

## Laparoscopic Resection of the Retroperitoneal Castleman Disease

Department of Surgery, Chonnam National University Medical School, Korea

**Eunkyu Park, Yang Seok Koh, Young Hoe Hur, Ho Hyun Kim, Jin Shick Seoung, Jung Chul Kim, Hyun Jong Kim, Chol Kyoon Cho**

**Introduction:** Castleman disease is a rare benign disorder that may grow in any area where lymphoid tissue is normally present but the most frequent site is mediastinum (67%). Diagnosis of Castleman disease is difficult and the diagnostic certainty is obtained only by histologic examination. Castleman disease has been reported rarely as a solitary retroperitoneal mass, moreover resected by laparoscopic surgery is seldom reported. We report a case of a Castleman disease presenting as a retroperitoneal nodal localized mass which removed by laparoscopic approach.

**Case:** A 46-year-old female with known retroperitoneal mass which was periodically followed up by abdominal computed tomography was presented for surgical resection due to progressive increased of mass size. The preoperative impression was accessory spleen in the retroperitoneal space in the view point of well margined iso-splenic enhancement on CT scan. On laparoscopic exploration, there was 4 cm sized soft mass at the pancreatic upper border of retroperitoneal space. The patient underwent laparoscopic mass excision and operative time was 135 minutes. Microscopically the retroperitoneal mass was revealed as Castleman disease, hyaline-vascular variant. The postoperative course was uneventful.

**Discussion:** Castleman disease was first described in 1954 and further defined in 1956 by Castleman. Since then much has been learned about the heterogeneity of this condition. Two clinical classifications are established. The unifocal, localized, pseudoneoplastic form, first described in 1956, has a good prognosis, but the multifocal form has a more aggressive course. Three histological types have been identified: hyaline vascular, plasma cell and mixed. At present, there is no standard therapy for Castleman disease, because it's rarity and heterogeneity. However surgical removal could be curative treatment for localized Castleman disease. If surgical resection isn't possible,

irradiation is an effective alternative, with response rates up to 72%. Most of reported case of surgically removed retroperitoneal Castleman disease were done by laparotomy, until now. Recently Ahn et al. reported successful resection of 2-cases of retroperitoneal Castleman disease with laparoscopic surgery. As laparoscopic technique and equipment develops, much more retroperitoneal mass such as Castleman disease could be treated safely in the future.

## The Effect of Splenectomy on Liver Regeneration is Different According to the Amount of Hepatectomy in Rats

Department of Surgery, Kyung Hee University School of Medicine, Korea

**Joohyun Kim, Sun Hyung Joo, Bum Soo Kim, Sang Mok Lee**

**Research Purpose:** Small-for-size syndrome (SFSS) is a major problem in liver surgery, and splenectomy has been tried to decrease the incidence of SFSS. However, the prevention mechanism of splenectomy is not fully understood. To elucidate how splenectomy can counteract SFSS, we tested following hypothesis: the effect of splenectomy on liver regeneration can be affected by the extent of hepatectomy.

**Materials and Methods:** Thirty-six male Sprague-Dawley rats (220-260 g) were divided into splenectomy (n=18) and non-splenectomy (n=18) groups. Each group has three hepatectomy subgroups including non-hepatectomy (n=6), 70% hepatectomy (n=6), and 90% hepatectomy. 3 groups: the non-hepatectomy group, the 70% hepatectomy group, and the 90% hepatectomy group. The animals were euthanized 24 hours after surgery. To assess the liver regeneration, immunohistochemistry of liver tissue using 5-bromo-2-deoxyuridine (BrdU) labeling and western blot analysis of hepatic growth factor (HGF) in the liver tissue were performed.

**Results:** We found that BrdU-positive cells increased depending on the amount of the liver resected in a dose-dependent manner. Splenectomy group showed higher BrdU-positive cell count in 90% hepatectomy subgroup ( $P < 0.001$ ), but not in 70% hepatectomy and non-hepatectomy subgroups. Non-hepatectomy sub-

group showed higher intensity of relative HGF expression ( $P=0.001$ ).

**Conclusions:** According to our observation, we suggest that splenectomy can increase liver regeneration in rats after hepatectomy according to the amount of liver resection, namely in 90% hepatectomy but not in 70% hepatectomy.

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### Effectiveness of Intraportal Prostaglandin E1 Administration after Liver Transplantation

Department of Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea

**Milljae Shin, Sang Hun Song, Jong Man Kim, Choon Hyuck Kwon, Sung-Joo Kim, Jae-Won Joh, Suk-koo Lee**

**Purpose:** Prostaglandin (PG) E1 has been used to improve hepatic blood flow and to reduce ischemia reperfusion injury of allograft in liver transplantation. However, PGE1 undergoes extensive metabolic clearance in the pulmonary and splanchnic circulation during intravenous administration, and the concentration of PGE1 reaching the hepatic allograft is much decreased. This study analyzed the effect of intraportally administered PGE1 on hepatic blood flow and allograft function following adult liver transplantation.

**Methods:** Sixty living or deceased donor liver transplant recipients received continuous infusion of PGE1 (0.73 mcg/kg/hr) for 10 days immediately after reperfusion of the allograft. Of them, forty recipients received intravenously (IV group) via internal jugular vein, and the rest twenty recipients received intraportally (IP group) through the catheter in the inferior mesenteric vein. Postoperative three-week data were collected. We investigated the incidence of venous catheter related complication, change in perihepatic hemodynamics, and postoperative laboratory parameters.

**Results:** In IP group, chylorous ascites was observed more frequently (20% vs. 5%;  $p$ -value=0.005). During the first postoperative week, there was no difference in hepatic arterial and portal venous flow measured by Doppler sonogram between two groups ( $p$ -value=1.000). IP group exhibited a lower initial aspartate aminotransferase (AST) and alanine aminotransferase (ALT) level compared with IV group ( $239.4\pm 120.9$

IU/L vs.  $354.6\pm 244.0$  IU/L;  $p$ -value=0.029 and  $268.1\pm 152.1$  IU/L vs.  $397.3\pm 282.9$  IU/L;  $p$ -value=0.012). Whereas, there was no significant difference in the change with time of these aminotransferase levels between IV and IP groups. No apparent differences were recognized in terms of serum albumin, total bilirubin, alkaline phosphatase (ALP),  $\gamma$ -glutamyl transpeptidase (GGT) and prothrombin time (PT) level between two groups.

**Conclusion:** This study demonstrated that intraportal administration of PGE1 had a better cytoprotective effect against hepatocellular damage than intravenous administration, although it did not have additional benefit for perihepatic hemodynamics.

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### Donor Morbidity Including Biliary Complication in Living Donor Liver Transplantation: A Single-center Analysis of 827 Cases

Department of Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea

**Milljae Shin, Sang Hun Song, Jong Man Kim, Choon Hyuck Kwon, Sung-Joo Kim, Jae-Won Joh, Suk-koo Lee**

**Purpose:** Considering straitened circumstances for deceased donor, living donor liver transplantation (LDLT) has been established as an indispensable surgical strategy to treat patient suffering end stage liver disease. The critical prerequisite to performing LDLT is maximal safety of the healthy live liver donor.

**Methods:** From May 1996 to June 2010, a total of 827 completed donor hepatectomy were performed in our center. Of these, 697 (84.3%) were adult LDLT. Different type of grafts were obtained: 690 right lobes, 7 extended right lobes, 1 right posterior section, 18 left lobes, 2 extended left lobes, and 108 left lateral segments. We analyzed the donor morbidity associated LDLT.

**Results:** There was no donor mortality. No complication was observed in 744 (90.0%) donors. But, 83 (10.0%) of donors experienced complications. Most common complication was wound infection or dehiscence with a incidence of 48 (5.8%). Biliary complication was occurred in 16 (1.9%) donors, which consisted of 10 bile leakages and 6 biliary strictures. The