The American Journal of Surgery (2012) 203, 517–522

The American Journal of Surgery

Laparoscopy/Minimally Invasive Surgery

Laparoscopic splenectomy: outcome and efficacy for massive and supramassive spleens

Vadim P. Koshenkov, M.D.[a,*], Zoltán H. Németh, M.D., Ph.D.[a,b], Mitchel S. Carter, M.D.[a]

[a]*Department of Surgery, Morristown Memorial Hospital—Atlantic Health, Morristown, NJ, USA;* [b]*Department of Surgery, University of Medicine and Dentistry of New Jersey, New Jersey Medical School, Newark, NJ, USA*

KEYWORDS:
Laparoscopic splenectomy;
Massive splenomegaly;
Supramassive splenomegaly;
Hand-assisted laparoscopic splenectomy

Abstract

BACKGROUND: Massive and supramassive splenomegaly are relative contraindications to pure laparoscopic splenectomy (LS).

METHODS: A retrospective review of adult patients was conducted for splenectomy occurring from 1999 to 2009. Massive and supramassive spleens were defined as craniocaudad length ≥ 17 cm or weight ≥ 600 g and craniocaudad length ≥ 22 cm or weight ≥ 1,600 g, respectively.

RESULTS: LS was done for 22 and open splenectomy for 21 patients, of which 12 and 14 were supramassive. Spleen weight and craniocaudad length were comparable. LS was associated with lower blood loss (308 vs 400 mL, $P = .24$), shorter length of stay (3 vs 4.5 days, $P = .054$), and similar morbidity (17% vs 14%). Two reoperations and 1 death occurred with open splenectomy. Operative times were longer for LS (195 vs 105 min, $P = .008$), while the conversion rate was 25%.

CONCLUSIONS: In cases of massive and supramassive splenomegaly, better outcomes are accomplished with LS than open splenectomy, and are comparable to hand-assisted LS.
© 2012 Elsevier Inc. All rights reserved.

The use of laparoscopic surgery for removal of the normal-sized spleen or slightly enlarged spleen has become the standard of care at many centers since it was first introduced in 1992 by Delaitre et al.[1] Since then, several studies have demonstrated the advantages of laparoscopic splenectomy (LS) over open splenectomy (OS) in terms of shorter hospital stay, decreased blood loss, and faster recovery.[2,3]

Despite the advantages offered by LS, there has been reservation for this approach in cases of massive and supramassive splenomegaly. This is due to the inherent challenges involved with large spleens, such as working in a limited space, difficulty with retraction and retrieval, adherence of adjacent organs, and potential trauma to enlarged veins or the splenic capsule resulting in bleeding. Patel et al[4] reported a 10-fold increase in morbidity and prolongation of hospital stay with LS in their cohort of 27 patients with massive splenomegaly. It has been suggested that hand-assisted LS (HALS) has the benefit of improved retraction and intraperitoneal manipulation, while maintaining the benefits of a minimally invasive procedure. Several studies have achieved improved outcomes with the approach of HALS for massive splenomegaly.[5,6] Others have argued that OS should play a significant role in management of massive splenomegaly.[7]

However, as laparoscopic techniques, surgical skills, and instrumentation have improved, so have the outcomes of LS, even in the presence of massive and supramassive splenomegaly. We maintain that pure LS is better than OS and comparable with HALS with respect to outcomes and

* Corresponding author. Tel.: 973-971-5684; fax: 973-290-7070.
E-mail address: vadimkoshenkov@yahoo.com
Manuscript received October 11, 2010; revised manuscript May 16, 2011

0002-9610/$ - see front matter © 2012 Elsevier Inc. All rights reserved.
doi:10.1016/j.amjsurg.2011.05.014

efficacy. In this study, we reviewed a 10-year experience with LS and OS and compared the 2 approaches, with special considerations to spleen size, diagnosis, and operative outcomes.

Methods

We performed a retrospective review of a prospectively collected database for all splenectomies performed on adult patients at our academic tertiary care center from January 1999 to September 2009. Approval from the institutional review board was obtained before review of database. Patients who were aged <18 years or underwent splenectomy in the setting of trauma, bleeding varices, or other major procedures were excluded. All patients were evaluated preoperatively by computed tomography of the abdomen to accurately measure spleen size. Patients were vaccinated for *Pneumoccoccus*, *Haemophilus* influenza and *Meningococcus* ≥2 weeks before surgery. Preoperatively, first-generation cephalosporin was given within 1 hour of incision time.

One hundred nine patients were identified, with a variety of diagnoses, including benign and malignant disease. LS was performed in 75 patients and OS in 34 patients. Massive splenomegaly was defined as either craniocaudad length ≥ 17 cm or weight ≥ 600 g. Supramassive splenomegaly was defined as either craniocaudad length ≥ 22 cm or weight ≥ 1,600 g. There were 43 patients with massive splenomegaly, of whom 22 were treated with LS and 21 with OS. Seventeen of these patients fit the criteria for massive splenomegaly only and 26 for supramassive splenomegaly.

Study outcomes were patient characteristics, diagnoses, spleen weight, craniocaudad length, estimated blood loss, length of stay, operation time, complications, and conversion rates. Data are expressed as medians with ranges or as percentiles. Spleen weight was determined by the total weight of each specimen, excluding the weight of the blood collected from the suction during morcellation of the spleen. The weight of the specimen may have been underestimated with LS. Craniocaudad length was based on the final gross specimen if it was not morcellated intraoperatively. If a spleen was morcellated, craniocaudad length was obtained from preoperative computed tomography of abdomen. Blood loss was based on estimations of both the surgeon and the anesthesiologist. Postoperative length of stay was calculated from the number of days until discharge or transfer from the surgery service. The initiation of oral intake and obtaining blood tests was done at the discretion of the surgeon. Operation time was measured from skin incision to the application of dressings. Conversion was defined as making an incision of 7 to 15 cm at the midline or left subcostal area and was necessary either to control bleeding or because of an inability to complete the procedure laparoscopically. Cases that began laparoscopically but required conversions to the open approach were included in the laparoscopic cohort in the final analysis on an intention-to-treat basis.

LS in the setting of massive and supramassive splenomegaly was performed by an experienced laparoscopic surgeon (M.S.C.) 73% and 92% of the time, respectively. For OS, 60% of cases were done by 1 of 2 experienced surgical oncologists for both massive and supramassive splenomegaly. These 3 surgeons are part of the same surgical group, and the preoperative workup along with postoperative care was standardized and largely the same. The decision to proceed with either a laparoscopic or an open approach depended on surgeon preference.

OS was performed through either a midline or a left subcostal incision in a standard fashion. Briefly, ligation of the splenic artery and vein was done first, and then the spleen was dissected out, mobilized, and removed. Preoperative embolization was not done.

Statistical analysis was performed using χ^2 tests for categorical data and *t* tests or Mann-Whitney *U* tests for continuous data. *P* values < .05 indicated statistical significance.

Surgical technique

Lateral positioning was our preferred approach and has been previously described by Park et al.[8] This technique did not change significantly over the course of the study. Once general anesthesia was induced, a Foley catheter was inserted and compression boots applied. All patients were placed in a right lateral decubitus position using a beanbag, taking care to pad all pressure points. Pneumoperitoneum to a pressure of 20 mm Hg was achieved with a use of a Veress needle placed infraumbilically. An infraumbilical vertical 5-mm trocar was placed, and a 30° angled scope was used. At this point, the pressure was lowered to 15 mm Hg, and 3 additional trocars were placed under direct vision parallel to the left costal margin, about 2 to 4 cm below the inferior tip of the spleen. Local anesthetic was administered at all 4 trocar sites. One of these was a 12-mm trocar, and its location varied depending on the position and angle of the hilum. The other 2 were 5-mm trocars. In cases of supramassive spleens, trocars were sometimes placed as low as the iliac crest to allow for proper traction on the spleen.

The patient was placed in steep reverse Trendelenburg position, allowing for easier anterior retraction of the large spleen and better visualization and access to the hilum. Dissection of the spleen was performed with ultrasonic shears and was started laterally by first dividing the splenocolic ligament. The patient was positioned right side down for this part of the dissection. Lateral peritoneal attachments were divided, and the dissection was carried superiorly as far toward the diaphragm as possible, taking splenophrenic and splenorenal ligaments in the process. Dissection of the hilum was approached from the lower pole and continued in a cephalad direction. The splenic artery and vein were divided together or separately using an endoscopic vascular stapler. If the hilum was broad, the patient was tilted slightly to the left side, and the greater curvature was approached first. Short gastric vessels were individually dissected and

Download English Version:

https://daneshyari.com/en/article/4279993

Download Persian Version:

https://daneshyari.com/article/4279993

Daneshyari.com