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Invited Commentary

An invited commentary on "Does the intermittent pringle's maneuver lose its clinical value in reducing bleeding during hepatectomy? A systematic review and meta-analysis" (International Journal of Surgery 2020 Epub ahead of print) Is there still a role for the intermittent pringle maneuver during hepatic resections?

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Dear Editor,

The Pringle maneuver was first described in the early 1900's as occlusion of the hepatoduodenal ligament in order to greatly diminish blood flow (hepatic artery and portal vein) to the liver [1]. This revolutionized the ability to perform hepatic resections and was a significant advancement in surgery. However, as a consequence of prolonged occlusion of the hepatic inflow there was significant ischemic reperfusion injury. Thus, the intermittent Pringle maneuver (IPM) was introduced. This technique occludes the hepatoduodenal ligament for 15–20 minutes with temporary relief for 5 min. The IPM greatly reduced ischemia reperfusion injury while maintaining hemostasis and thus became a standard technique when performing hepatic resections. However, as surgery moved into the 21st century many advances such as conservative fluid management prior to resections (resulting in a low central venous pressure) and novel technology (LigaSure, Thunderbeat, CUSA) allowed for hemostasis while performing hepatic resections that greatly reduce the need for IPM [2].

Lin et al. attempt to answer if IPM is still a useful maneuver for hepatectomy in their systematic review of 16 studies (6 randomized control trials) [3]. In their review of over 1300 cases there was no difference in intraoperative blood loss, intraoperative blood transfusion, or postoperative complications between hepatectomy cases that utilized IPM and those that did not. Furthermore, in a subgroup analyses of patients undergoing resection of colorectal liver metastases IPM was found to significantly increase the amount of intraoperative blood loss compared to non-IPM resections. This led the authors to conclude that IPM should no longer be used in patients undergoing hepatic resections for metastatic colorectal cancer.

The authors should be commended for performing a novel systematic review and meta-analysis with the intent of unearthing evidence to guide surgical technique. However, the article has a few limitations that should be noted. The analysis includes a notable amount of patients from studies done greater than 25 years ago, and with the significant changes in technology noted above it is hard to know how relevant those patients are to current practice. In addition, the subgroup of patients with colorectal metastases for which the authors recommend discontinuing IPM during resections was ~2% of the entire cohort which may limit generalizability.

Lin and colleagues provide compelling data that IPM may no longer play an integral role for hepatic resections. Furthermore, the finding that IPM may lead to more intraoperative blood loss and transfusions in resections of colorectal liver metastases warrants further investigation. The next step would be a large multicenter looking specifically at outcomes in this particular subgroup.

Provenance and peer review

Invited Commentary, internally reviewed.

Declaration of competing interest

The authors do not report any conflicts of interest related to this study.

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