patient was administered 2.8cc of 0.5% (H) Bupivacaine + 25_{ug} of fentanyl. Levels upto T6 was attained and surgery was allowed to proceed. Intraoperatively blood pressure and other parameters remained within normal limits. Patient was observed closely for 48 hrs in postoperative period and had an uneventful recovery.

2. Discussion

Hypertension is essentially regarded as one of the commonest medical problem causing disease, disability and reduction in the quality of life. There are 2 types of

hypertension: essential hypertension and secondary hypertension. Essential hypertension is the type of hypertension which does not have a clear cut etiology and accounts for approximately 95% of the cases (13). Various number of factors may contribute to increased blood pressure, including but not limited to obesity, insulin resistance, high alcohol intake, high salt intake, aging, sedentary lifestyle, stress, low potassium intake, and low calcium intake (14). Secondary hypertension has a clear etiology with many causes that may include renal disease, hyperthyroidism, obstructive sleep apnea, hyperaldosteronism, and many others (13). There are 4 levels of blood pressure, as outlined by the American Heart Association/American College of Cardiology in the updated 2017 guidelines (see Table 1).

Category	Systolic, mm Hg	Diastolic, mm Hg
Optimal blood pressure	<120	and <80
Elevated	120-129	and <80
Stage 1 hypertension	130-139	or 80-89
Stage 2 hypertension	≥140	or ≥90
Hypertensive urgency/crisis	>180	or >120

* Updated in October 2017 according to the American College of Cardiology Foundation and the American Heart Association, Inc.

Long standing uncontrolled hypertension may lead to microvascular and macrovascular changes including neuropathy, nephropathy, small vessel involvement leading to blindness, stroke, angina and myocardial infarction. As surgery is a stress full event both physiologically and psychologically, optimal control of blood pressure before surgery becomes more important to reduce the chances of above mentioned injuries. Drugs used for the treatment of

hypertension depend on associated comorbidities (1 - 4). For example, patients with coronary artery disease should be treated with beta blockers and angiotensin converting enzyme inhibitors or angiotensin receptor blockers plus thiazide - or thiazide - like diuretics or calcium channel blockers if additional antihypertensive medication is required (1 - 4, 14). In our case the patient was put on calcium channel blocker Amlodipine 5mg and Atenolol 50 mg once daily. Abdominal surgeries below umbilicus are generally conducted under spinal anesthesia with exception in some cases. We selected spinal anesthesia as technique of choice as it is cheaper, time saving, and most important it avoids any catastrophic elevations of blood pressure which is sometimes seen during intubation. As in our patient who is hypertensive such an elevation of blood pressure can lead to several potential side effects. Moreover after administration of spinal anesthesia due to sympathectomy, fall in blood pressure is seen, mainly due to volume distribution which is helpful in hypertensive patients. All we need to ensure is that the fall in blood pressure seen after sympathectomy should not be more than 20% of the initial values, which we ensured. Therefore in our opinion spinal anesthesia is most suitable for carrying out abdominal surgery.

Declaration of consent

Author certifies that all appropriate consents were taken. The patient understands that the name and identity will not be published and all efforts to conceal the identity will be taken but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflict of interest

There are no conflicts of interest.

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