

## Clinical Image: Desflurane During Cardiopulmonary Bypass

Manso MA<sup>1</sup>, Bermudez L<sup>1</sup>, Orriach GJL<sup>1\*</sup>, Núñez M<sup>1</sup>, Hernandez P<sup>1</sup>, Escalona JJ<sup>1</sup>, Feal J<sup>1</sup>, Carnero D<sup>1</sup>, Guerrero M<sup>1</sup>, Navarro I<sup>1</sup>, Ruiz A<sup>2</sup>, Rubio M<sup>1</sup> and Cruz J<sup>1</sup>

<sup>1</sup>Department of Anesthesia and Intensive Care, HU Virgen de la Victoria, Malaga, Spain

<sup>2</sup>Department of Cardiology, HU Virgen de la Victoria, Malaga, Spain

\*Corresponding author: Orriach GJL, Department of Anesthesia and Intensive Care, HU Virgen de la Victoria, Malaga, Spain, Tel: 0034951032217; E-mail: guerreroorriach@gmail.com

Received date: Sep 25, 2016; Accepted date: Sep 28, 2016; Published date: Sep 30, 2016

Copyright: © 2016 Manso MA, 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.

Citation: Manso MA, Bermudez L, Orriach GJL, Núñez M, Hernandez P, et al. (2016) Clinical Image: Desflurane During Cardiopulmonary Bypass. J Cardiovasc Dis Diagn 4: i103. doi:10.4172/2329-9517.1000i103

### Clinical Image

There is growing evidence of the benefits of halogenated drugs compared to other hypnotics in patients undergoing cardiac surgery [1]. Different trials have shown a protective effect on myocardial level, sevoflurane and desflurane being those who appear to have a greater advantage. At the same time studies show that continuous use of sevoflurane before, during and after cardiopulmonary bypass protects only if it is changed by another anesthetic at some point [2,3].



**Figure 1:** In the picture we show one pump for cardiac surgery with Desflurane vaporizator included in the machine.

Desflurane has obvious advantages over other halogenated hydrocarbons, such as partition coefficient lower than allows decrease or increase the concentration in the target organ faster than with any other. However, it has been found that in patients undergoing cardiopulmonary bypass decreased concentration of desflurane in blood is less than that which occurs in a patient breathing normally [4], so that the change in hypnotic during by-pass cardiopulmonary could produce greater than necessary concentrations.

The uses of vaporizers that allow the use of desflurane during extracorporeal circulation keeps a single hypnotic throughout the process whose concentration can be changed quickly and in turn get all the benefits of myocardial protection of halogenated (Figure 1).

### References

1. Landoni G, Greco T, Biondi-Zoccai G, Neto CN, Febres D, et al. (2013) Anaesthetic drugs and survival: A Bayesian network meta-analysis of randomized trials in cardiac surgery. *Br J Anaesth* 111: 886-896.
2. Hert DSG, Linden VDPJ, Cromheecke S, Meeus R, Nelis A, et al. (2004) Cardio-protective properties of sevoflurane in patients undergoing coronary surgery with cardiopulmonary bypass are related to the modalities of its administration. *Anesthesiology* 101: 299-310.
3. Bein B, Renner J, Caliebe D, Hanss R, Bauer M, et al. (2008) The effects of interrupted or continuous administration of sevoflurane on preconditioning before cardio-pulmonary bypass in coronary artery surgery: Comparison with continuous propofol. *Anaesthesia* 2008; 63: 1046-1055.
4. Mets B, Reich NT, Mellas N, Beck J, Park S (2001) Desflurane pharmacokinetics during cardiopulmonary bypass. *J Cardiothorac Vasc Anesth* 15: 179-182.