Evaluation of liver function after laparoscopic surgery

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Doctorial (PhD) Thesis , 2002

Abstract

Increased intra-abdominal pressure by CO2 pneumoperitoneum produce a variety of alterations in the pulmonary, cardiovascular and hepatic functions. In this study we evaluate the disturbances in liver function tests after uncomplicated laparoscopic surgery by comparison to open surgery in patients with normal preoperative function tests. The levels of postoperative day one liver function tests were different from their preoperative levels as follows: In cases of LC, the levels of ALT, AST and SGGT were significantly elevated. While the elevations in the levels of BIL, ALP and PT were not significant. In cases of OC the levels of AST and ALP were significantly elevated. While the elevations in the levels of BIL, ALT, SGGT and PT were not significant. In cases of LIHR and LV, the changes in all parameters measured were not significant. There are several mechanisms to explain these results: Increased intra-abdominal pressure created by the pneumoperitoneum during laparoscopic cholecystectomy, the squeeze pressure effect on the liver by the traction of the gallbladder, prolonged use of diathermy to the liver, pulling on the gallbladder creates a transient kink in the extrahepatic ducts or passage of a small bile duct stone. So following uneventful laparoscopic cholecystectomy in clinically well patients with normal preoperative liver function tests, early post-operative elevations of liver enzymes should not be an indication to order ERCP instead serial measurements of liver enzymes are indicated. Increased intra-abdominal pressure by CO2 pneumoperitoneum more than 12mm Hg increases the risk of intestinal ischaemia and hepatocellular injury especially in susceptible patients and in these cases low pressure pneumoperitoneum or gasless laparoscopic surgery is indicated. Also, AST and ALP increased significantly after open cholecystectomy and it is well known that the metabolic and inflammatory response after open surgery is more than after laparoscopic surgery.

Keywords

Chronic liver disease (chronic hepatitis C, hepatic schistosomiasis), Neuropathy (hepatic neuropathy, Muscle wasting and weakness,