



Case Report

A case report of vasopressin induced bradycardia and dyspnea after intramyometrial injection during myomectomy

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ABSTRACT

Injecting vasopressin intramyometrially reduces bleeding during myomectomy. It is challenging to the anesthesiologist in view of its side effects. Low concentrations of vasopressin has been considered to be safe, but sometimes it can lead to undesirable effects such as bradycardia with loss of peripheral pulse, non recordable blood pressure further leading to cardiac arrest. We report a case history of a patient who had developed bradycardia and dyspnea along with loss of peripheral pulse after local infiltration of 5 unit of vasopressin (20units diluted in 100ml NS), patient was revived by successful resuscitation.

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1. Introduction

During myomectomy blood loss and intraoperative need for blood transfusion can be significantly reduced by local infiltration of vasopressin.¹ But even a low dose of vasopressin is associated with adverse side effects.¹ We report a patient who developed sudden bradycardia, dyspnea & non recordable blood pressure immediately after intramyometrial injection of vasopressin.

2. Case Report

A 33yrs old woman was scheduled for an open myomectomy in view of uterine fibroid. Her baseline blood investigations, chest x-ray & ecg were normal. She had no significant past medical illness and no history of surgeries in the past.

After pre Anesthetic checkup she was fit and assessed under American society of anesthesiologists –II and surgery was planned. Patient was kept nil per oral for 8hrs, pre medicated with tablet rantac 150mg and tablet diazepam 5mg night before and on the morning of surgery. In pre

operative holding area her baseline vitals were stable (pulse - 82/min, nibp - 126/84 mm of hg, SpO₂ - 100% at room air). ECG showed normal sinus rhythm. IV line was secured with 18g cannula on dorsal aspect of left wrist and she was preloaded with 500ml of ringer lactate.

Patient was shifted to OT and was put in right lateral position. Subarachnoid block was given after identifying L₃-L₄ intervertebral space 3ml of inj. bupivacaine 0.5% heavy as injected intrathecally using a 23g spinal needle and patient was changed to supine position. After 5 mins of anesthesia her PR was 68/min, nibp - 110/68 mm hg.

After 30 minutes of sub arachnoid block, intraoperatively surgeon after communicating to the anesthetist, injected 5units of vasopressin diluted in 20ml of normal saline intramyometrially after confirming negative aspiration of blood before injecting. Immediately patient was restless and complained of dyspnea and had a sudden drop in heart rate upto 21/min and ECG showed sinus bradycardia,

Surgery was kept on hold and patient was resuscitated by administering three doses of injection atropine 0.6mg i.v (30 secs between each dose) & oxygen (6 l/min) was supplemented through a face mask.

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The event lasted for three minutes and patient remained dyspneic and complained of chest discomfort. Gradually heart rate increased upto 90-110/min and nibrp was 176/112 mm hg. Patient was then induced with inj. propofol 100mg i.v & a classical LMA size 3 was placed in oral cavity to maintain spontaneous ventilation. She was maintained with isoflurane 1% in oxygen/nitrous oxide mixture. Within next 10 minutes the patient became haemodynamically stable, surgery was resumed and completed with no further complications.

2.1. Follow up and outcomes

Her post-operative period was uneventful and she was discharged on post operative day 6.

3. Discussion

Vasopressin is principally an anti-diuretic hormone which acts on v1 receptors and produces generalized constriction of blood vessels including coronary vasculature when given at higher doses. It effectively reduces blood loss in uterine myomectomy. The effects include reduced cardiac output and heart rate resulting from vasoconstriction.²

In the above case report patient exhibited bradycardia after infiltrating with vasopressin intramyometrially. Pinprick test performed after spinal anesthesia ruled out chances of high spinal anesthesia. However the patient had no bradycardia, dyspnea prior to vasopressin administration. So the diagnosis was in favor of adverse effects with vasopressin rather than high spinal anaesthesia.^{3,4}

Excessive bleeding in uterine myomectomy is a life-threatening complication. Few case reports suggest that to minimize blood loss vasopressin is commonly used as a haemostatic agent.^{5–10}

4. Conclusion

Vasopressin administering intramyometrially shown bradycardia, dyspnea as anticipated complications. This scenario may be life threatening if not treated immediately. We recommend the dilution used and the total administered dose should be as small as possible and close monitoring for hemostasis. Considering other medical and surgical technique to reduce uterine bleeding can be adopted. Communication between the anesthesiologist and the surgeon is important to identify and treat this rare complication.

5. Source of Funding

None.

6. Conflict of Interest

None.

References

1. Chilkoti G, Mohta M, Nath S, Saxena AK, Khurana P. Anaesthetic concerns with intramyometrial vasopressin during myomectomy. *Ain-Shams J Anaesthesiol.* 2016;9:452. doi:10.4103/1687-7934.189089.
2. Muthukumar M, Mathews L, Vasantha NS, Anoop S. Intramyometrial vasopressin as a haemostatic agent: Is it really safe? *Indian J Anaesth.* 2015;59(1):51. doi:10.4103/0019-5049.149456.
3. Butala BP, Shah VR, Parikh BK, Jayaprakash J, Kalo J. Bradycardia and severe vasospasm caused by intramyometrial injection of vasopressin during myomectomy. *Saudi J Anaesth.* 2014;8(3):396. doi:10.4103/1658-354x.136630.
4. Hung MH, Wang YM, Chia YY, Chou YM, Liu K. Intramyometrial injection of vasopressin causes bradycardia and cardiac arrest - report of two cases. *Acta Anaesthesiol Taiwan.* 2006;44:243–7.
5. Byrne H, Miskry T, Gomez CMH. Using Vasopressin for Myomectomy. *Obstet Gynecol.* 2009;114:169–70. doi:10.1097/aog.0b013e3181ac3f43.
6. Riess ML, Ulrichs JG, Pagel PS, Woehlck HJ. Case report: Severe vasospasm mimics hypotension after high-dose intrauterine vasopressin. *Anesth Analg.* 2011;113(5):1103–5.
7. Frishman G. Vasopressin: if some is good, is more better? *Obstet Gynecol.* 2009;113(2):476–7. doi:10.1097/AOG.0b013e31819698bb.
8. Deschamps A, Krishnamurthy S. Absence of pulse and blood pressure following vasopressin injection for myomectomy. *Can J Anesth.* 2005;52(5):552–3. doi:10.1007/bf03016547.
9. Saha MM, Khushboo, Biswas SC. Assessment of Blood Loss in Abdominal Myomectomy by Intramyometrial Vasopressin Administration Versus Conventional Tourniquet Application. *J Clin Diagn Res.* 2016;10(5):10–3.
10. Kongnyuy EJ, Wiysonge CS. Interventions to reduce haemorrhage during myomectomy for fibroids. *Cochrane Database Syst Rev.* 2007;(1). doi:10.1002/14651858.CD005355.pub2.

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