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Comparative study between general and thoracic Q1 spinal anesthesia for laparoscopic cholecystectomy

Mohamed Ellakany
Alexandria University, Egypt

Background: Laparoscopic cholecystectomy is usually done under general anesthesia, but many patients with major medical problems sometimes cannot tolerate such anesthesia, and thoracic spinal anesthesia may be beneficial in such patients. A comparative study between two groups of patients submitted to laparoscopic cholecystectomy using either general anesthesia or segmental thoracic spinal anesthesia.

Aim: The aim of this study is to compare discharge time, patient, and surgeon satisfaction between two groups of healthy patients submitted to laparoscopic cholecystectomy under general and segmental thoracic spinal anesthesia.

Patients & Methods: Forty patients classified according to American Society of Anesthesiology (ASA) as class I or II undergoing laparoscopic cholecystectomy, divided into two groups, 20 patients each. Group G received conventional general anesthesia with endotracheal intubation and mechanical ventilation, and group S received a segmental (T10-11 injection) thoracic spinal anesthesia (through combined spinal epidural) using 1 ml of plain bupivacaine 0.5% (5 mg) in addition to 25 lg fentanyl. In group S, drugs to manage patient anxiety or hemodynamic perturbations (bradycardia or hypotension) were given when needed. Intraoperative monitoring, postoperative pain, complications, recovery time, and patient satisfaction at follow-up were compared between the two groups.

Results: As regards the thoracic spinal group, spinal anesthetic was performed easily in all 20 patients, although two complained of paresthesia, which responded to slight needle withdrawal; the block was effective for surgery in all 20 patients, and five experienced some discomfort, which was readily treated with small doses of fentanyl, but none required conversion to general anesthesia; five patients required midazolam for anxiety, eight patients required ephedrine and atropine for hypotension and bradycardia, and recovery was uneventful and without sequelae.

Conclusion: Patients received segmental thoracic spinal anesthesia had shorter discharge time and better satisfaction. Surgeon satisfaction was higher in general anesthesia group. Segmental thoracic spinal anesthesia can be used successfully and effectively for laparoscopic cholecystectomy in healthy patients by experienced anesthetists.

mlakany@yahoo.com

Human factors in the design of medical simulation tools

Norah AlRomi
Prince Sultan University, Saudi Arabia

This paper describes the human factor design issues relevant to medical simulation systems. Decision making in medical domains is an increasingly complex task that involves a number of stakeholders, sub-specialties and technologies. Medical simulation creates a lifelike situation for individuals to practice decision-making and procedural activities in a safe environment for the patients and professionals where it involves simulated human patients, emergency response and simulated animation. Evidence suggests that medical simulation improves the effectiveness, safety, and efficiency in health care services. Moreover, it has been shown to consistently deliver significant value to the organization, staff, or students in decision-making. Although medical simulation provided ideal approaches for addressing healthcare issues, the number of successful software implementation and development is relatively small compared with other established engineering disciplines, such as the manufacturing industry. Software quality models in particular offer the opportunity to systematically assess the level of compliance of software systems with industry standards. In addition, applying software quality models increase the customer satisfaction and decrease the quality cost.

norah.r.it@gmail.com