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LETTERS TO THE EDITOR

Atelectasis in postoperative bariatric surgery: how many understand them?



Atelectasia no pós-operatório de cirurgia bariátrica: quantos a entendem?

Dear Editor,

This topic¹ is very important for the multidisciplinary team that working with this population of patients in order to know the possible factors associated with the risk of pulmonary complications and determine strategies to minimize these complications. However, we consider that after deep analysis, some key practical issues need proper discussion.

First, although the retrospective design of the study in question is subject to temporal biases, the assessments performed by different team members may also result in some described results, especially for the very short outcome analysis. In this line, we consider appropriate that it could be interesting to evaluate patients only with previous pulmonary alterations and specific pulmonary test evaluations, so it would be possible to determine the objective and definitions of “higher risk” to develop postoperative atelectasis. Guimarães et al. assess the impact of immediate postextubation use of Boussignac Continuous Positive Airway Pressure (CPAP) on arterial oxygenation in morbidly obese patients undergoing laparoscopic Roux-en-Y gastric bypass. The authors demonstrated application of Boussignac CPAP for 2 h after extubation improved oxygenation but did not improve forced expiratory volume at 1 s and forced vital capacity.²

Secondly, the authors demonstrate that gender is a risk factor associated with atelectasis in the post-operative period, however, 82.8% of subjects included in the study were female, and this outcome would not be expected? This is not clear answer that has implications for preventive postoperative complications protocols. Baltieri et al. determined what moment of application of positive pressure brings better benefits on lung function, incidence of atelectasis and diaphragmatic excursion, in the preoperative, intraoperative or immediate postoperative period and

demonstrated the optimal time of application of positive pressure is in the immediate postoperative period, immediately after extubation, because it reduces the incidence of atelectasis. The predominant gender in the study were female.³

Thirdly, an important point to note in this study was the physical therapy twice a day, which started on the first day after surgery. We previously conducted a randomized clinical trial to evaluate the effect of physical therapy care in the immediate postoperative period in patients undergoing abdominal surgery.⁴ We showed that physical therapy performed in the immediate postoperative period reduced the loss of lung function, loss of respiratory muscle strength and length of stay in the recovery room.

We believe that, as well as the interesting results of this study, further research to assess complications in the post-operative period and possible associated risk factors should be encouraged.

Conflicts of interest

The authors declare no conflicts of interest.

References

1. Baltieri L, Peixoto-Souza FS, Rasera-Junior I, et al. Analysis of the prevalence of atelectasis in patients undergoing bariatric surgery. *Rev Bras Anesthesiol.* 2016;66:577–82.
2. Guimarães J, Pinho D, Nunes CS, et al. Effect of Boussignac continuous positive airway pressure ventilation on PaO₂ and PaO₂/FiO₂ ratio immediately after extubation in morbidly obese patients undergoing bariatric surgery: a randomized controlled trial. *J Clin Anesth.* 2016;34:562–70.
3. Baltieri L, Santos LA, Rasera I Jr, et al. Use of positive pressure in the bariatric surgery and effects on pulmonary function and prevalence of atelectasis: randomized and blinded clinical trial. *Arq Bras Cir Dig.* 2014;27 Suppl. 1:26–30.
4. Junior LAF, Carvalho AT, Ferreira TS, et al. Atendimento fisioterapêutico no pós-operatório imediato de pacientes submetidos à cirurgia abdominal. *J Bras Pneumol.* 2009;35:455–9.

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Non-invasive mechanical ventilation after the successful weaning: where are the limits of venturi mask?



Ventilação mecânica não invasiva após o desmame bem-sucedido: onde estão os limites da máscara Venturi?

Dear Editor,

Weaning from mechanical ventilation is one of the most challenging decisions in the Intensive Care Unit (ICU), due to high mortality rate associated with the cases that fail extubation. Moreover, despite successful weaning tests available on average around 20% of the patients will need a reintubation, facing a dramatic decline on their clinical outcomes.

Adiyeye et al.¹ on their study tackle the impact of None Invasive Mechanical Ventilation (NIMV) on the patient's outcome during the weaning process and the extubation period through the comparison with Venturi Mask. As a final disclosure the authors recommend the use of NIMV unless for a minimum of 48 h after extubation due to the noticed reduction on the respiratory failure and the length of stay on ICU.

Nevertheless, after carefully analyzing this study we consider that there are some key practical regards needed to take into account.

First, Adiyeye et al.¹ expand the recommendation for the NIMV not only to the high reintubation risk patients but also to the ones likely to developed an acute respiratory failure requiring a reintubation. This is in opposite direction regarding other previous larger studies based on data from Esteban et al.,² Nava et al.,³ and larger meta-analysis, regarding the none invasive mechanical ventilation role in the postextubation respiratory failure.⁴ Those papers showed benefit on mortality rates only when NIMV applied to selected patients, specifically when underlying cardiac or respiratory disease exists.

Second, only 50 patients were considered, translating in a small group, which probably limits considerably the aftermath. No significant reduction on mortality or reintubation rates was seen. However other studies, Ferrer et al.,⁵ showed a relevant decrease in mortality. These

differences may presumably be because of the small sample size observed. Of note in both of the studies, Adiyeye et al.¹ and Ferrer et al.⁴ agreed on the lack of 90 day survival rates differences among the two groups. But no data on the destination ward type after downgrade from the ICU, for example intermediate, telemetry or regular medical wards. As seen in our daily practice, the transition to plain medical wards sometimes is poorly tolerated. No data available to confirm nor denied the hypothesis but maybe this aspect should be taken into account when thinking on the 90 day survival rate.

Third, the study lacks to mention patient's underlying clinical conditions. Bearing in mind that three out of the four main NIMV indications are Acute on chronic respiratory failure, cardiogenic respiratory edema and weaning from ventilator, it would be logical to think of those special NIMV benefits and applying them to the patients with underlying cardiac or respiratory disease, along the weaning process.

As seen in the recent paper from Thille et al.,⁶ the implementation of prophylactic NIMV protocols after extubation may reduce the reintubation rate when those requirements are met. On the cardiac side the authors admitted a wide range of cardiovascular entities (valvulopathies, ischemia, arrhythmic diseases) having all of them in common the acute cardiac failure. The positive pressure ventilation effects on hemodynamics, when the patient is properly hydrated, is to improve the left cardiac output through the increase on pre-load and the decrease after-load, so reinforcing the cardiovascular balance and eliminating one of the potential causes of failure to weaning and reintubation. As seen on the paper, in these type of patients, the weaning process uses the Pressure-Support (PS) modality rather than T-piece, without losing the positive pressure effects on the cardiac outcome, even for a little time, and then increasing the weaning success. Looking at the side dealing with respiratory conditions, we find chronic lung diseases, obstructive, restrictive, even obesity-hypoventilation syndrome which belongs to the natural NIMV framework for the respiratory support. So using the non invasive mechanical ventilation on the weaning and later on, we offer a "soft landing" to the ill lung after the intubation period, and doing so once again, we reduce significantly the reintubation rate.

We agree that further and larger clinical research is demanded, to elucidate the role of complete NIMV in the clinical evolution of the patient along the post-extubation stage.