

FIRST WORLD CONGRESS OF THE

INTERNATIONAL LAPAROSCOPIC LIVER SOCIETY

LAPAROSCOPIC LIVER RESECTION: FROM INNOVATION TO STANDARD PRACTICE JULY 6-8 2017 MAISON DE LA CHIMIE PARIS - FRANCE

INVITED SPEAKERS SESSION 1@ILLS Paris, 8:15-8:30, July 6, 2017

AGEO CENTRAL GENERAL HOSPITAL What's new since Morioka?

Go Wakabayashi, MD, PhD, FACS Director, Center for Advanced Treatment of HPB Diseases Chief, Surgical Services Deputy Director Ageo Central General Hospital

An operation consists of imaging and manipulation

Krummel TM, What is surgery. Semin Pediatr Surg. 2006;15:237-41.

Basic MIS

The main issue in MIS is:

Exposure

If you can't see...you can't operate!

canter for Advanced Surgica

December 8, 2008 in Louisville







J Hepatobiliary Pancreat Sci (2014) 21:723-731 DOI: 10.1002/jhbp.139

TOPIC

Laparoscopic hepatectomy is theoretically better than open hepatectomy: preparing for the 2nd International Consensus Conference on Laparoscopic Liver Resection

Go Wakabayashi · Daniel Cherqui · David A. Geller · Ho-Seong Han · Hironori Kaneko · Joseph F. Buell

Published online: 5 August 2014 © 2014 Japanese Society of Hepato-Biliary-Pancreatic Surgery

Morioka Consensus 10/ 4-6 /2014

The Znd International Consensus Conference on Laparoscopic Liver Resection

4th 6th 2014

Eartiment Chili Go Wakabayashi topermeter logen two Market United Solid Welder Theme Improving Quality of Laparoscopic Liver Resection

Wakabayashi G, et al. Recommendations for Laparoscopic Liver Resection A Report From the Second International Consensus Conference Held In Morioka Ann Surg 261:619-629 2015



Comparative Short-term Benefits of Laparoscopic Liver Resection: 9000 Cases and Climbing

> Ruben Ciria, MD, PhD,*† Daniel Cherqui, MD,‡ David A. Geller, MD, Javier Briceno, MD, PhD,† and Go Wakabayashi, MD, PhD, FACS*||

Total number of worldwide reported laparoscopic liver cases per year

Major resection Minor resection Not-specified

Ciria et al, Ann Surg. 2016;263:761-77.

ORIGINAL STUDY



Forest plots from meta-analysis in comparative series



Specific Aim

 To develop a simple and practical scoring system to assess the difficulty of various laparoscopic liver resection performed in a daily clinical setting.

J Hepatobiliary Pancreat Sci (2014) 21:745–753 DOI: 10.1002/jhbp.166

TOPIC

A novel difficulty scoring system for laparoscopic liver resection

Daisuke Ban · Minoru Tanabe · Hiromitsu Ito · Yuichiro Otsuka · Hiroyuki Nitta · Yuta Abe · Yasushi Hasegawa · Toshio Katagiri · Chisato Takagi · Osamu Itano · Hironori Kaneko · Go Wakabayashi

CQ6: Difficulty scoring system



J Hepatobiliary Pancreat Sci. 2014 ;21:745-53.

ers		ne		IWAT	E Crit	teria	nclud	ing S1	, 4 a/b,	and H	IALS/H	ybrid
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Scoring system												
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octomy more				Scor 0 2 3 4	e	No Yes	So _	core 0 1	CF	hild Pugh A hild Pugh E	Sco A 0 3 1	ore
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Wakabayashi G, Hepatobiliary Surg Nutr. 2016 ;5:281-89.





Publications from the ICCLLR 2014

1: Ban D, Tanabe M, Ito H, Otsuka Y, Nitta H, Abe Y, Hasegawa Y, Katagiri T, Takagi C, Itano O, Kaneko H, Wakabayashi G. A novel difficulty scoring system for laparoscopic liver resection. J Hepatobiliary Pancreat Sci. 2014 ;21:745-53.

2: Wakabayashi G. Towards the 2nd International Consensus Conference on Laparoscopic Liver Resection. J Hepatobiliary Pancreat Sci. 2014 ;21:721-2.

3: Wakabayashi G, Cherqui D, Geller DA, Han HS, Kaneko H, Buell JF. Laparoscopic hepatectomy is theoretically better than open hepatectomy: preparing for the 2nd nternational Consensus Conference on Laparoscopic Liver Resection. J Hepatobiliary Pancreat Sci. 2014 ;21:723-31.

4: Dagher I, Gayet B, Tzanis D, Tranchart H, Fuks D, Soubrane O, Han HS, Kim KH,Cherqui D, O'Rourke N, Troisi RI, Aldrighetti L, Bjorn E, Abu Hilal M, Belli G,Kaneko H, Jarnagin WR, Lin C, Pekolj J, Buell JF, Wakabayashi G. Internationalexperience for laparoscopic major liver resection. J Hepatobiliary Pancreat Sci. 2014 ;21:732-6.

5: Hibi T, Cherqui D, Geller DA, Itano O, Kitagawa Y, Wakabayashi G.

International Survey on Technical Aspects of Laparoscopic Liver Resection: aweb-based study on the global diffusion of laparoscopic liver surgery prior to the 2nd International Consensus Conference on Laparoscopic Liver Resection in Iwate, Japan. J Hepatobiliary Pancreat Sci. 2014 ;21:737-44.

7: Scatton O, Brustia R, Belli G, Pekolj J, Wakabayashi G, Gayet B. What kind of energy devices should be used for laparoscopic liver resection? – Recommendations from a systematic review. J Hepatobiliary Pancreat Sci. 2015;22:327-34.

8: Hasegawa Y, Koffron AJ, Buell JF, Wakabayashi G. Approaches to laparoscopic liver resection: A metaanalysis of the role of hand-assisted laparoscopic surgery and the hybrid technique. J Hepatobiliary Pancreat Sci. 2015; 22:335-41.

9: Morise Z, Ciria R, Cherqui D, Chen KH, Belli G, Wakabayashi G. Can we expand the indications for laparoscopic liver resection? A systematic review and meta-analysis of laparoscopic liver resection for patients with hepatocellular carcinoma and chronic liver disease. J Hepatobiliary Pancreat Sci. 2015;22:342-52.

Publications from the ICCLLR 2014

10: Otsuka Y, Kaneko H, Cleary SP, Buell JF, Cai XJ, Wakabayashi G. What is the best technique in parencymal transection in laparoscopic liver resection? -Comprehensive review for the clinical question on the 2nd International Consensus Conference on Laparoscopic Liver Resection. J Hepatobiliary Pancreat Sci. 2015; 22:363-70.

11: Tranchart H, O' Rourke N, Gaillard M, Lainas P, Sugioka A, Wakabayashi G, et al. Bleeding control during laparoscopic lievr resection: A review of literature. J Hepatobiliary Pancreat Sci. 2015; 22:371-8.

12: Hallet J, Gayet B, Tsung A, Wakabayashi G, Pessaux P. A systematic review of the use of pre-operative simulation and navigation for hepatectomy: Current status and future perspectives. J Hepatobiliary Pancreat Sci. 2015; 22:353-62

13: Wakabayashi G. Systematic reviews from the 2nd International Consensus Conference on Laparoscopic Liver Resection. J Hepatobiliary Pancreat Sci. 2015;22:325-6.

14: Wakabayashi G. From Louisville to Morioka: where is now MILS? Updates Surg. 2015;67:101-4.

15: Hibi T, Cherqui D, Geller DA, Itano O, Kitagawa Y, Wakabayashi G. Expanding indications and regional diversity in laparoscopic liver resection unveiled by the International Survey on Technical Aspects of Laparoscopic Liver Resection (INSTALL) study. Surg Endosc. 2015 Oct 20. [Epub ahead of print]

16: Ciria R, Cherqui D, Geller DA, Briceno J, Wakabayashi G.Comparative Short-term Benefits of Laparoscopic Liver Resection: 9000 Cases and Climbing. Ann Surg. 2016;263:761-77.

17: Cleary SP, Han HS, Yamamoto M, Wakabayashi G, Asbun HJ. The comparative costs of laparoscopic and open liver resection: a report for the 2nd International Consensus Conference on Laparoscopic Liver Resection. Surg Endosc. 2016 Mar. [Epub ahead of print]

18: Kawaguchi Y, Hasegawa K, Wakabayashi G, Cherqui D, Geller D, Buell J, Kaneko H, Han HS, Strasberg S, Kokudo N. Survey results on daily practice in open and laparoscopic liver resections from 27 centers participating in the second International Consensus Conference. J Hepatobiliary Pancreat Sci. 2016 Mar 4. [Epub ahead of print]

Most important message from the ICCLLR 2014

To protect patients from this new surgical procedure

Prospective reporting registry for transparency
A difficulty scoring system to select patients
Creation of a formal structure of education

Ann Surg. 2015; 261: 619-29

Publications on LLR



Multi-institutional study

Ann Surg. 2017 Jun 2. doi: 10.1097/SLA.00000000002332. [Epub ahead of print]

Conversion for Unfavorable Intraoperative Events Results in Significantly Worst Outcomes During Laparoscopic Liver Resection: Lessons Learned From a Multicenter Review of 2861 Cases.

Halls MC¹, Cipriani F, Berardi G, Barkhatov L, Lainas P, Alzoubi M, D'Hondt M, Rotellar F, Dagher I, Aldrighetti L, Troisi RI, Edwin B, Hilal MA.

Br J Surg. 2017 May;104(6):751-759. doi: 10.1002/bjs.10489. Epub 2017 Feb 13.

Outcome after laparoscopic and open resections of posterosuperior segments of the liver.

Scuderi V¹, Barkhatov L², Montalti R³, Ratti F⁴, Cipriani F⁵, Pardo F⁶, Tranchart H⁷, Dagher I⁷, Rotellar F⁶, Abu Hilal M⁵, Edwin B², Vivarelli M³, Aldrighetti L⁴, Troisi RI¹.

Ann Surg. 2017 Jun;265(6):1192-1200. doi: 10.1097/SLA.00000000002147.

Laparoscopic Versus Open Liver Resection for Colorectal Metastases in Elderly and Octogenarian Patients: A Multicenter Propensity Score Based Analysis of Short- and Long-term Outcomes.

Martínez-Cecilia D¹, Cipriani F, Vishal S, Ratti F, Tranchart H, Barkhatov L, Tomassini F, Montalti R, Halls M, Troisi RI, Dagher I, Aldrighetti L, Edwin B, Abu Hilal M.

JAMA Surg. 2016 Oct 1;151(10):923-928. doi: 10.1001/jamasurg.2016.1655.

Outcome and Learning Curve in 159 Consecutive Patients Undergoing Total Laparoscopic Hemihepatectomy.

van der Poel MJ¹, Besselink MG¹, Cipriani F¹, Armstrong T¹, Takhar AS¹, van Dieren S², Primrose JN³, Pearce NW¹, Abu Hilal M¹.

More laparoscopic donor

Transplantation. 2017 Jul;101(7):1628-1636. doi: 10.1097/TP.000000000001675.

The First Comparative Study of the Perioperative Outcomes Between Pure Laparoscopic Donor Hepatectomy and Laparoscopy-Assisted Donor Hepatectomy in a Single Institution.

Takahara T¹, Wakabayashi G, Nitta H, Hasegawa Y, Katagiri H, Umemura A, Takeda D, Makabe K, Otsuka K, Koeda K, Sasaki A.

Transplantation. 2017 May;101(5):1106-1110. doi: 10.1097/TP.000000000001637.

Initial Outcomes of Pure Laparoscopic Living Donor Right Hepatectomy in an Experienced Adult Living Donor Liver Transplant Center.

Kim KH¹, Kang SH, Jung DH, Yoon YI, Kim WJ, Shin MH, Lee SG.

Transplantation. 2017 Mar;101(3):548-554. doi: 10.1097/TP.00000000001532.

Totally Laparoscopic Right Hepatectomy for Living Donor Liver Transplantation: Analysis of a Preliminary Experience on 5 Consecutive Cases.

Rotellar F¹, Pardo F, Benito A, Zozaya G, Martí-Cruchaga P, Hidalgo F, Lopez L, Iñarrairaegui M, Sangro B, Herrero I.

Ann Surg. 2015 Nov;262(5):757-61; discussion 761-3. doi: 10.1097/SLA.000000000001485.

Laparoscopic Living Donor Left Lateral Sectionectomy: A New Standard Practice for Donor Hepatectomy.

Soubrane O¹, de Rougemont O, Kim KH, Samstein B, Mamode N, Boillot O, Troisi RI, Scatton O, Cauchy F, Lee SG, Griesemer A, Ahmed Z, Clavien PA, Cherqui D.

Liver Transpl. 2016 Oct;22(10):1431-6. doi: 10.1002/lt.24504.

Pure 3-dimensional laparoscopic extended right hepatectomy in a living donor.

Suh KS¹, Hong SK², Yi NJ², Lee KW², Kim HS², Yoon KC², Kim H².

Difficulty score validation

J Am Coll Surg. 2017 Apr 10. pii: S1072-7515(17)30351-4. doi: 10.1016/j.jamcollsurg.2017.03.016. [Epub ahead of print]

Validation of a Difficulty Scoring System for Laparoscopic Liver Resection: A Multicenter Analysis by the Endoscopic Liver Surgery Study Group in Japan.

Tanaka S¹, Kubo S², Kanazawa A³, Takeda Y⁴, Hirokawa F⁵, Nitta H⁶, Nakajima T⁷, Kaizu T⁸, Kaneko H⁹, Wakabayashi G¹⁰.

Ann Surg. 2017 Feb 9. doi: 10.1097/SLA.00000000002176. [Epub ahead of print]

Difficulty of Laparoscopic Liver Resection: Proposal for a New Classification.

Kawaguchi Y¹, Fuks D, Kokudo N, Gayet B.

Surg Endosc. 2017 May 19. doi: 10.1007/s00464-017-5589-7. [Epub ahead of print]

Prediction of surgical outcomes of laparoscopic liver resections for hepatocellular carcinoma by defining surgical difficulty.

Periyasamy M^{1,2}, Cho JY³, Ahn S⁴, Han HS¹, Yoon YS¹, Choi Y¹, Jang JS¹, Kwon SU¹, Kim S¹, Choi JK¹, Guro H^{1,5}.

Surg Endosc. 2017 Jan;31(1):430-436. doi: 10.1007/s00464-016-4994-7. Epub 2016 Jun 10.

Validation of difficulty scoring system for laparoscopic liver resection in patients who underwent laparoscopic left lateral sectionectomy.

Im C¹, Cho JY², Han HS¹, Yoon YS¹, Choi Y¹, Jang JY¹, Choi H¹, Jang JS¹, Kwon SU¹.

Learning curve

J Am Coll Surg. 2017 May;224(5):841-850. doi: 10.1016/j.jamcollsurg.2016.12.037. Epub 2017 Jan 20.

Development Process and Technical Aspects of Laparoscopic Hepatectomy: Learning Curve Based on 15 Years of Experience.

Komatsu S¹, Scatton O¹, Goumard C¹, Sepulveda A², Brustia R¹, Perdigao F¹, Soubrane O³.

JAMA Surg. 2016 Oct 1;151(10):929. doi: 10.1001/jamasurg.2016.1698.

The Learning Curve in Laparoscopic Major Hepatectomy: What Is the Magic Number?

Cheek SM¹, Geller DA¹.

Surg Endosc. 2017 Jan;31(1):309-316. doi: 10.1007/s00464-016-4973-z. Epub 2016 Jun 10.

Safely extending the indications of laparoscopic liver resection: When should we start laparoscopic major hepatectomy?

Hasegawa Y¹, Nitta H², Takahara T², Katagiri H², Baba S², Takeda D², Makabe K², Wakabayashi G^{2,3}, Sasaki A².

Surg Endosc. 2016 Jul;30(7):2895-903. doi: 10.1007/s00464-015-4575-1. Epub 2015 Oct 20.

The learning curve of laparoscopic liver resection after the Louisville statement 2008: Will it be more effective and smooth?

Lin CW^{1,2}, Tsai TJ^{3,4}, Cheng TY^{3,4}, Wei HK^{3,4}, Hung CF⁵, Chen YY^{3,4}, Chen CM^{3,4}.

Br J Surg. 2015 Jun;102(7):796-804. doi: 10.1002/bjs.9798. Epub 2015 Apr 15.

Learning curve for laparoscopic major hepatectomy.

Nomi T¹, Fuks D, Kawaguchi Y, Mal F, Nakajima Y, Gayet B.

Laparoscopic 2-stage

Br J Surg. 2015 Dec;102(13):1684-90. doi: 10.1002/bjs.9945. Epub 2015 Sep 22.

Laparoscopic two-stage hepatectomy for bilobar colorectal liver metastases.

Fuks D¹, Nomi T^{1,2}, Ogiso S^{1,3}, Gelli M¹, Velayutham V¹, Conrad C^{1,4}, Louvet C¹, Gayet B¹.

HPB (Oxford). 2017 Jan;19(1):59-66. doi: 10.1016/j.hpb.2016.10.004. Epub 2016 Nov 2.

Transition from open to laparoscopic ALPPS for patients with very small FLR: the initial experience.

Machado MA¹, Makdissi FF², Surjan RC², Basseres T², Schadde E³. Ann Surg Oncol. 2017 Apr;24(4):1048-1049. doi: 10.1245/s10434-016-5620-6. Epub 2016 Oct 12.

Total Laparoscopic Reversal ALPPS.

Machado MA¹, Surjan R², Basseres T², Makdissi F².

Ann Surg Oncol. 2015 Aug;22(8):2787-8. doi: 10.1245/s10434-014-4353-7. Epub 2015 Jan 21.

Totally Laparoscopic Microwave Ablation and Portal Vein Ligation for Staged Hepatectomy : A New Minimally Invasive Two-Stage Hepatectomy.

Cillo U¹, Gringeri E, Feltracco P, Bassi D, D'Amico FE, Polacco M, Boetto R.

Surg_Endosc. 2015 Sep;29(9):2800-1. doi: 10.1007/s00464-014-4000-1. Epub 2014 Dec 17.

Totally laparoscopic ALPPS in the treatment of cirrhotic hepatocellular carcinoma.

Xiao L¹, Li JW, Zheng SG.

Laparoscopic Two Stage Hepatectomy with Selective Portal Vein Embolization

アームモニタート

Synchronous Bilobar Liver Metastasis



3D Laparoscopic Left Lateral Sectionectomy and Three Partial Resections with Selective Portal Vein Embolization

Dorsal Anterior and Posterior Sector PVE



Thirty-five days after the first intervention





3D Laparoscopic Posterior Sectionectomy and Dorsal Anterior Sectionectomy

One week later

Remnant liver volume=617ml

PSM comparison

Surg Endosc. 2017 Mar 9. doi: 10.1007/s00464-017-5466-4. [Epub ahead of print]

Short-term outcomes of laparoscopic vs. open liver resection for hepatocellular adenoma: a multicenter propensity score adjustment analysis by the AFC-HCA-2013 study group.

Landi F¹, De' Angelis N¹, Scatton O², Vidal X³, Ayav A⁴, Muscari F⁵, Dokmak S⁶, Torzilli G⁷, Demartines N⁸, Soubrane O⁶, Cherqui D⁹, Hardwigsen J¹⁰, Laurent A^{11,12}.

Ann Surg. 2017 May;265(5):856-863. doi: 10.1097/SLA.000000000002072.

Pure Laparoscopic Versus Open Right Hepatectomy for Hepatocellular Carcinoma in Patients With Cirrhosis: A Propensity Score Matched Analysis.

Yoon YI¹, Kim KH, Kang SH, Kim WJ, Shin MH, Lee SK, Jung DH, Park GC, Ahn CS, Moon DB, Ha TY, Song GW, Hwang S, Lee SG.

World J Gastrointest Surg. 2016 Sep 27;8(9):643-650.

Short-term and middle-term evaluation of laparoscopic hepatectomies compared with open hepatectomies: A propensity score matching analysis.

Untereiner X¹, Cagnet A¹, Memeo R¹, De Blasi V¹, Tzedakis S¹, Piardi T¹, Severac F¹, Mutter D¹, Kianmanesh R¹, Marescaux J¹, Sommacale D¹, Pessaux P¹.

Br J Surg. 2016 Oct;103(11):1504-12. doi: 10.1002/bjs.10211. Epub 2016 Aug 3.

Propensity score-based analysis of outcomes of laparoscopic versus open liver resection for colorectal metastases.

Cipriani F¹, Rawashdeh M¹, Stanton L², Armstrong T¹, Takhar A¹, Pearce NW¹, Primrose J¹, Abu Hilal M³.

Ann Surg. 2016 Oct;264(4):612-20. doi: 10.1097/SLA.00000000001848.

Pure Laparoscopic Hepatectomy Versus Open Hepatectomy for Hepatocellular Carcinoma in 110 Patients With Liver Cirrhosis: A Propensity Analysis at a Single Center.

Cheung TT¹, Dai WC, Tsang SH, Chan AC, Chok KS, Chan SC, Lo CM.

More PSM comparison

Br J Surg. 2016 Jun;103(7):871-80. doi: 10.1002/bjs.10137. Epub 2016 Mar 31.

Propensity score analysis of outcomes following laparoscopic or open liver resection for hepatocellular carcinoma.

Sposito C¹, Battiston C¹, Facciorusso A¹, Mazzola M¹, Muscarà C¹, Scotti M¹, Romito R¹, Mariani L², Mazzaferro V¹.

Ann Surg. 2015 Nov;262(5):794-802. doi: 10.1097/SLA.00000000001475.

Early and Long-term Oncological Outcomes After Laparoscopic Resection for Colorectal Liver Metastases: A Propensity Score-based Analysis.

Allard MA¹, Cunha AS, Gayet B, Adam R, Goere D, Bachellier P, Azoulay D, Ayav A, Navarro F, Pessaux P; Colorectal Liver Metastases-French Study Group.

Surg Endosc. 2016 May;30(5):1999-2010. doi: 10.1007/s00464-015-4430-4. Epub 2015 Jul 21.

Safety and feasibility of laparoscopic liver resection with associated lymphadenectomy for intrahepatic cholangiocarcinoma: a propensity score-based case-matched analysis from a single institution.

Ratti F¹, Cipriani F², Ariotti R², Gagliano A², Paganelli M², Catena M², Aldrighetti L².

J Hepatol. 2015 Sep;63(3):643-50. doi: 10.1016/j.jhep.2015.04.005. Epub 2015 Apr 12.

Laparoscopic versus open liver resection for hepatocellular carcinoma: Case-matched study with propensity score matching.

Han HS¹, Shehta A², Ahn S³, Yoon YS¹, Cho JY¹, Choi Y¹.

Short-term Outcomes of Major LLR after PSM with NCD

Propensity Score Matching (major LLR n=929, major OLR n=14,262)

	Matched-Lap n=929	Matched-Open n=929	р
Blood loss (cc)	865.4 <u>+</u> 1148.2	1053.8 <u>+</u> 1176.6	<0.001
Op time (min)	441.3 <u>+</u> 152.5	356.4 <u>+</u> 131.8	<0.001
LOS (days)	21	26	<0.001
Morbidity (%)	16.4	23.5	<0.001
30 days mortality (%)	6 (0.6%)	8 (0.9%)	0.790
In hospital mortality (%)	16 (0.7%)	19 (2.0%)	0.733

Takahara T, Wakabayashi G, et al. J Hepatobiliary Pancreat Sci. 2016; 23:721-34.

JSHBPS project study for HCC

After Propensity Score Matching (LLR n=436, OLR n=2969)

	Matched-LLR n=387	Matched-OLR n=387	P
Blood loss (cc)	158	400	<0.0001
Op time (min)	294.4 <u>+</u> 158.8	271.0 ± 130.0	0.0254
LOS (days)	13	16	<0.0001
morbidity (%)	6.7	13.0	0.003
30 days mortality (%)	0	1 (0.26%)	0.317
90 days mortality (%)	1 (0.26%)	4 (1.03%)	0.178

Takahara T, Wakabayashi G, et al. J Hepatobiliary Pancreat Sci. 2015; 22:721-7.

Figure 1



Figure 2



JSHBPS project study for CRLM

After Propensity Score Matching (LLR n=210, OLR n=1121)

	Matched-LLR N=171	Matched-OLR n=342	P
Blood loss (g)	163	405	<0.001
Op t <mark>ime (</mark> min)	282	277	0.130
LOS (days)	12	14	<0.001
morbidity (%)	14.1	12.7	0.631
30 days mortality (%)	0	0	NA
90 days mortality (%)	0	0.6	NA

Beppu T, Wakabayashi G, et al. J Hepatobiliary Pancreat Sci. 2015; 22:711-20.



Online Prospective Registry in Japan

Table 1 Items to be entered for online prospective registry of laparoscopic liver resection in Japan

1. Before surgery

Gender, age, height, weight, body mass index (auto calculation), institutional review board (approved or not), cost (insurance coverage, patient own coverage, research budget coverage, others with specification), malignancy or benign, indications (hepatocellular carcinoma, colorectal liver metastasis, other liver metastasis, cholangiocellular carcinoma, donor, others with specification), disease location (S1–8), max diameter, number of lesions, types of lesions (extrahepatic growth, superficially located, others), proximity to major vessel (yes or no [y/n]), vascular invasion by imaging (y/n), lymph node metastasis (y/n), extrahepatic lesion (y/n), HBs-Ag (positive or negative [p/n]), HCV-Ab (p/n), planned approach methods (pure, hand-assisted lanaroscopic surgery [HALS], hybrid, thoraco, robot), planned extent of resection (Hr0, Hr-LLS, Hr-1, Hr-2, Hr-3,

Prospective registry of laparoscopic liver resection started for transparency

pneumoperitoneal pressure (non-liver resection time [mmHg], liver resection time [mmHg], max pressure [mmHg]), operative position (supine, semi lateral, head up, head down, right up, left up, prone), liver mobilization (y/n), Pringle maneuver (y/n), hilar dissection (Glissonian, individual), intraoperative ultrasound (y/n), lymph node dissection (y/n), bile duct reconstruction (y/n, under pure, under hybrid, with robot)

3. After discharge

Curability (R0, R1, R2), liquids intake (POD), food intake (POD), mobilization (POD), complication over Clavien-Dindo III (y/n), reoperation (y/n), postoperative length of stay (days), in-hospital mortality (y/n, specification of reason), complication 1 (specification, Grade III-V)

Wakabayashi G, Kaneko H. Can major laparoscopic liver and pancreas surgery become standard practices? J Hepatobiliary Pancreat Sci. 2016; 23:89-91

The New Reimbursement Policy has started in Japan

	OLR	LLR
Partial resection	36,340 = \$3,600	59,680 = \$5,900
Sub sectionectomy	56,280 = \$5,600	108,820 = \$10,800
Lt lateral sectionectomy	46,130 = \$4,600	74,880 = \$7,400
One sectionectomy	60,700 = \$6,100	130,730 = \$13,100
Two sectionectomy	76,210 = \$7,600	152,440 = \$15,200
Three sectionectomy	97,050 = \$9,700	174,090 = \$17,400

From April 1, 2016

Number Increases in Registered Patients and Institutions in Japan



Anatomical resection is aesthetics in liver surgery by Go Wakabayashi

aesthetics: a particular theory of beauty or fine art

Laennec's capsule covers the liver



Sugioka A, et al.

J Hepatobiliary Pancreat Sci 24:17-23, 2017

Six gates and Laennec's capsule



Sugioka A, et al.

J Hepatobiliary Pancreat Sci 24:17-23, 2017

Anatomical Liver Resection

✓ Inflow occlusion from the hilar plate

 * 2nd bifurcation: individual ligation possible
* 3rd bifurcation: Glissonian approach from extra-hepatic to intra-hepatic

✓ Resection of demarcated area

✓ Main hepatic veins are the borders

* Exposure of hepatic veins !* Usage of energy devices for hemostasis

Ho CM, Wakabayashi G, et al, Total laparoscopic liver resection for centrally located hepatocellular carcinoma in cirrhotic liver. Surg Endosc 27:1820-1825, 2013

Takahashi M, Wakabayashi G, et al, Pure laparoscopic right hepatectomy by anterior approach with hanging maneuver for large ICC. Surg Endosc 27:4732-4733, 2013



HCC located in S4/8





3D Laparoscopic Central Bisectionectomy





Takasaki K, Springer 2007

Courtesy of Dr. Raphael L. C. Araújo

Cone unit resection

Step 1: Confirm the margin of the cone units after ligature of applicable tertiary branch.

Takasaki K, Springer 2007

Courtesy of Dr. Raphael L. C. Araújo

Cone unit resection

Step 2: Transection of the corresponding tertiary branch

Courtesy of Dr. Raphael L. C. Araújo

Takasaki K, Springer 2007

Cone unit resection

Takasaki K, Springer 2007

Step 3: Cone unit resection is completed

Courtesy of Dr. Raphael L. C. Araújo







3D Laparoscopic S5/6 Cone Unit Resection



"A good knowledge of the anatomy is a prerequisite for modern surgery of the liver" H. Bismuth



Limited Anatomical Resection

-JIUTE

one cilon

G5

G8 dor





Ann Surg. 2017 Jun 27. doi: 10.1097/SLA.00000000002353. [Epub ahead of print]

Laparoscopic Versus Open Resection for Colorectal Liver Metastases: The OSLO-COMET Randomized Controlled Trial.

Fretland ÅA¹, Dagenborg VJ, Bjørnelv GMW, Kazaryan AM, Kristiansen R, Fagerland MW, Hausken J, Tønnessen TI, Abildgaard A, Barkhatov L, Yaqub S, Røsok BI, Bjørnbeth BA, Andersen MH, Flatmark K, Aas E, Edwin B; Oslo-CoMet study group.

Primary end point 30-day morbidity ≥ Accordion grade 2



Conclusion

In the first RCT on lap vs open liver resection:

- 30-day morbidity ≥ grade II was significantly lower after LLR than OLR (19% vs 30%)
- Postop. hospital stay was significantly shorter after LLR than OLR (2 vs 4 days)
- Perioperative results and hospital costs were similar
- Laparoscopic surgery was cost-effective



European Guideline Meeting in Southampton February 9-10, 2017





AGENDA



FOSTER EDUCATION & SKILLS IN LAPAROSCOPIC LIVER SURGERY



Ou first "World congress in Laparoscopic Liver Surgery" will be held in Paris from 6 to 8 of July 2017.

https://www.lap-liver.com



Inaugural General Assembly 21st April, Sao Paulo, Brazil

JULY 6-8 2017

25

CONGRESS CO-CHAIRMEN Daniel Cherqui Olivier Soubrane MAISON DE LA CHIMIE PARIS - FRANCE www.ills2017.com



Satellite Program

<Pre-Congress Course> May 8 (Wed), 2019

Nakamura Memorial Hall, Ageo Central General Hospital

<Hands-On Seminar> May 11 (Sat) - 12 (Sun), 2019

Tokyo Science Center and Medtronic Innovation Center





The 2nd World Congress of the International Laparoscopic Liver Society

Dates: May 9 (Thur.) - 11 (Sat.), 2019

Venue: Keio Plaza Hotel Tokyo, Japan 2-2-1 Netto-Shinjuku, Shinjuku-Ku, Tokyo 160-8030, Julian http://www.keloplara.com



Go Wakabayashi Association (General Hospital

Co-Chairman: Minoru Tanabe



Better Outcomes with Quality Improvement



http://www.ills2019.com/



Congress Secretariat

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Dear Friends and Colleagues:

It is our great honor and privilege to h World Congress of the International Lap. Society (ILLS) from May 8 to 10, 2019, in Tok) hosted the Second International Consensus Confe on Laparoscopic Liver Resection in Morioka in Since then, the field of laparoscopic liver resection expanded exponentially, and evidence has accum to show its superiority over open liver resection. Th step should be to safely disseminate this surgery t sake of our patients.

We believe that ILLS 2019 in Tokyo should focu-

"Better Outcomes with Quality Improvement" in laparoscopic liver resection.

ILLS 2019 in Tokyo will take place at the Keio Plaza Hotel Tokyo in Shinjuku, which is one of the most attractive areas of Tokyo and is conveniently located from both Haneda and Narita international airports. Although the congress will be held from May 8 to 10, 2019, the pre-congress course will begin on May 7 at Ageo Centra General Hospital, which is located only 40 minutes from Shinjuku, and the post-congress hands-on seminar will take place on the evenings of May 10 and May 11 at the Tokyo Science Center and the Medtronic Innovation Center, respectively, near Haneda airport, if you are eager to improve your laparoscopic liver resection skills, please participate in these satellite programs.

We sincerely hope ILLS 2019 in Tokyo will be successful and meaningful. We are sure you will enjoy Tokyo itself, the scientific contents of this congress, as well as the satellite programs. Once again, we would like to welcome you all to the Second World Congress of ILLS in Tokyo.

Warm regards.





Chairman: Go Wakabayashi Co-Chairman: Minoru Tanabe



The 2nd World Congress of the International Laparoscopic Liver Society

ALL ARRIVE PROVIDENCE PROPERTY.

Juality Improvement

Manine als

ILLS 2019