

Short Communication

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Depth Neuromuscular Block in Laparoscopic Surgery: Usefulness In Laparoscopic Kidney Donation From Living Donor

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In the last years the surgical techniques have evolved and, in particular, laparoscopic and robotic surgeries have made a significant advantage compared to traditional surgery [1].

These techniques have brought up new issues related to the presence of pneumoperitoneum (generated by insufflation of CO_2) that is crucial to optimize the abdominal cavity to ensure a good vision of the surgical field [2,3].

The new challenge for the anesthetist is to deal with physiological changes determinated by pneumoperitoneum (haemodynamic, respiratory and renal alterations) which must be minimized in renal transplantation [4]; and at the same time guaranteeing the optimal working conditions for the surgeon, while keeping unchanged the safety parameters of the patient, in the intraoperative phase, during the awakening phase and the discharge from the surgical unit.

Thanks to the appearance on the market of new drugs in anesthesia, especially new curares (rocuromium bromide) and new antagonists (sugammadex) it is possible to improve the muscle relaxation and especially its resolution resulting in better effectiveness, efficiency and safety.

Therefore, today, optimizing muscle relaxation, the surgical space does not change also reducing CO_2 insufflation pressure of 12-15 mmHg to 10-8 mmHg to create the pneumoperitoneum [5,6]

Several studies have demonstrated how deep neuromuscular relaxation can optimize the surgical field and reduce the pathophysiological changes due to CO₂ insufflation [7].

To be mentioned Martini's study, where the authors evaluated the quality of surgical condition, as assessed by the surgeon, using a satisfaction scale (Surgical Rating Scale) between 1 and 5 (from extremely unfavorable to optimal condition). They have shown that in laparoscopic procedures, deep neuromuscular relaxation determines better surgical field conditions than a moderate neuromuscular relaxation.

Borg said that during laparoscopic kidney donation from living donor it is crucial to reduce pneumoperitoneum induced stress. This stress is dangerous for the patient and for the organ removed.

Today this can be obtained not only with an adequate volume expansion, which began on the evening before surgery and continued in the operating room [8,9,10], but also with a deep neuromuscular relaxation that allows to reduce the intraperitoneal CO_2 insufflation pressures to 10-8 mmhg maintaining a good surgical vision.

The deep neuromuscular block and the monitoring are crucial to reach this objective.

During the neuromuscular monitoring it is necessary to keep the Train Of Four (TOF) rates equal to zero and try to reach a Post Tetanic Count (PTC) lower than 5 twitches, that it is known to be the value to be reached to obtain an optimal deep neuromuscular block.

The problem of total recovery from neuromuscular blockade is now solved with the new reversal Sugammadex thanks to which the risks of Postoperative Residual Curarization (PORC) are avoided, and there is a rapid and immediate recovery from neuromuscular block [11].

and surgeon, can reduce the problems related to the relaxation of the muscular wall and can give more security in the surgical field.
In this way, the surgeon can work in the best way, reducing the stress for the patients, eliminating the anesthetic issues of inadequate

muscle relaxation, have a safe awakening and in the kidney laparoscopic donation protect the function of the organ removed.

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This opportunity can ease the team work between anesthetist

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