SHORT COMMUNICATION

Hemocoagulative Considerations on Laparoscopic Cholecystectomy in Patients with Liver Cirrhosis

Veronica Vecchio[1], Eva Intagliata[2], Rossella Rosaria Cacciola[3], Emma Cacciola[4], Rosario Vecchio[5]

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Abstract

A still debated issue is how to treat gallbladder diseases in patients with advanced stages of liver cirrhosis. Laparoscopic cholecystectomy has specific advantages in patients with liver cirrhosis. Complications of the wound, incisional hernia rate, operating time, and hospitalization time are significantly reduced due to the less invasiveness of laparoscopic cholecystectomy. The risk of contamination of the ascitic fluid and the exposure of the surgical team to fluids infected by hepatitis C virus (HCV) or hepatitis B virus (HBV) are reduced. The risk of bleeding is also reduced, either because of the less invasiveness of the procedure or the pneumoperitoneum pressure, which induces vascular compression. There is another important reason that can help reduce bleeding during laparoscopic cholecystectomy in cirrhotic patients. Laparoscopic surgery induces activation of coagulation and fibrinolytic pathways. This prothrombotic tendency may be a further advantage for cirrhotic patients who tend to have alterations of coagulation in a prohemorrhagic sense.

Keywords: Hemocoagulation, Liver cirrhosis, Subtotal laparoscopic cholecystectomy.

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A problematic still debated issue is how to treat patients with advanced stage of liver cirrhosis when they get affected by symptomatic gallbladder stones. It is preferable to avoid cholecystectomy in favor of a less invasive percutaneous cholecystectomy in the presence of Child–Pugh C patients.[1] In fact, in a cirrhotic liver with portal hypertension, it is common to find dilated and tortuous vessels even on the bed of the gallbladder, which can be damaged during the dissection, with consequent bleeding difficult to control. In such patients, another option could be to perform a laparoscopic subtotal cholecystectomy, called subtotal type I cholecystectomy, which leaves intact the posterior wall of the gallbladder attached to the liver.

In patients with liver cirrhosis, laparoscopic cholecystectomy has some advantages. Complications of the wound, incisional hernia rate, operating time, and hospitalization time are significantly reduced due to the less invasiveness of laparoscopic cholecystectomy.[2] The risk of contamination of the ascitic fluid, with bacterial dissemination, and the exposure of the surgical team to fluids potentially infected with hepatitis C virus (HCV) or hepatitis B virus (HBV) are reduced. Furthermore, the laparoscopic approach reduces the adhesion formation that would make a possible transplant more difficult in patients candidate for liver transplantation.

Advantages referring to the risk of bleeding during laparoscopic cholecystectomy in cirrhotic patients can also be found. The smaller size of the trocar incisions reduces the blood loss from the muscular wall and the risk of interrupting of important collateral vessels due to portal hypertension.[3] The magnification of the visual field by the camera and the positive pressure caused by the pneumoperitoneum, which involves vascular compression, guarantee a better hemostasis. According to some Authors, laparoscopic cholecystectomy appears to be a safe procedure in patients classified as Child–Pugh A and Child–Pugh B stage, because of acceptable complication rates, need for conversion, morbidity, and mortality, with a bit greater demand for transfusion.[4]

[1,3]Department of Biomedical Science, Hematologic Unit, University of Catania, Sicily, Italy

[2]Department of General Surgery and Medico-Surgical Specialties, University of Catania; Policlinico "G. Rodolico–San Marco" Hospital, Catania, Sicily, Italy

[4]Department of Medical Sciences, Surgical Sciences and Advanced Technologies, Hemostasis Unit, University of Catania, Sicily, Italy

[5]Department of General Surgery and Medico-Surgical Specialties, University of Sicily, Catania, Italy

Corresponding Author: Eva Intagliata, Department of General Surgery and Medico-Surgical Specialties, University of Catania; Policlinico "G. Rodolico–San Marco" Hospital, Catania, Sicily, Italy, Phone: +393470674195, e-mail: evaintagliata@gmail.com

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For patients belonging to the Child–Pugh C class, higher complication rates and mortality were found, such as hemorrhages and liver failure.[2,4] We would like to point out another important issue. Our previous study comparing pre- and postoperative values of prothrombin time, fibrinogen, β-thromboglobulin, and D-Dimer, which were statistically higher in the first postoperative day, suggested that laparoscopic surgery induces activation of coagulation and fibrinolytic pathways. β-thromboglobulin elevation might account for postoperative platelet activation with a greater risk of thrombogenicity.[5,6] This prothrombotic tendency, which leads to the recommendation of routine thromboembolic prophylaxis in patients undergoing laparoscopic surgery, may be a further advantage for cirrhotic patients that tend to have alterations of coagulation in a prohemorrhagic sense.

Orcid

Eva Intagliata https://orcid.org/0000-0002-8667-457X

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