

General Anesthesia Used in Laparoscopic Cholecystectomy

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Abstract

Background: Laparoscopic cholecystectomy is presenting new anesthetic challenges. The choice of the anesthetic technique for laparoscopic cholecystectomy is limited most frequently to general anesthesia. The most widely used anesthesia technique is balanced general anesthesia, including several intravenous and inhalation agents, with neuromuscular blocking drugs, tracheal intubation, and intermittent positive pressure ventilation (IPPV). The physiological effects of intraperitoneal carbon dioxide insufflation combined with variations in patient positioning can have a major impact on the cardiorespiratory function, particularly in elderly patients with comorbidities.

Aims and Methods: This prospective descriptive study was performed during January 2015 –

December 2019 and included data from 2707 patients ASA I-III, admitted to the hospital for General Surgery with a diagnosis of calculus cholecystitis. The patients were divided into two groups: in the first were included patients that performed open cholecystectomy and in the second groups patients that performed laparoscopic cholecystectomy. General anesthesia according to protocol was the same and was applied to all patients. We analyzed PONV (postoperative nausea and vomiting) and POPC (postoperative pulmonary complications) during the 24 first hours.

Results: We analyzed in total 2707 patients, 1728 (64%) were female and 979 (36%) were male with ages ranging between 13-94 years (the mean age was 57.7 years). According to the procedure,

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2293 (84.7%) patients performed open cholecystectomy and 414 (15.3%) patients performed laparoscopic cholecystectomy. PONV was especially present after laparoscopic surgery requiring antiemetic medication in 244 (59%) of patients, while it was present in 940 (41%) of cases in patients who performed open cholecystectomy, especially in female patients 855 (91%). Postoperative pulmonary function was presented through reduction of 29% in forced vital capacity after laparoscopy cholecystectomy, and of 51% after open cholecystectomy while the pain was reduced by about 40% after laparoscopic cholecystectomy.

Conclusion: Laparoscopic cholecystectomy has been demonstrated to be a major development in the treatment of patients with symptomatic gallbladder disease. The ideal anesthetic technique for laparoscopic cholecystectomy should maintain stable the cardiovascular and respiratory functions, provide rapid post-operative recovery, lead to minimal PONV, and provide good post-operative pain relief for early mobility.

Keywords: General anesthesia, laparoscopic cholecystectomy, open cholecystectomy, pneumoperitoneum.