

## Breakneck Bradycardia Pursuant to Spinal Anesthesia: A Report of Two Cases

Bidaki R<sup>1</sup>, Mirhosseni H<sup>2\*</sup> and Avare R<sup>3</sup>

<sup>1</sup>Assistant professor of psychiatry, Rafsanjan University of medical sciences, Iran

<sup>2</sup>Msc of Anesthesiology, Shahid sadoughi of Yazd medical sciences, Iran

<sup>3</sup>Sudent of Anesthesiology, Shahid Sadoughi of Yazd University of medical sciences, Iran

### Abstract

Abruptly bradycardia is one of the uncommon but fatal complication of spinal anesthesia and may occur at the any stage. Lethal complications during spinal anesthesia can occur in patients without problem in their respiratory or cardiovascular system.

In this article, we present 2 cases with knee arthroscopy and pilonidal sinus excision that complicated with breakneck bradycardia follow to spinal anesthesia. In both two cases there was no problem with ventilation or respiratory system and they have taken 1 lit ringer solution 30 min before procedure. We concluded that must not only take closer care with patients undergoing S.A, at the operation room but also the duration of recovery room.

**Keywords:** Brady cardia; Spinal anesthesia; Bupivacaine

### Introduction

Though haemodynamic changes due to spinal anesthesia (S.A) are noticeable but its favorable relaxation and analgesia is a advantage for using it as a common methods of anesthesia and the side effects are fewer compared to general anesthesia [1].

Abruptly bradycardia is one of the uncommon but fatal complication of S.A and may occur at the any time of approach [2].

The incidence of bradycardia and cardiac arrest in S.A is more common than regional anesthesia (R.A) method [3].

Fatal complications during spinal anesthesia can occur in patients without problem in their respiratory or cardiovascular system [4].

Some complications happen in healthy young adult during S.A. We are interested to know whether these complications are predictable or avoidable [5].

Bradycardia during anesthesia is common and may led to cardiac arrest or death . Amount of heavy local anesthetic and level of blockage or two risk factors for hypotension and bradycardia during anesthesia [6].

In a study, was been showed add the epinephrine to local anesthetic agents could not prevent cardiovascular complication during spinal anesthesia significantly [7].

Bradycardia during S.A is determined as a heart rate of less than 50 bpm patient with risk factors for bradycardia or parasympathetic over activity during S.A seems to be at increased risk for cardiac arrest during S.A. severe bradycardia (Pulse of 20-40 bpm ) has often been implied cardiac arrest during S.A.[8].

In orthopedic surgeries, hemodynamic collapse could have occurred at the moment of periosteum manipulation and leads to sudden fall in heart rate [9].

### Case Presentation 1

A 35 years- old man who was scheduled for knee arthroscopy. There was no abnormality in clinical tests or physical exams and past

medical history. He was located in ASA- I, the method had explained for the patient and he was agreed with that .The approach accomplished at the L<sub>3</sub>-L<sub>4</sub> level with 0.75mg bupivacaine (1.5cc of 0.5% solution) and tested the level of anesthesia that was on L<sub>1</sub> level . The patient was quite comfort and calm in supine position. The EKG monitoring had established .The blood pressure was 110/80 mmHg and pulse rate 73 bpm. After 45 minutes the patient became pale severely and his pulse rate fall down to 26 bpm coincidentally. These events happened rapidly. Injection of atropine (1mg) was effective. There was no especial problem until end of surgery. He referred to cardiologist for more scrutinize but was found any problem in his assessment.

### Case Presentation 2

A 27 years old man who had selected for excision of pilonidal sinus. The primary blood pressure was 120/80 mmHg with a pulse rate of 78 bpm in prone position .He was located in ASA-I, spinal anesthesia achieved at L<sub>4</sub>-L<sub>5</sub> level with 75 mg lidocaine (1.5 cc of 5% solution) and tested the level of anesthesia that was on L<sub>2</sub> level. ECG monitoring established .Bradycardia occurred after 25 minutes (38 bpm) with nausea and treated by prompt administration of atropine. In both two cases there was no any problem with ventilation or respiratory system and they have taken 1 lit ringer solution 30 min before procedure.

### Conclusion

Although bradycardia is predictable subsequent to spinal anesthesia (S.A) most often at the first 20 minutes , It hardly suggestion that must be care in all duration of surgery and PACU.

In spite of good ventilation, pre hydration, level of anesthesia or

**\*Corresponding author:** Mirhosseni H, Msc of Anesthesiology, Shahid sadoughi of Yazd medical sciences, Iran, **E-mail:** [Mirhosseni.h@gmail.com](mailto:Mirhosseni.h@gmail.com)

**Received** September 21, 2011; **Accepted** November 08, 2011; **Published** November 08, 2011

**Citation:** Bidaki R, Mirhosseni H, Avare R (2011) Breakneck Bradycardia Pursuant to Spinal Anesthesia: A Report of Two Cases. J Anesthe Clinic Res 4:293. doi:10.4172/2155-6148.1000293

**Copyright:** © 2011 Bidaki R, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

any co-existing disease, bradycardia after S.A is a hazard. There is no difference according to age, type of local anaesthetic drugs, level of approach and operation

Although the common reasons of brady cardia during spinal anesthesia are include block of sympathetic, surgical manipulation, co-exist disease and etc , we could find any of these reasons for brady cardia , We decide to report two cases .

We must not only take closer care with patient s undergoing S.A , at the operation room but also the duration of recovery room .

## References

1. Mokaram Dori M, Mousavi N (2009) Comparison of haemodynamic changes and pain after inguinal hernia and undescending testis surgeries in 1-12 years old children with two methods of anesthesia: Spinal anesthesia with lidocaine 2% and general anesthesia. Journal of Iranian society anaesthesiology and intensive care spring 30: 46-50.
2. Lovstad R Z, Granhus G, Hetland S, Dycardia (2000) Asystolic cardiac arrest during spinal anaesthesia: A report of five cases. Acta Anaesthesiologica Scandinavica 44: 48-52.
3. Auroy Y, Narchi P, Messiah A, Litt L, Rouvier B, et al. (1997) Serious Complications Related to Regional Anesthesia: Results of a Prospective Survey in France. Anesthesiology 87: 479-486.
4. Thrush DN, Downs JB (1999) Vagotonia and Cardiac Arrest during Spinal Anesthesia. Anesthesiology 91: 1171- 1173
5. Chatzimichali A, Zoumprouli A, Metaxari M, Apostolakis I, Daras T, et al. (2011) Heart rate variability may identify patients who will develop severe bradycardia during spinal anaesthesia. Acta Anaesthesiol Scand 55: 234- 241.
6. Chinachoti T, Tritrakarn T (2007) Prospective study of hypotension and bradycardia during spinal anesthesia with bupivacaine: incidence and risk factors, part two. Med Assoc Thai 90: 492- 501.
7. Beyzaii H, Kiafar M, Maghferati V, Nasiri R, Vafae T (2009) Studying some of the hemodynamic effects of adding epinephrine to lidocaine for spinal anesthesia. Journal of medical science of Islamic Azad university of Mashhad win 4: 251-258.
8. Pollard JB (2001) Cardiac Arrest During Spinal Anesthesia: Common Mechanisms and Strategies for Prevention. Anesth Analg 92: 252-56.
9. Garg R, Karunagaran P, Pawar M (2011) Periosteal nociceptors induced hypotension and bradycardia under spinal anesthesia -A report of two cases. Korean J Anesthesiol 60: 52-53.

This article was originally published in a special issue, **Neuro Anesthesia** handled by Editor(s). Dr. Dario Caldiroli, Direttore della Neuroanestesia dell'Istituto Besta di Milano, Italy