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Effect of depth of neuromuscular block on intraoperative surgical conditions and pain in morbidly obese patients undergoing laparoscopic bariatric surgery: A double blind randomized controlled trial

Bart Torensma[1,2]**, Martini C, Boon M, In 't Veld B, Liem R, Knook M, Swank D J** and **Dahan A**
[1]Leiden University Medical Center, Netherlands
[2]Dutch Obesity Clinic West, Netherlands

Background: It remains unknown whether the administration of a deep neuromuscular block (NMB) during bariatric surgery improves surgical conditions and patient outcome. The authors studied the effect of deep versus moderate NMB in laparoscopic bariatric surgery on surgical conditions and postoperative pain.

Methods & Results: Hundred patients scheduled to undergo elective bariatric surgery were randomized to a deep NMB (post-tetanic-count 2±3) or a moderate NMB (train-of-four 1±2). The quality of the surgical field was scored using the Leiden-Surgical Rating Scale (L-SRS), a 5-point scale ranging from 1 (extremely poor conditions) to 5 (optimal conditions). Three surgeons scored the L-SRS at 10-min intervals during surgery, postoperative pain scores were obtained in the post anesthesia-care-unit (PACU) and on the ward. Mean (95% confidence interval) L-SRS scores in moderate NMB 4.2 (4.0±4.4) versus 4.8 (4.7±4.9) in deep NMB (p<0.001). Moderate NMB resulted in 17% of scores at L-SRS scores of 1±3, while deep NMB resulted in 100% scores at the high end of the L-SRS (4±5). Deep NMB led to improved pain scores in the PACU (4.6 (4.2±4.9) versus 3.9 (3.6±4.4), p=0.03) and reduced shoulder pain on the ward (1.8 (1.5±2.1) versus 1.3 (1.1±1.5), p=0.03). A composite score of pain and opioid use in the PACU favored deep NMB (p=0.001).

Conclusions: In bariatric surgery, deep relaxation has advantages for surgeon and patient. Compared to moderate NMB, deep NMB produced stable and improved surgical conditions with less postoperative pain.
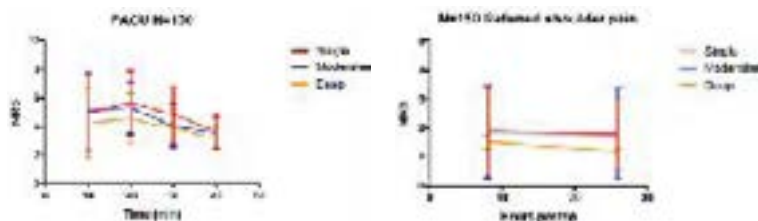
Biography

Bart Torensma (MSc) has his experience in the field of Epidemiology and Anesthesiology. As CRNA he developed, in the last 10 years, the fast track bariatric surgery for the Dutch Obesity Clinics in the Netherlands. As PhD candidate at the University of Leiden (LUMC) he is doing research in the subjects with obesity combining this with the research in the operation theatre during surgery. Deep neuromuscular blockage and the finding of reducing pain post-operative with lower opiate consumption is one of his research projects. Furthermore, he developed his own masterclass in Epidemiology, Anesthesiology and Physiological effects of stress in the brain and the effect on the human behavior.

info@barttorensma.nl

Notes:

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