**Supplemental Table 1: All data collection points:**

Year of publication

Study design

RCT

Comparative observational studies

Case series

Prospective

Retrospective

Registry

Study size (# patients or equivalent)

Number of operators

Average or range of number of cases by surgeon

Type of operator

Students

Trainees

Attending surgeons

Nonmedical

Level of assessment

Operators

Institutions

Operators and institutions

Type of institution

Tertiary

Secondary

Unknown

Procedure

Robotic

Gynecology

Hysterectomy

Salpingostomy

Other

Urology

Nephrectomy

Prostatectomy

Other

General Surgery

Cholecystectomy

Colectomy

Abdominal wall

Adrenal

Bariatric

Gastric cancer

Gastric

Fundoplication

Splenectomy

**eTable 1: All data collection points *continued***

Other

Virtual Reality

Desktop trainer

Animal model

Cadaver

Type of outcome used to assess learning

Time

Outcomes measured in the operating room

Conversions

Estimated Blood Loss

Intraoperative Complications

Transfusion

Lymph node count

Other

Outcomes measured after surgery

Postoperative Complications

Length of stay

Mortality

Reoperation

Recurrence

Readmission

Wound infection

Positive margin

Urinary catheter time

Other

Technical skills data

Technical skills score

Instrument position/movement

Errors

Completion of task/success/failure

Force/torque of instruments

Other

Patient orientated data

Time to oral intake

Pain medication used

Quality of life

Time to return to work

Costs

Other

Other

Type of outcome used to assess learning

Intraoperative - continuous

Intraoperative - dichotomous (not rare)

Intraoperative - dichotomous (rare)

**eTable 1: All data collection points *continued***

Intraoperative - categorical

Postoperative - continuous

Postoperative - dichotomous (not rare)

Postoperative - dichotomous (rare)

Postoperative - categorical

Graphically displayed

Box and whiskers

Scatter plot

Column

Area

Pie

Curve fit

Smoother

Regression

Curved line

Straight line

Define curve

Part of learning curve used (intercept, slope, plateau)

Learning Curve Statistics

Descriptive (table)

Split groups (t test, chi-squared test, Mann- Whitney U test, and simple ANOVA)

Experienced versus inexperienced operators

Univariate trend

Repeated measures ANOVA

Curve fitting

Chi-squared for trend

Pearson correlation

Kolmogorov-Smirnoff

Spearman's correlation/analysis/rho

Jonckheere-Terpstra Test

Friedman

Multivariate split groups (experience included as one factor as well as age of pt. etc.)

Multivariate trend

Regression model

Logistic

Linear

Multiple linear

Nonlinear

Joinpoint

Poisson

Multiple probit regression

Polynomial

**eTable 1: All data collection points *continued***

Gamma

Negative exponential

Spline curves

Least squares

Cox

Multilevel Regression (adjustment for clustering)

Generalized estimating equations

Bayesian hierarchical model

Generalized linear mixed models

Multilevel regression

CUSUM

Risk adjustment

**eTable 2: Full bibliography (not included in original bibliography)**

1. Abu Hilal M, Pearce NW. Laparoscopic left lateral liver sectionectomy: a safe, efficient, reproducible technique. Dig Surg. 2008;25(4):305-308.

2. Abu-Hilal M, Vanden Bossche M, Bailey IS, et al. A two-consultant approach is a safe and efficient strategy to adopt during the learning curve for laparoscopic Roux-en-Y gastric bypass: our results in the first 100 procedures. Obes Surg. 2007;17(6):742-746.

3. Adikibi BT, MacKinlay GA, Munro FD, Clark C. Is conversion a complication of laparoscopic surgery. J Laparoendosc Adv Surg Tech A. 2009;19 Suppl 1:S67-70.

4. Aeberhard P, Klaiber C, Meyenberg A, Osterwalder A, Tschudi J. Prospective audit of laparoscopic totally extraperitoneal inguinal hernia repair: a multicenter study of the Swiss Association for Laparoscopic and Thoracoscopic Surgery (SALTC). Surg Endosc. 1999;13(11):1115-1120.

5. Agachan F, Joo JS, Sher M, Weiss EG, Nogueras JJ, Wexner SD. Laparoscopic colorectal surgery. Do we get faster? Surg Endosc. 1997;11(4):331-335.

6. Agachan F, Joo JS, Weiss EG, Wexner SD. Intraoperative laparoscopic complications. Are we getting better? Dis Colon Rectum. 1996;39(10 Suppl):S14-19.

7. Aggarwal R, Boza C, Hance J, Leong J, Lacy A, Darzi A. Skills acquisition for laparoscopic gastric bypass in the training laboratory: an innovative approach. Obes Surg. 2007;17(1):19-27.

8. Aggarwal R, Crochet P, Dias A, Misra A, Ziprin P, Darzi A. Development of a virtual reality training curriculum for laparoscopic cholecystectomy. Br J Surg. 2009;96(9):1086-1093.

9. Aggarwal R, Tully A, Grantcharov T, et al. Virtual reality simulation training can improve technical skills during laparoscopic salpingectomy for ectopic pregnancy. BJOG. 2006;113(12):1382-1387.

10. Aggarwal R, Ward J, Balasundaram I, Sains P, Athanasiou T, Darzi A. Proving the effectiveness of virtual reality simulation for training in laparoscopic surgery. Ann Surg. 2007;246(5):771-779.

11. Agha A, Furst A, Iesalnieks I, et al. Conversion rate in 300 laparoscopic rectal resections and its influence on morbidity and oncological outcome. Int J Colorectal Dis. 2008;23(4):409-417.

12. Agha A, Moser C, Iesalnieks I, Piso P, Schlitt HJ. Combination of hand-assisted and laparoscopic proctocolectomy (HALP): Technical aspects, learning curve and early postoperative results. Surg Endosc. 2008;22(6):1547-1552.

13. Ahlberg G, Enochsson L, Gallagher AG, et al. Proficiency-based virtual reality training significantly reduces the error rate for residents during their first 10 laparoscopic cholecystectomies. Am J Surg. 2007;193(6):797-804.

14. Ahlberg G, Kruuna I, Leijonmarck CE, et al. Is the learning curve for laparoscopic fundoplication determined by the teacher or the pupil? Am J Surg. 2005;189(2):184-189.

15. Ai X, Wang BJ, Wu Z, et al. New porcine model for training for laparoscopic ureteral reimplantation with horn of uterus to mimic enlarged ureter. J Endourol. 2010;24(1):103-107.

16. Akiyoshi T, Kuroyanagi H, Ueno M, et al. Learning curve for standardized laparoscopic surgery for colorectal cancer under supervision: a single-center experience. Surg Endosc. 2011;25(5):1409-1414.

17. Akl MN, Long JB, Giles DL, et al. Robotic-assisted sacrocolpopexy: technique and learning curve. Surg Endosc. 2009;23(10):2390-2394.

18. Akladios CY, Dautun D, Saussine C, Baldauf JJ, Mathelin C, Wattiez A. Laparoscopic sacrocolpopexy for female genital organ prolapse: establishment of a learning curve. Eur J Obstet Gynecol R B. 2010;149(2):218-221.

19. Akmal Y, Baek JH, McKenzie S, Garcia-Aguilar J, Pigazzi A. Robot-assisted total mesorectal excision: is there a learning curve? Surg Endosc. 2012;26(9):2471-2476.

20. Akmal Y, Bailey C, Baek J-H, Metchikian M, Pigazzi A. Oncological outcomes of laparoscopic colon resection for cancer after implementation of a full-time preceptorship. Surg Endosc. 2011;25(9):2967-2971.

21. Ali A, Moser MA. Recent experience with laparoscopic appendectomy in a Canadian teaching centre. Can J Surg. 2008;51(1):51-55.

22. Ali MR, Bhaskerrao B, Wolfe BM. Robot-assisted laparoscopic Roux-en-Y gastric bypass. Surg Endosc. 2005;19(4):468-472.

23. Ali MR, Rasmussen JJ. Switching robotic surgical systems does not impact surgical performance. J Laparoendosc Adv S. 2008;18(1):32-36.

24. Altgassen C, Possover M, Krause N, Plaul K, Michels W, Schneider A. Establishing a new technique of laparoscopic pelvic and para-aortic lymphadenectomy. Obstet Gynecol. 2000;95(3):348-352.

25. Andrew CG, Hanna W, Look D, McLean APM, Christou NV. Early results after laparoscopic Roux-en-Y gastric bypass: Effect of the learning curve. Can J Surg. 2006;49(6):417-421.

26. Arora S, Aggarwal R, Sirimanna P, et al. Mental practice enhances surgical technical skills: A randomized controlled study. Ann Surg. 2011;253(2):265-270.

27. Avital S, Hermon H, Greenberg R, Karin E, Skornick Y. Learning curve in laparoscopic colorectal surgery: our first 100 patients. Isr Med Assoc J. 2006;8(10):683-686.

28. Balasundaram I, Aggarwal R, Darzi A. Short-phase training on a virtual reality simulator improves technical performance in tele-robotic surgery. Int J Med Robot. 2008;4(2):139-145.

29. Balik E, Asoglu O, Saglam S, et al. Effects of surgical laparoscopic experience on the short-term postoperative outcome of rectal cancer: results of a high volume single center institution. Surg Laparosc Endosc Percutan Tech. 2010;20(2):93-99.

30. Ballantyne GH, Ewing D, Capella RF, et al. The learning curve measured by operating times for laparoscopic and open gastric bypass: roles of surgeon's experience, institutional experience, body mass index and fellowship training. Obes Surg. 2005;15(2):172-182.

31. Ballesta-Lopez C, Poves I, Cabrera M, Almeida JA, Macias G. Learning curve for laparoscopic Roux-en-Y gastric bypass with totally hand-sewn anastomosis - Analysis of first 600 consecutive patients. Surg Endosc. 2005;19(4):519-524.

32. Bamgbade OA, Adeogun BO, Abbas K. Fast-track laparoscopic gastric bypass surgery: Outcomes and lessons from a bariatric surgery service in the united kingdom. Obes Surg. 2012;22(3):398-402.

33. Bartlett A, Parry B. Cusum analysis of trends in operative selection and conversion rates for laparoscopic cholecystectomy. ANZ J Surg. 2001;71(8):453-456.

34. Baumert H, Fromont G, Adorno Rosa J, Cahill D, Cathelineau X, Vallancien G. Impact of learning curve in laparoscopic radical prostatectomy on margin status: prospective study of first 100 procedures performed by one surgeon. J Endourol. 2004;18(2):173-176.

35. Bege T, Lelong B, Esterni B, et al. The learning curve for the laparoscopic approach to conservative mesorectal excision for rectal cancer: lessons drawn from a single institution's experience. Ann Surg. 2010;251(2):249-253.

36. Begos DG, Arsenault J, Ballantyne GH. Laparoscopic colon and rectal surgery at a VA hospital - Analysis of the first 50 cases. Surg Endosc-Ultra. 1996;10(11):1050-1056.

37. Bell M, Torgerson J, Kreaden U. The First 100 da Vinci Hysterectomies: An Analysis of the Learning Curve for a Single Surgeon. South Dakota Medicine. 2009;62(3):91, 93-95.

38. Bencini L, Sanchez LJ. Learning curve for laparoscopic ventral hernia repair. Am J Surg. 2004;187(3):378-382.

39. Bergman S, Feldman LS, Anidjar M, et al. "First, do no harm": monitoring outcomes during the transition from open to laparoscopic live donor nephrectomy in a Canadian centre. Can J Surg. 2008;51(2):103-110.

40. Bermudez JRT, Buess G, Waseda M, et al. Laparoscopic intracorporal colorectal sutured anastomosis using the Radius Surgical System in a phantom model. Surg Endosc. 2009;23(7):1624-1632.

41. Bhayani N, Gupta A, Kurian A, et al. Does fellow participation in laparoscopic Roux-en-Y gastric bypass affect perioperative outcomes? Surg Endosc. 2012;26(12):1-7.

42. Bhayani SB. Laparoscopic partial nephrectomy: fifty cases. J Endourol. 2008;22(2):313-316.

43. Bickel A, Rappaport A, Hazani E, Eitan A. Laparoscopic cholecystectomy for acute cholecystitis performed by residents in surgery: a risk factor for conversion to open laparotomy? J Laparoendosc Adv Surg Tech A. 1998;8(3):137-141.

44. Bingener-Casey J, Richards ML, Strodel WE, Schwesinger WH, Sirinek KR. Reasons for conversion from laparoscopic to open cholecystectomy: a 10-year review. J Gastrointest Surg. 2002;6(6):800-805.

45. Bittner R, Schmedt CG, Schwarz J, Kraft K, Leibl BJ. Laparoscopic transperitoneal procedure for routine repair of groin hernia. Br J Surg. 2002;89(8):1062-1066.

46. Blana A, Straub M, Wild PJ, et al. Approach to endoscopic extraperitoneal radical prostatectomy (EERPE): the impact of previous laparoscopic experience on the learning curve. BMC Urol. 2007;7:11.

47. Bodner J, Schmid T, Wykypiel H, Bodner E. First experiences with robotic-assisted laparoscopic cholecystectomies. Eur Surg. 2002;34(3):166-169.

48. Bokhari MB, Patel CB, Ramos-Valadez DI, Ragupathi M, Haas EM. Learning curve for robotic-assisted laparoscopic colorectal surgery. Surg Endosc. 2011;25(3):855-860.

49. Boone B, Wagner P, Ganchuk E, et al. Single-incision laparoscopic right colectomy in an unselected patient population. Surg Endosc. 2012;26(6):1595-1601.

50. Botden SM, de Hingh IH, Jakimowicz JJ. Suturing training in Augmented Reality: gaining proficiency in suturing skills faster. Surg Endosc. 2009;23(9):2131-2137.

51. Bouchard A, Martel G, Sabri E, et al. Does experience with laparoscopic colorectal surgery influence intraoperative outcomes? Surg Endosc. 2009;23(4):862-868.

52. Boyle E, Al-Akash M, Gallagher AG, Traynor O, Hill AD, Neary PC. Optimising surgical training: use of feedback to reduce errors during a simulated surgical procedure. Postgrad Med J. 2011;87(1030):524-528.

53. Boyle E, Kennedy AM, Traynor O, Hill ADK. Training surgical skills using nonsurgical tasks-can nintendo Wii improve surgical performance? J Surg Educ. 2011;68(2):148-154.

54. Boylu U, Oommen M, Thomas R, Lee BR. Transumbilical single-port laparoscopic partial nephrectomy in a pig model. BJU Int. 2010;105(5):686-690.

55. Braga LH, Pippi-Salle J, Lorenzo AJ, Bagli D, Khoury AE, Farhat WA. Pediatric laparoscopic pyeloplasty in a referral center: lessons learned. J Endourol. 2007;21(7):738-742.

56. Braga M, Ridolfi C, Balzano G, Castoldi R, Pecorelli N, Di Carlo V. Learning curve for laparoscopic distal pancreatectomy in a high-volume hospital. Updates Surg. 2012;64(3):179-183.

57. Breaux JA, Kennedy CI, Richardson WS. Advanced laparoscopic skills decrease the learning curve for laparoscopic Roux-en-Y gastric bypass. Surg Endosc. 2007;21(6):985-988.

58. Bruch HP, Schiedeck TH, Schwandner O. Laparoscopic colorectal surgery: A five-year experience. Dig Surg. 1999;16(1):45-54.

59. Brunaud L, Ayav A, Zarnegar R, et al. Prospective evaluation of 100 robotic-assisted unilateral adrenalectomies. Surgery. 2008;144(6):995-1001.

60. Brunaud L, Bresler L, Ayav A, et al. Robotic-assisted adrenalectomy: what advantages compared to lateral transperitoneal laparoscopic adrenalectomy? Am J Surg. 2008;195(4):433-438.

61. Brunner WC, Korndorffer JR, Jr., Sierra R, et al. Laparoscopic virtual reality training: are 30 repetitions enough? J Surg Res. 2004;122(2):150-156.

62. Bryant R, Craig E, Oakley N. Laparoscopic pyeloplasty: The retroperitoneal approach is suitable for establishing a de novo practice. J Postgrad Med. 2008;54(4):263-267.

63. Buchs NC, Pugin F, Bucher P, et al. Learning curve for robot-assisted Roux-en-Y gastric bypass. Surg Endosc. 2012;26(4):1116-1121.

64. Cadeddu JA, Wolfe JS, Jr., Nakada S, et al. Complications of laparoscopic procedures after concentrated training in urological laparoscopy. J Urol. 2001;166(6):2109-2111.

65. Cagir B, Rangraj M, Maffuci L, Herz BL. The learning curve for laparoscopic cholecystectomy. J Laparoendosc Surg. 1994;4(6):419-427.

66. Cai XJ, Wang YF, Liang YL, Yu H, Liang X. Laparoscopic left hemihepatectomy: a safety and feasibility study of 19 cases. Surg Endosc. 2009;23(11):2556-2562.

67. Calvert RC, Morsy MM, Zelhof B, Rhodes M, Burgess NA. Comparison of laparoscopic and open pyeloplasty in 100 patients with pelvi-ureteric junction obstruction. Surg Endosc. 2008;22(2):411-414.

68. Calvete J, Sabater L, Camps B, et al. Bile duct injury during laparoscopic cholecystectomy: myth or reality of the learning curve? Surg Endosc. 2000;14(7):608-611.

69. Cannon RM, Eng M, Marvin MR, Buell JF. Laparoscopic living kidney donation at a single center: An examination of donor outcomes with increasing experience. Am Surg. 2011;77(7):911-915.

70. Carmona F, Martinez-Zamora A, Gonzalez X, Gines A, Bunesch L, Balasch J. Does the learning curve of conservative laparoscopic surgery in women with rectovaginal endometriosis impair the recurrence rate? Fertil Steril. 2009;92(3):868-875.

71. Cartlidge CW, Stewart GD, de Beaux AC, Paterson-Brown S. The evolution of laparoscopic antireflux surgery and its influence on postoperative stay. Scott Med J. 2011;56(2):64-68.

72. Cavallari G, Tsivian M, Neri F, Bertelli R, Faenza A, Nardo B. Hand-assisted laparoscopic donor nephrectomy: analysis of the learning curve in a training model in vivo. Transplant Proc. 2009;41(4):1125-1127.

73. Champault GG, Barrat C, Rozon RC, Rizk N, Catheline JM. The effect of the learning curve on the outcome of laparoscopic treatment for gastroesophageal reflux. Surg Laparosc Endosc Percutan Tech. 1999;9(6):375-381.

74. Chan SW, Hensman C, Waxman BP, et al. Technical developments and a team approach leads to an improved outcome: lessons learnt implementing laparoscopic splenectomy. ANZ J Surg. 2002;72(7):523-527.

75. Chandra V, Nehra D, Parent R, et al. A comparison of laparoscopic and robotic assisted suturing performance by experts and novices. Surgery. 2010;147(6):830-839.

76. Chaudhry A, Sutton C, Wood J, Stone R, McCloy R. Learning rate for laparoscopic surgical skills on MIST VR, a virtual reality simulator: quality of human-computer interface. Ann R Coll Surg Engl. 1999;81(4):281-286.

77. Chen W, Chang CC, Chiu HC, Shabbir A, Perng DS, Huang CK. Use of individual surgeon versus surgical team approach: Surgical outcomes of laparoscopic Roux-en-Y gastric bypass in an Asian Medical Center. Surg Obes Relat Dis. 2012;8(2):214-219.

78. Chen W, Sailhamer E, Berger DL, Rattner DW. Operative time is a poor surrogate for the learning curve in laparoscopic colorectal surgery. Surg Endosc. 2007;21(2):238-243.

79. Cherian PT, Goussous G, Ashori F, Sigurdsson A. Band erosion after laparoscopic gastric banding: a retrospective analysis of 865 patients over 5 years. Surg Endosc. 2010;24(8):2031-2038.

80. Chin EH, Hazzan D, Edye M, et al. The first decade of a laparoscopic donor nephrectomy program: effect of surgeon and institution experience with 512 cases from 1996 to 2006. J Am Coll Surg. 2009;209(1):106-113.

81. Chiu CC, Wei PL, Wang W, et al. Role of appendectomy in laparoscopic training. J Laparoendosc Adv S. 2006;16(2):113-118.

82. Choi DH, Jeong WK, Lim SW, et al. Learning curves for laparoscopic sigmoidectomy used to manage curable sigmoid colon cancer: single-institute, three-surgeon experience. Surg Endosc. 2009;23(3):622-628.

83. Choi G, Choi S, Kim S, et al. Robotic liver resection: technique and results of 30 consecutive procedures. Surg Endosc. 2012;26(8):2247-2258.

84. Choi SH, Kang CM, Hwang HK, Lee WJ. Reappraisal of anterior approach to laparoscopic splenectomy: Technical feasibility and its clinical application. Surg Laparo Endo Per. 2011;21(5):353-357.

85. Choi YY, Kim Z, Hur KY. Learning curve for laparoscopic totally extraperitoneal repair of inguinal hernia. Can J Surg. 2012;55(1):33-36.

86. Chong GO, Park NY, Hong DG, Cho YL, Park IS, Lee YS. Learning curve of laparoscopic radical hysterectomy with pelvic and/or para-aortic lymphadenectomy in the early and locally advanced cervical cancer: comparison of the first 50 and second 50 cases. Int J Gynecol Cancer. 2009;19(8):1459-1464.

87. Cima RR, Pendlimari R, Holubar SD, et al. Utility and short-term outcomes of hand-assisted laparoscopic colorectal surgery: A single-institution experience in 1103 patients. Dis Colon Rectum. 2011;54(9):1076-1081.

88. Claerhout F, Roovers JP, Lewi P, Verguts J, De Ridder D, Deprest J. Implementation of laparoscopic sacrocolpopexy-a single centre's experience. Int Urogynecol J Pel. 2009;20(9):1119-1125.

89. Contini S, Scarpignato C. Does the learning phase influence the late outcome of patients with gastroesophageal reflux disease after laparoscopic fundoplication? Surg Endosc. 2004;18(2):266-271.

90. Corona R, Verguts J, Binda MM, Molinas CR, Schonman R, Koninckx PR. The impact of the learning curve on adhesion formation in a laparoscopic mouse model. Fertil Steril. 2011;96(1):193-197.

91. Crochet P, Aggarwal R, Dubb SS, et al. Deliberate Practice on a Virtual Reality Laparoscopic Simulator Enhances the Quality of Surgical Technical Skills. Ann Surg. 2011;253(6):1216-1222.

92. Cruz JA, Passerotti CC, Frati RM, et al. Surgical performance during laparoscopic radical nephrectomy is improved with training in a porcine model. J Endourol. 2012;26(3):278-282.

93. Cugura JF, Kirac I, Kulis T, Sremac M, Ledinsky M, Beslin MB. Comparison of single incision laparoscopic totally extraperitoneal and laparoscopic totally extraperitoneal inguinal hernia repair: Initial experience. J Endourol. 2012;26(1):63-66.

94. Cusick RA, Waldhausen JH. The learning curve associated with pediatric laparoscopic splenectomy. Am J Surg. 2001;181(5):393-397.

95. D'Annibale A, Pende V, Pernazza G, et al. Full robotic gastrectomy with extended (D2) lymphadenectomy for gastric cancer: surgical technique and preliminary results. J Surg Res. 2011;166(2):e113-120.

96. Dalla Valle R, Mazzoni MP, Capocasale E, et al. Laparoscopic donor nephrectomy: short learning curve. Transplant Proc. 2006;38(4):1001-1002.

97. Dalton SJ, Ghosh AJ, Zafar N, Riyad K, Dixon AR. Competency in laparoscopic colorectal surgery is achievable with appropriate training but takes time: a comparison of 300 elective resections with anastomosis. Colorectal Dis. 2010;12(11):1099-1104.

98. Daskalakis M, Berdan Y, Theodoridou S, Weigand G, Weiner RA. Impact of surgeon experience and buttress material on postoperative complications after laparoscopic sleeve gastrectomy. Surg Endosc. 2011;25(1):88-97.

99. Davis JW, Kamat A, Munsell M, Pettaway C, Pisters L, Matin S. Initial experience of teaching robot-assisted radical prostatectomy to surgeons-in-training: can training be evaluated and standardized? Bju International. 2010;105(8):1148-1154.

100. Debes AJ, Aggarwal R, Balasundaram I, Jacobsen MB. Construction of an evidence-based, graduated training curriculum for D-box, a webcam-based laparoscopic basic skills trainer box. Am J Surg. 2012;203(6):768-775.

101. Degiuli M, Mineccia M, Bertone A, et al. Outcome of laparoscopic colorectal resection. Surg Endosc. 2004;18(3):427-432.

102. Deka V, Kahol K, Smith M, Ferrara JJ. Honing a surgeon's decision making skills in the presence of mechanical tasks. Am J Surg. 2011;202(4):492-499.

103. Delgado S, Ibarzabal A, Adelsdorfer C, et al. Transumbilical single-port sleeve gastrectomy: initial experience and comparative study. Surg Endosc. 2012;26(5):1247-1253.

104. Deschamps C, Allen MS, Trastek VF, Johnson JO, Pairolero PC. Early experience and learning curve associated with laparoscopic Nissen fundoplication. J Thorac Cardiovasc Surg. 1998;115(2):281-284.

105. Dincler S, Koller MT, Steurer J, Bachmann LM, Christen D, Buchmann P. Multidimensional analysis of learning curves in laparoscopic sigmoid resection: eight-year results. Dis Colon Rectum. 2003;46(10):1371-1378.

106. Dunphy BC, Shepherd S, Cooke ID. Impact of the learning curve on term delivery rates following laparoscopic salpingostomy for infertility associated with distal tubal occlusive disease. Hum Reprod. 1997;12(6):1181-1183.

107. Eden CG, Neill MG, Louie-Johnsun MW. The first 1000 cases of laparoscopic radical prostatectomy in the UK: evidence of multiple 'learning curves'. BJU Int. 2009;103(9):1224-1230.

108. Edwards CC, Bailey RW. Laparoscopic hernia repair: the learning curve. Surg Laparosc Endosc Percutan Tech. 2000;10(3):149-153.

109. El-Ghoneimi A, Abou-Hashim H, Bonnard A, et al. Retroperitoneal laparoscopic nephrectomy in children: at last the gold standard? J Pediatr Urol. 2006;2(4):357-363.

110. Ellison JS, Montgomery JS, Wolf JS, Jr., Hafez KS, Miller DC, Weizer AZ. A matched comparison of perioperative outcomes of a single laparoscopic surgeon versus a multisurgeon robot-assisted cohort for partial nephrectomy. J Urol. 2012;188(1):45-50.

111. Eltabbakh GH. Effect of surgeon's experience on the surgical outcome of laparoscopic surgery for women with endometrial cancer. Gynecol Oncol. 2000;78(1):58-61.

112. Eom BW, Yoon HM, Ryu KW, et al. Comparison of surgical performance and short-term clinical outcomes between laparoscopic and robotic surgery in distal gastric cancer. Eur J Surg Onc. 2012;38(1):57-63.

113. Escobar PF, Starks DC, Fader AN, Barber M, Rojas-Espalliat L. Single-port risk-reducing salpingo-oophorectomy with and without hysterectomy: surgical outcomes and learning curve analysis. Gynecol Oncol. 2010;119(1):43-47.

114. Eto M, Harano M, Koga H, Tanaka M, Naito S. Clinical outcomes and learning curve of a laparoscopic adrenalectomy in 103 consecutive cases at a single institute. Int J Urol. 2006;13(6):671-676.

115. Fabrizio MD, Tuerk I, Schellhammer PF. Laparoscopic radical prostatectomy: decreasing the learning curve using a mentor initiated approach. J Urol. 2003;169(6):2063-2065.

116. Fagotti A, Fanfani F, Marocco F, et al. Laparoendoscopic single-site surgery for the treatment of benign adnexal diseases: a pilot study. Surg Endosc. 2011;25(4):1215-1221.

117. Fagotti A, Vizzielli G, Costantini B, et al. Learning curve and pitfalls of a laparoscopic score to describe peritoneal carcinosis in advanced ovarian cancer. Acta Obstet Gyn Scan. 2011;90(10):1126-1131.

118. Fan T, Xian P, Yang L, Liu Y, Wei Q, Li H. Experience and learning curve of retroperitoneal laparoscopic ureterolithotomy for upper ureteral calculi. J Endourol. 2009;23(11):1867-1870.

119. Fan Y, Wu SD, Yu H, et al. Lessons Learnt after 12 Years Experience in Laparoscopic Cholecystectomy at a Single Center. Hepato-Gastroenterol. 2010;57(98):202-206.

120. Feldman LS, Cao J, Andalib A, Fraser S, Fried GM. A method to characterize the learning curve for performance of a fundamental laparoscopic simulator task: defining "learning plateau" and "learning rate". Surgery. 2009;146(2):381-386.

121. Feliu-Pala X, Martin-Gomez M, Morales-Conde S, Fernandez-Sallent E. The impact of the surgeon's experience on the results of laparoscopic hernia repair. Surg Endosc. 2001;15(12):1467-1470.

122. Ferguson GG, Ames CD, Weld KJ, Yan Y, Venkatesh R, Landman J. Prospective evaluation of learning curve for laparoscopic radical prostatectomy: identification of factors improving operative times. Urology. 2005;66(4):840-844.

123. Fichera A, Prachand V, Kives S, Levine R, Hasson H. Physical reality simulation for training of laparoscopists in the 21st century. A multispecialty, multi-institutional study. JSLS. 2005;9(2):125-129.

124. Fisher KS, Matteson KM, Hammer MD. Laparoscopic Cholecystectomu - The Springfield Experience. Surg Laparosc Endosc. 1993;3(3):199-203.

125. Fiszer P, Toutounchi S, Pogorzelski R, Krajewska E, Ciesla W, Skorski M. Laparoscopic adrenalectomy - assessing the learning curve. Pol Przegl Chir. 2012;84(6):293-297.

126. Fleisch MC, Newton J, Steinmetz I, Whitehair J, Hallum A, Hatch KD. Learning and teaching advanced laparoscopic procedures: do alternating trainees impair a laparoscopic surgeon's learning curve? J Minim Invasive Gynecol. 2007;14(3):293-299.

127. Forestieri P, Pilone V, Tramontano S, Formato A, Monda A, Esposito E. Laparoscopic gastric band migration: role of environmental factors in the experience of a single team in three operating rooms. Obes Surg. 2010;20(10):1333-1339.

128. Fowler DL, White SA, Anderson CA. Laparoscopic colon resection: 60 cases. Surg Laparosc Endosc. 1995;5(6):468-471.

129. Fransen SA, Mertens LS, Botden SM, Stassen LP, Bouvy ND. Performance curve of basic skills in single-incision laparoscopy versus conventional laparoscopy: is it really more difficult for the novice? Surg Endosc. 2012;26(5):1231-1237.

130. Fraser SA, Bergman S, Garzon J. Laparoscopic splenectomy: Learning curve comparison between benign and malignant disease. Surg Innov. 2012;19(1):27-32.

131. Fraser SA, Feldman LS, Stanbridge D, Fried GM. Characterizing the learning curve for a basic laparoscopic drill. Surg Endosc. 2005;19(12):1572-1578.

132. Frede T, Erdogru T, Zukosky D, Gulkesen H, Teber D, Rassweiler J. Comparison of training modalities for performing laparoscopic radical prostatectomy: experience with 1,000 patients. J Urol. 2005;174(2):673-678.

133. Frede T, Hammady A, Klein J, et al. The radius surgical system - a new device for complex minimally invasive procedures in urology? Eur Urol. 2007;51(4):1015-1022.

134. Frede T, Klein J, Teber D, Rassweiler J. Laparoscopic radical prostatectomy - impact of training and supervision. Minim Invasive Ther Allied Technol. 2005;14(2):104-108.

135. Friedman RL, Fallas MJ, Carroll BJ, Hiatt JR, Phillips EH. Laparoscopic splenectomy for ITP. The gold standard. Surg Endosc. 1996;10(10):991-995.

136. Fu B, Zhang X, Lang B, et al. New model for training in laparoscopic dismembered ureteropyeloplasty. J Endourol. 2007;21(11):1381-1385.

137. Fukunaga Y, Higashino M, Tanimura S, Takemura M, Osugi H. Laparoscopic colorectal surgery for neoplasm. A large series by a single surgeon. Surg Endosc. 2008;22(6):1452-1458.

138. Gallagher AG, Satava R. Virtual reality as a metric for the assessment of laparoscopic psychomotor skills. Surg Endosc. 2002;16:1746–1752.

139. Galvani CA, Gallo AS, Gorodner MV. Single-incision and dual-incision laparoscopic adjustable gastric band: evaluation of initial experience. Surg Obes Relat Dis. 2010;8(2):194-200.

140. Galvani CA, Gallo AS, Gorodner MV. Single-incision and dual-incision laparoscopic adjustable gastric band: Evaluation of initial experience. Surg Obes Relat Dis. 2012;8(2):194-200.

141. Garcia FCB, Misra MC, Bhattacharjee HK, Buess G. Experimental trial of transvaginal cholecystectomy: an ex vivo analysis of the learning process for a novel single-port technique. Surg Endosc. 2009;23(10):2242-2249.

142. Garrett AJ, Nascimento MC, Nicklin JL, Perrin LC, Obermair A. Total laparoscopic hysterectomy: the Brisbane learning curve. Aust N Z J Obstet Gynaecol. 2007;47(1):65-69.

143. Gaston KE, Moore DT, Pruthi RS. Hand-assisted laparoscopic nephrectomy: prospective evaluation of the learning curve. J Urol. 2004;171(1):63-67.

144. Gawart M, Dupitron S, Lutfi R. Laparoendoscopic single-site gastric bands versus standard multiport gastric bands: A comparison of technical learning curve measured by surgical time. Am J Surg. 2012;203(3):327-330.

145. Germain A, Thibault F, Galifet M, et al. Long-term outcomes after totally robotic sacrocolpopexy for treatment of pelvic organ prolapse. Surg Endosc. 2012;27(2):1-5.

146. Ghavamian R, Schenk G, Hoenig DM, Williot P, Melman A. Overcoming the steep learning curve of laparoscopic radical prostatectomy: single-surgeon experience. J Endourol. 2004;18(6):567-571.

147. Giep BN, Giep HN, Hubert HB. Comparison of minimally invasive surgical approaches for hysterectomy at a community hospital: robotic-assisted laparoscopic hysterectomy, laparoscopic-assisted vaginal hysterectomy and laparoscopic supracervical hysterectomy. J Robot Surg. 2010;4(3):167-175.

148. Gilchrist BF, Vlessis AA, Kay GA, Swartz K, Dennis D. Open versus laparoscopic cholecystectomy: an initial analysis. J Laparoendosc Surg. 1991;1(4):193-196.

149. Gill IS, Meraney AM, Schweizer DK, et al. Laparoscopic radical nephrectomy in 100 patients: a single center experience from the United States. Cancer. 2001;92(7):1843-1855.

150. Gill J, Booth MI, Stratford J, Dehn TC. The extended learning curve for laparoscopic fundoplication: a cohort analysis of 400 consecutive cases. J Gastrointest Surg. 2007;11(4):487-492.

151. Gockel I, Kneist W, Heintz A, Beyer J, Junginger T. Endoscopic adrenalectomy: an analysis of the transperitoneal and retroperitoneal approaches and results of a prospective follow-up study. Surg Endosc. 2005;19(4):569-573.

152. Goitein D, Mintz Y, Gross D, Reissman P. Laparoscopic adrenalectomy: ascending the learning curve. Surg Endosc. 2004;18(5):771-773.

153. Gonzalez R, Haines K, Gallagher SF, Murr MM. Does experience preclude leaks in laparoscopic gastric bypass? Surg Endosc. 2006;20(11):1687-1692.

154. Gor M, McCloy R, Stone R, Smith A. Virtual reality laparoscopic simulator for assessment in gynaecology. BJOG. 2003;110(2):181-187.

155. Gould JC, Garren MJ, Starling JR. Lessons learned from the first 100 cases in a new minimally invasive bariatric surgery program. Obes Surg. 2004;14(5):618-625.

156. Grantcharov TP, Bardram L, Funch-Jensen P, Rosenberg J. Learning curves and impact of previous operative experience on performance on a virtual reality simulator to test laparoscopic surgical skills. Am J Surg. 2003;185(2):146-149.

157. Grantcharov TP, Funch-Jensen P. Can everyone achieve proficiency with the laparoscopic technique? Learning curve patterns in technical skills acquisition. Am J Surg. 2009;197(4):447-449.

158. Grotenhuis BA, Wijnhoven BPL, Jamieson GG, Devitt PG, Bessell JR, Watson DI. Defining a learning curve for laparoscopic cardiomyotomy. World J Surg. 2008;32(8):1689-1694.

159. Guazzoni G, Montorsi F, Bergamaschi F, et al. Open surgical revision of laparoscopic pelvic lymphadenectomy for staging of prostate cancer: the impact of laparoscopic learning curve. J Urol. 1994;151(4):930-933.

160. Guerrieri M, Campagnacci R, De Sanctis A, Baldarelli M, Coletta M, Perretta S. The learning curve in laparoscopic adrenalectomy. J Endocrinol Invest. 2008;31(6):531-536.

161. Guller U, Rosella L, Karanicolas PJ, Adamina M, Hahnloser D. Population-based trend analysis of 2813 patients undergoing laparoscopic sigmoid resection. Brit J Surg. 2010;97(1):79-85.

162. Guo DY, Eteuati J, Nguyen MH, Lloyd D, Ragg JL. Laparoscopic assisted colectomy: experience from a rural centre. ANZ J Surg. 2007;77(4):283-286.

163. Guru KA, Perlmutter AE, Butt ZM, et al. The Learning Curve for Robot-Assisted Radical Cystectomy. JSLS. 2009;13(4):509-514.

164. Gyori GP, Leidl S, Wuttke M, et al. Implementation of single incision laparoscopic appendectomy (SIL-A) as standard procedure for appendectomy in a rural hospital setting. Eur Surg. 2011;43(1):39-44.

165. Haidenberg J, Kendrick ML, Meile T, Farley DR. Totally extraperitoneal (TEP) approach for inguinal hernia: the favorable learning curve for trainees. Curr Surg. 2003;60(1):65-68.

166. Hamad MA, Mentges B, Buess G. Laparoscopic sutured anastomosis of the bowel - Technique and learning curve. Surg Endosc. 2003;17(11):1840-1844.

167. Han JH, Lee HJ, Suh YS, Han DS, Kong SH, Yang HK. Laparoscopy-assisted distal gastrectomy compared to open distal gastrectomy in early gastric cancer. Dig Surg. 2011;28(4):245-251.

168. Hanly EJ, Marohn MR, Bachman SL, et al. Multiservice laparoscopic surgical training using the daVinci surgical system. Am J Surg. 2004;187(2):309-315.

169. Haseebuddin M, Benway BM, Cabello JM, Bhayani SB. Robot-assisted partial nephrectomy: evaluation of learning curve for an experienced renal surgeon. J Endourol. 2010;24(1):57-61.

170. Hawasli A, Lloyd LR. Laparoscopic cholecystectomy. The learning curve: report of 50 patients. Am Surg. 1991;57(8):542-544.

171. Hayakawa K, Aoyagi T, Ohashi M, Hata M. Comparison of Gas-less laparoscopy-assisted surgery, hand-assisted laparoscopic surgery and pure laparoscopic surgery for radical nephrectomy. Int J Urol. 2004;11(3):142-147.

172. Hayn MH, Hussain A, Mansour AM, et al. The learning curve of robot-assisted radical cystectomy: Results from the international robotic cystectomy consortium. Eur Urol. 2010;58(2):197-202.

173. He D, Lin T, Wei G, et al. Laparoscopic orchiopexy for treating inguinal canalicular palpable undescended testis. J Endourol. 2008;22(8):1745-1749.

174. Heemskerk J, van Gemert WG, de Vries J, Greve J, Bouvy ND. Learning curves of robot-assisted laparoscopic surgery compared with conventional laparoscopic surgery: an experimental study evaluating skill acquisition of robot-assisted laparoscopic tasks compared with conventional laparoscopic tasks in inexperienced users. Surg Laparosc Endosc Percutan Tech. 2007;17(3):171-174.

175. Heinrichs WL, Lukoff B, Youngblood P, et al. Criterion-based training with surgical simulators: proficiency of experienced surgeons. JSLS. 2007;11(3):273-302.

176. Heintz A, Junginger T. Learning curve after 50 retroperitoneoscopic adrenalectomies. Minim Invasive Ther Allied Technol. 1998;7(3):273-274.

177. Hellawell GO, Moon DA. Laparoscopic radical prostatectomy: reducing the learning curve. Urology. 2008;72(6):1347-1350.

178. Hernandez JD, Bann SD, Munz Y, et al. Qualitative and quantitative analysis of the learning curve of a simulated surgical task on the da Vinci system. Surg Endosc. 2004;18(3):372-378.

179. Herndon CD, Herbst K, Smith C. The transition from open to laparoscopic pediatric pyeloplasty: A single-surgeon experience. J Pediatr Urol. 2012;Epub Jul 14 2012.

180. Herrero A, Philippe C, Guillon F, Millat B, Borie F. Does the surgeon’s experience influence the outcome of laparoscopic treatment of common bile duct stones? Surg Endosc. 2012;27(1):176-180.

181. Hiemstra E, Kolkman W, le Cessie S, Jansen FW. Are Minimally Invasive Procedures Harder to Acquire than Conventional Surgical Procedures? Gynecol Obstet Invest. 2010;71(4):268-273.

182. Hiemstra E, Kolkman W, Le Cessie S, Jansen FW. Are minimally invasive procedures harder to acquire than conventional surgical procedures? Gynecol Obstet Invest. 2011;71(4):268-273.

183. Hiemstra E, Kolkman W, Wolterbeek R, Trimbos B, Jansen FW. Value of an objective assessment tool in the operating room. Can J Surg. 2011;54(2):116-122.

184. Higashihara E, Baba S, Nakagawa K, et al. Learning curve and conversion to open surgery in cases of laparoscopic adrenalectomy and nephrectomy. J Urol. 1998;159(3):650-653.

185. Hisano M, Duarte RJ, Colombo JR, Jr., Srougi M. Is there a model to teach and practice retroperitoneoscopic nephrectomy? Minim Invasive Ther Allied Technol. 2012;22(1):33-38.

186. Hobbs MS, Mai Q, Knuiman MW, Fletcher DR, Ridout SC. Surgeon experience and trends in intraoperative complications in laparoscopic cholecystectomy. Brit J Surg. 2006;93(7):844-853.

187. Hogle NJ, Briggs WM, Fowler DL. Documenting a learning curve and test-retest reliability of two tasks on a virtual reality training simulator in laparoscopic surgery. J Surg Educ. 2007;64(6):424-430.

188. Hollenbeck BK, Roberts WW, Wolf Jr JS. Importance of perioperative processes of care for length of hospital stay after laparoscopic surgery. J Endourol. 2006;20(10):776-780.

189. Hollenbeck BK, Seifman BD, Wolf Jr JS. Clinical skills acquisition for hand-assisted laparoscopic donor nephrectomy. J Urol. 2004;171(1):35-39.

190. Holloway RW, Ahmad S, DeNardis SA, et al. Robotic-assisted laparoscopic hysterectomy and lymphadenectomy for endometrial cancer: Analysis of surgical performance. Gynecol Oncol. 2009;115(3):447-452.

191. Holub Z, Jabor A, Bartos P, Hendl J, Urbanek S. Laparoscopic surgery in women with endometrial cancer: the learning curve. Eur J Obstet Gynecol R B. 2003;107(2):195-200.

192. Horgan S, Galvani C, Gorodner MV, et al. Effect of robotic assistance on the "learning curve" for laparoscopic hand-assisted donor nephrectomy. Surg Endosc. 2007;21(9):1512-1517.

193. Hoznek A, Salomon L, Olsson LE, et al. Laparoscopic radical prostatectomy - The Creteil experience. Eur Urol. 2001;40(1):38-45.

194. Hruza M, Weiss HO, Pini G, et al. Complications in 2200 consecutive laparoscopic radical prostatectomies: Standardised evaluation and analysis of learning curves. Eur Urol. 2010;58(5):733-741.

195. Hsu GP, Morton JM, Jin L, Safadi BY, Satterwhite TS, Curet MJ. Laparoscopic Roux-en-Y gastric bypass: differences in outcome between attendings and assistants of different training backgrounds. Obes Surg. 2005;15(8):1104-1110.

196. Huang CK, Lee YC, Hung CM, Chen YS, Tai CM. Laparoscopic Roux-en-Y gastric bypass for morbidly obese Chinese patients: learning curve, advocacy and complications. Obes Surg. 2008;18(7):776-781.

197. Huang KH, Lan YT, Fang WL, et al. Initial experience of robotic gastrectomy and comparison with open and laparoscopic gastrectomy for gastric cancer. J Gastrointest Surg. 2012;16(7):1303-1310.

198. Hubens G, Balliu L, Ruppert M, Gypen B, Van Tu T, Vaneerdeweg W. Roux-en-Y gastric bypass procedure performed with the da Vinci robot system: is it worth it? Surg Endosc. 2008;22(7):1690-1696.

199. Hunt DR, Wills VL. Laparoscopic Heller myotomy for achalasia. Aust N Z J Surg. 2000;70(8):582-586.

200. Hunter JG, Sackier JM, Berci G. Training in laparoscopic cholecystectomy. Quantifying the learning curve. Surg Endosc. 1994;8(1):28-31.

201. Hur H, Xuan Y, Ahn CW, Cho YK, Han S-U. Trends and outcomes of minimally invasive surgery for gastric cancer: 750 consecutive cases in seven years at a single center. Am J Surg. 2013;205(1):45-51.

202. Huscher CGS, Lirici MM, Di Paola M, et al. Laparoscopic cholecystectomy by ultrasonic dissection without cystic duct and artery ligature. Surg Endosc. 2003;17(3):442-451.

203. Huttl TP, Hrdina C, Kramling HJ, Schildberg FW, Meyer G. Gallstone surgery in German university hospitals. Development, complications and changing strategies. Langenbecks Arch Surg. 2001;386(6):410-417.

204. Hwang H, Turner LJ, Blair NP. Examining the learning curve of laparoscopic fundoplications at an urban community hospital. Am J Surg. 2005;189(5):522-526.

205. Hwang MR, Seo GJ, Yoo SB, et al. Learning curve of assistants in laparoscopic colorectal surgery: overcoming mirror imaging. Surg Endosc. 2010;24(10):2575-2580.

206. Imhof M, Zacherl J, Rais A, Lipovac M, Jakesz R, Fuegger R. Teaching laparoscopic cholecystectomy: Do beginners adversely affect the outcome of the operation? Eur J Surg. 2002;168(8-9):470-474.

207. Ito M, Sugito M, Kobayashi A, Nishizawa Y, Tsunoda Y, Saito N. Influence of learning curve on short-term results after laparoscopic resection for rectal cancer. Surg Endosc. 2009;23(2):403-408.

208. Jaffer U, Cameron AE. Laparoscopic appendectomy: a junior trainee's learning curve. JSLS. 2008;12(3):288-291.

209. Janetschek G, Hobisch A, Holtl L, Bartsch G. Retroperitoneal lymphadenectomy for clinical stage I nonseminomatous testicular tumor: laparoscopy versus open surgery and impact of learning curve. J Urol. 1996;156(1):89-93.

210. Janetschek G, Hobisch A, Peschel R, Bartsch G. Laparoscopic retroperitoneal lymph node dissection. Urology. 2000;55(1):136-140.

211. Jayaraman S, Davies W, Schlachta CM. Getting started with robotics in general surgery with cholecystectomy: the Canadian experience. Can J Surg. 2009;52(5):374-378.

212. Jayaraman S, Quan D, Al-Ghamdi I, El-Deen F, Schlachta CM. Does robotic assistance improve efficiency in performing complex minimally invasive surgical procedures? Surg Endosc. 2010;24(3):584-588.

213. Jenkins JT, Modak P, Galloway DJ. Prospective study of laparoscopic adjustable gastric banding in the west of Scotland. Scott Med J. 2006;51(1):37-41.

214. Jeon SH, Han KS, Yoo KH, et al. How many cases are necessary to develop competence for laparoscopic radical nephrectomy? J Endourol. 2009;23(12):1965-1969.

215. Jha MS GN, Agrawal S, et al. . Single-centre experience of laparoscopic nephrectomy: Impact of learning curve on outcome. . Indian J Urol 2007;23:253–256. .

216. Jin SH, Kim DY, Kim H, et al. Multidimensional learning curve in laparoscopy-assisted gastrectomy for early gastric cancer. Surg Endosc. 2007;21(1):28-33.

217. Judkins TN, Oleynikov D, Stergiou N. Objective evaluation of expert and novice performance during robotic surgical training tasks. Surg Endosc. 2009;23(3):590-597.

218. Kakizoe S, Kakizoe Y, Guntani A, et al. Personal experience of laparoscopic cholecystectomy. Hepatogastroenterology. 2004;51(58):934-936.

219. Kald A, Anderberg B, Smedh K, Karlsson M. Transperitoneal or totally extraperitoneal approach in laparoscopic hernia repair: results of 491 consecutive herniorrhaphies. Surg Laparosc Endosc. 1997;7(2):86-89.

220. Kanaya S, Kawamura Y, Kawada H, et al. The delta-shaped anastomosis in laparoscopic distal gastrectomy: Analysis of the initial 100 consecutive procedures of intracorporeal gastroduodenostomy. Gastric Cancer. 2011;14(4):365-371.

221. Kane RL, Lurie N, Borbas C, et al. The outcomes of elective laparoscopic and open cholecystectomies. J Am Coll Surg. 1995;180(2):136-145.

222. Kang JC, Jao SW, Chung MH, Feng CC, Chang YJ. The learning curve for hand-assisted laparoscopic colectomy: a single surgeon's experience. Surg Endosc. 2007;21(2):234-237.

223. Kanno T, Shichiri Y, Oida T, Kanamaru H, Takao N, Shimizu Y. Complications and the learning curve for a laparoscopic nephrectomy at a single institution. Int J Urol. 2006;13(2):101-104.

224. Kawauchi A, Fujito A, Soh J, et al. Learning curve of hand-assisted retroperitoneoscopic nephrectomy in less-experienced laparoscopic surgeons. Int J Urol. 2005;12(1):1-6.

225. Kayano H, Okuda J, Tanaka K, Kondo K, Tanigawa N. Evaluation of the learning curve in laparoscopic low anterior resection for rectal cancer. Surg Endosc. 2011;25(9):2972-2979.

226. Keidar A, Shussman N, Elazary R, Rivkind AI, Mintz Y. Right-sided upper abdomen single-incision laparoscopic gastric banding. Obes Surg. 2010;20(6):757-760.

227. Kim J, Edwards E, Bowne W, et al. Medial-to-lateral laparoscopic colon resection: a view beyond the learning curve. Surg Endosc. 2007;21(9):1503-1507.

228. Kim MC, Jung GJ, Kim HH. Learning curve of laparoscopy-assisted distal gastrectomy with systemic lymphadenectomy for early gastric cancer. World J Gastroenterol. 2005;11(47):7508-7511.

229. Kim MG, Kim KC, Yook JH, Kim BS, Kim TH. A practical way to overcome the learning period of laparoscopic gastrectomy for gastric cancer. Surg Endosc. 2011;25(12):3838-3844.

230. Kim SC, Song KB, Jung YS, et al. Short-term clinical outcomes for 100 consecutive cases of laparoscopic pylorus-preserving pancreatoduodenectomy: improvement with surgical experience. Surg Endosc. 2013;27(1):95-103.

231. Kim SS, Lau ST, Lee SL, Waldhausen JH. The learning curve associated with laparoscopic pyloromyotomy. J Laparoendosc Adv Surg Tech A. 2005;15(5):474-477.

232. Kim SY, Hong SG, Roh HR, Park SB, Kim YH, Chae GB. Learning curve for a laparoscopic appendectomy by a surgical trainee. J Korean Soc Coloproctol. 2010;26(5):324-328.

233. Kim YW, Min BS, Kim NK, et al. The Impact of Incorporating of a Novice Assistant Into a Laparoscopic Team on Operative Outcomes in Laparoscopic Sigmoidectomy: A Prospective Study. Surg Endosc. 2010;20(1):36-41.

234. Kiran RP, Kirat HT, Ozturk E, Geisler DP, Remzi FH. Does the learning curve during laparoscopic colectomy adversely affect costs? Surg Endosc. 2010;24(11):2718-2722.

235. Kiriakopoulos A, Economopoulos K, Poulios E, Linos D. Impact of posterior retroperitoneoscopic adrenalectomy in a tertiary care center: a paradigm shift. Surg Endosc. 2011;25(11):3584-3589.

236. Kiyokawa H, Kato H. Radical retropubic prostatectomy through a minimal incision with portless endoscopy: our initial experience. Int J Urol. 2006;13(1):7-9.

237. Kligman MD, Thomas C, Saxe J. Effect of the learning curve on the early outcomes of laparoscopic Roux-en-Y gastric bypass. Am Surg. 2003;69(4):304-309.

238. Kockerling F, Schneider C, Reymond MA, et al. Early results of a prospective multicenter study on 500 consecutive cases of laparoscopic colorectal surgery. Laparoscopic Colorectal Surgery Study Group (LCSSG). Surg Endosc. 1998;12(1):37-41.

239. Koh CE, Martin DJ, Cavallucci DJ, Becerril-Martinez G, Taylor CJ. On the road to single-site laparoscopic adjustable gastric banding: lessons learned from 60 cases. Surg Endosc. 2011;25(3):947-953.

240. Kohler C, Klemm P, Schau A, et al. Introduction of transperitoneal lymphadenectomy in a gynecologic oncology center: analysis of 650 laparoscopic pelvic and/or paraaortic transperitoneal lymphadenectornies. Gynecol Oncol. 2004;95(1):52-61.

241. Kolozsvari NO, Andalib A, Kaneva P, et al. Sex is not everything: the role of gender in early performance of a fundamental laparoscopic skill. Surg Endosc. 2011;25(4):1037-1042.

242. Kolozsvari NO, Kaneva P, Brace C, et al. Mastery versus the standard proficiency target for basic laparoscopic skill training: effect on skill transfer and retention. Surg Endosc. 2011;25(7):2063-2070.

243. Kossi J, Luostarinen M. Virtual reality laparoscopic simulator as an aid in surgical resident education: two years' experience. Scand J Surg. 2009;98(1):48-54.

244. Kothari SN, Boyd WC, Larson CA, Gustafson HL, Lambert PJ, Mathiason MA. Training of a minimally invasive bariatric surgeon: are laparoscopic fellowships the answer? Obes Surg. 2005;15(3):323-329.

245. Krajinovic K, Pelz J, Germer CT, Georg Kerscher A. Single-port laparoscopic cholecystectomy with the x-cone: a feasibility study in 9 pigs. Surg Innov. 2011;18(1):39-43.

246. Ku JH, Yeo WG, Kim HH, Choi H. Laparoscopic nephrectomy for renal diseases in children: is there a learning curve? J Pediatr Surg. 2005;40(7):1173-1176.

247. Kullman E, Borch K, Svanvik J, Anderberg B. Differences in outcome of acute and elective laparoscopic cholecystectomy. Dig Surg. 1997;14(5):398-403.

248. Kumar R, Jog A, Vagvolgyi B, et al. Objective measures for longitudinal assessment of robotic surgery training. J Thorac Cardiovasc Surg. 2012;143(3):528-534.

249. Kunisaki C, Makino H, Yamamoto N, et al. Learning curve for laparoscopy-assisted distal gastrectomy with regional lymph node dissection for early gastric cancer. Surg Laparosc Endosc Percutan Tech. 2008;18(3):236-241.

250. Kye BH, Kim JG, Cho HM, Kim HJ, Suh YJ, Chun CS. Learning curves in laparoscopic right-sided colon cancer surgery: A comparison of first-generation colorectal surgeon to advance laparoscopically trained surgeon. J Laparoendosc Adv S. 2011;21(9):789-796.

251. Kye BH, Kim JG, Cho HM, et al. The effect of laparoscopic surgery in stage II and IIIright-sided colon cancer: A retrospective study. World J Surg Onc. 2012;10:89.

252. Lai IR, Yang CY, Yeh CC, Tsai MK, Lee PH. Hand-assisted versus total laparoscopic live donor nephrectomy: comparison and technique evolution at a single center in Taiwan. Clin Transplant. 2010;24(5):E182-187.

253. Lal P, Kajla RK, Chander J, Ramteke VK. Laparoscopic total extraperitoneal (TEP) inguinal hernia repair: overcoming the learning curve. Surg Endosc. 2004;18(4):642-645.

254. Larsen CR, Grantcharov T, Aggarwal R, et al. Objective assessment of gynecologic laparoscopic skills using the LapSimGyn virtual reality simulator. Surg Endosc. 2006;20(9):1460-1466.

255. Lau H, Patil NG, Yuen WK, Lee F. Learning curve for unilateral endoscopic totally extraperitoneal (TEP) inguinal hernioplasty. Surg Endosc. 2002;16(12):1724-1728.

256. Laursen HB, Thorsoe HJ, Funch-Jensen P, Rokkjaer M, Yasuda Y, Mortensen FV. Robotic-assisted laparoscopic Roux-en-Y choledochojejunostomy in pigs. J Hepato-Biliary Pan. 2005;12(2):167-172.

257. Lauter DM, Froines EJ. Initial experience with 150 cases of laparoscopic assisted colectomy. Am J Surg. 2001;181(5):398-403.

258. Lavery HJ, Small AC, Samadi DB, Palese MA. Transition from laparoscopic to robotic partial nephrectomy: the learning curve for an experienced laparoscopic surgeon. JSLS. 2011;15(3):291-297.

259. Lavoura Jr N, D'Ancona CAL, Borges GM, Netto Jr NR, Neves FC, Da Silva D. Laparoscopic ileocystoplasty: An experimental study in pigs. J Endourol. 2007;21(2):218-222.

260. Leclair MD, Vidal I, Suply E, Podevin G, Heloury Y. Retroperitoneal laparoscopic heminephrectomy in duplex kidney in infants and children: a 15-year experience. Eur Urol. 2009;56(2):385-389.

261. Lee JH RK, Lee JH, et al. . Learning curve for total gastrectomy with D2 lymph node dissection: cumulative sum analysis for qualified surgery. . Ann Surg Oncol. 2006;13:1175–1181.

262. Lee YS. Early experience with laparoscopic pelvic lymphadenectomy in women with gynecologic malignancy. J Am Assoc Gynecol Laparosc. 1999;6(1):59-63.

263. Lee YY, Kim TJ, Kim CJ, et al. Single-port access laparoscopic-assisted vaginal hysterectomy: a novel method with a wound retractor and a glove. J Minim Invasive Gynecol. 2009;16(4):450-453.

264. Lehmann KS, Ritz JP, Maass H, et al. A prospective randomized study to test the transfer of basic psychomotor skills from virtual reality to physical reality in a comparable training setting. Ann Surg. 2005;241(3):442-449.

265. Leibl BJ, Schmedt CG, Schwarz J, et al. A single institution's experience with transperitoneal laparoscopic hernia repair. Am J Surg. 1998;175(6):446-451.

266. Leitao MM, Jr., Briscoe G, Santos K, et al. Introduction of a computer-based surgical platform in the surgical care of patients with newly diagnosed uterine cancer: outcomes and impact on approach. Gynecol Oncol. 2012;125(2):394-399.

267. Lekawa M, Shapiro SJ, Gordon LA, Rothbart J, Hiatt JR. The laparoscopic learning curve. Surg Laparosc Endosc. 1995;5(6):455-458.

268. Lenihan Jr JP, Kovanda C, Seshadri-Kreaden U. What is the Learning Curve for Robotic Assisted Gynecologic Surgery? J Minim Invas Gyn. 2008;15(5):589-594.

269. Lezoche E, Guerrieri M, Feliciotti F, et al. Anterior, lateral, and posterior retroperitoneal approaches in endoscopic adrenalectomy. Surg Endosc. 2002;16(1):96-99.

270. Li JC, Lo AW, Hon SS, Ng SS, Lee JF, Leung KL. Institution learning curve of laparoscopic colectomy--a multi-dimensional analysis. Int J Colorectal Dis. 2012;27(4):527-533.

271. Li JCM, Hon SSF, Ng SSM, Lee JFY, Yiu RYC, Leung KL. The learning curve for laparoscopic colectomy: experience of a surgical fellow in an university colorectal unit. Surg Laparo Endo Per. 2009;23(7):1603-1608.

272. Lieber D, Tran V, Belani J, et al. Comparison of running and interrupted vesicourethral anastomoses in a porcine model. J Endourol. 2005;19(9):1109-1113.

273. Liem MSL, Van Steensel CJ, Boelhouwer RU, et al. The learning curve for totally extraperitoneal laparoscopic inguinal hernia repair. Am J Surg. 1996;171(2):281-285.

274. Lim JW, Lee JY, Lee SE, et al. The learning curve for laparoscopic totally extraperitoneal herniorrhaphy by moving average. J Korean Surg Soc. 2012;83(2):92-96.

275. Lim M, O'Boyle CJ, Royston CM, Sedman PC. Day case laparoscopic herniorraphy. A NICE procedure with a long learning curve. Surg Endosc. 2006;20(9):1453-1459.

276. Lim PC, Kang E, Park DH. Learning Curve and Surgical Outcome for Robotic-Assisted Hysterectomy with Lymphadenectomy: Case-Matched Controlled Comparison with Laparoscopy and Laparotomy for Treatment of Endometrial Cancer. J Minim Invas Gyn. 2010;17(6):739-748.

277. Lim PC, Kang E, Park do H. A comparative detail analysis of the learning curve and surgical outcome for robotic hysterectomy with lymphadenectomy versus laparoscopic hysterectomy with lymphadenectomy in treatment of endometrial cancer: a case-matched controlled study of the first one hundred twenty two patients. Gynecol Oncol. 2011;120(3):413-418.

278. Lim SB, Choi HS, Jeong SY, Park JG. Feasibility of laparoscopic techniques as the surgical approach of choice for primary colorectal cancer. Surg Endosc. 2008;22(12):2588-2595.

279. Lin Y, Li L, Zhu J, Qiang W, Makiyama K, Kubota Y. Experience of retroperitoneoscopic adrenalectomy in 195 patients with primary aldosteronism. Int J Urol. 2007;14(10):910-913.

280. Lin YY, Shabbir A, So JB. Laparoscopic appendectomy by residents: evaluating outcomes and learning curve. Surg Endosc. 2010;24(1):125-130.

281. Link BA, Nelson R, Josephson DY, Lau C, Wilson TG. Training of Urologic Oncology Fellows Does Not Adversely Impact Outcomes of Robot-Assisted Laparoscopic Prostatectomy. J Endourol. 2009;23(2):301-305.

282. Link RE, Bhayani SB, Allaf ME, et al. Exploring the learning curve, pathological outcomes and perioperative morbidity of laparoscopic partial nephrectomy performed for renal mass. J Urol. 2005;173(5):1690-1694.

283. Liyi P, Sasaki H, Qing LC, et al. Management of ovarian dermoid cysts by laparoscopy compared with laparotomy. Diagn Ther Endosc. 1996;3(1):19-27.

284. Loukas C, Nikiteas N, Kanakis M, Georgiou E. Deconstructing laparoscopic competence in a virtual reality simulation environment. Surgery. 2011;149(6):750-760.

285. Loukas C, Nikiteas N, Kanakis M, Georgiou E. The contribution of simulation training in enhancing key components of laparoscopic competence. Am Surgeon. 2011;77(6):708-715.

286. Loveland J, Joseph C, Liakos D, Botha R, Britz R. Overcoming the learning curve in hand-assisted laparoscopic live donor nephrectomy - a study in the animal model. S Afr J Surg. 2011;49(1):13-16.

287. Lowe MP, Bahador A, Muderspach LI, et al. Feasibility of laparoscopic extraperitoneal surgical staging for locally advanced cervical carcinoma in a gynecologic oncology fellowship training program. J Minim Invasive Gynecol. 2006;13(5):391-397.

288. Lowe MP, Johnson PR, Kamelle SA, Kumar S, Chamberlain DH, Tillmanns TD. A multiinstitutional experience with robotic-assisted hysterectomy with staging for endometrial cancer. Obstet Gynecol. 2009;114(2 Pt 1):236-243.

289. Lublin M, Lyass S, Lahmann B, et al. Leveling the learning curve for laparoscopic bariatric surgery. Surg Endosc. 2005;19(6):845-848.

290. Maccabee DL, Jones A, Domreis J, Deveney CW, Sheppard BC. Transition from open to laparoseopic adrenalectomy - The need for advanced training. Surg Endosc. 2003;17(10):1566-1569.

291. Maeda T, Tan KY, Konishi F, et al. Accelerated learning curve for colorectal resection, open versus laparoscopic approach, can be attained with expert supervision. Surg Endosc. 2010;24(11):2850-2854.

292. Maniar HS, Council ML, Prasad SM, Chu C, Damiano RJ, Jr. Comparison of skill training with robotic systems and traditional endoscopy: implications on training and adoption. J Surg Res. 2005;125(1):23-29.

293. Marengo F, Larrain D, Babilonti L, Spinillo A. Learning experience using the double-console da Vinci surgical system in gynecology: a prospective cohort study in a University hospital. Arch Gynecol Obstet. 2012;285(2):441-445.

294. Marret H, Chevillot M, Giraudeau B, Obstetrics TSGotFSoGa. Factors influencing laparoconversions during the learning curve of laparoscopic myomectomy. Acta Obstet Gyn Scan. 2006;85(3):324-329.

295. Martin GL, Guise AI, Bernie JE, Bargman V, Goggins W, Sundaram CP. Laparoscopic donor nephrectomy: effects of learning curve on surgical outcomes. Transplant Proc. 2007;39(1):27-29.

296. Martina GR, Giumelli P, Scuzzarella S, Remotti M, Caruso G, Lovisolo J. Laparoscopic extraperitoneal radical prostatectomy--learning curve of a laparoscopy-naive urologist in a community hospital. Urology. 2005;65(5):959-963.

297. Martinez CH, Chalasani V, Lim D, et al. Effect of prostate gland size on the learning curve for robot-assisted laparoscopic radical prostatectomy: does size matter initially? J Endourol. 2010;24(2):261-266.

298. Martinez-Pineiro L, Caceres F, Sanchez C, et al. Learning Curve of Laparoscopic Radical Prostatectomy in a University Teaching Hospital: Experience after the First 600 Cases. Eur Urol. 2006;5(19):914-924.

299. Martorana G, Manferrari F, Bertaccini A, et al. Laparoscopic radical prostatectomy: oncological evaluation in the early phase of the learning curve comparing to retropubic approach. Arch Ital Urol Androl. 2004;76(1):1-5.

300. Marusch F, Gastinger I, Schneider C, et al. Experience as a factor influencing the indications for laparoscopic colorectal surgery and the results. Surg Endosc. 2001;15(2):116-120.

301. Mayhew PD, Brown DC. Comparison of three techniques for ovarian pedicle hemostasis during laparoscopic-assisted ovariohysterectomy. Vet Surg. 2007;36(6):541-547.

302. McNeill AS, Nabi G, McLornan L, Cook J, Bollina P, Stolzenberg JU. Endoscopic extraperitoneal radical prostatectomy: critical analysis of outcomes and learning curve. BJU Int. 2010;106(10):1537-1543.

303. Meehan JJ, Georgeson KE. The learning curve associated with laparoscopic antireflux surgery in infants and children. J Pediatr Surg. 1997;32(3):426-429.

304. Meehan JJ, Meehan TD, Sandler A. Robotic fundoplication in children: resident teaching and a single institutional review of our first 50 patients. J Pediatr Surg. 2007;42(12):2022-2025.

305. Mehrabi A, Yetimoglu CL, Nickkholgh A, et al. Development and evaluation of a training module for the clinical introduction of the da Vinci robotic system in visceral and vascular surgery. Surg Endosc. 2006;20(9):1376-1382.

306. Meinke AK, Kossuth T. What is the learning curve for laparoscopic appendectomy? Surg Endosc. 1994;8(5):371-375.

307. Melendez TD, Childers JM, Nour M, Harrigill K, Surwit EA. Laparoscopic staging of endometrial cancer: the learning experience. JSLS. 1997;1(1):45-49.

308. Menon VS, Manson JMK, Baxter JN. Laparoscopic fundoplication: Learning curve and patient satisfaction. Annals of the Royal College of Surgeons of England. 2003;85(1):10-13.

309. Meraney AM, Gill IS. Financial analysis of open versus laparoscopic radical nephrectomy and nephroureterectomy. J Urol. 2002;167(4):1757-1762.

310. Mercado MA, Franssen B, Dominguez I, et al. Transition from a low: to a high-volume centre for bile duct repair: changes in technique and improved outcome. HPB (Oxford). 2011;13(11):767-773.

311. Meyers WC, Sue S, Bennett CL, et al. THE LEARNING-CURVE FOR LAPAROSCOPIC CHOLECYSTECTOMY. Am J Surg. 1995;170(1):55-59.

312. Miao JW, Fleury AC, Kushnir CL, Silver DF, Naik R, Spirtos NM. Post fellowship training in "new-to-them" surgical techniques: Assessment of learning curve characteristics. Gynecol Oncol. 2011;121(3):620-624.

313. Miskovic D, Wyles SM, Carter F, Coleman MG, Hanna GB. Development, validation and implementation of a monitoring tool for training in laparoscopic colorectal surgery in the English National Training Program. Surg Endosc. 2011;25(4):1136-1142.

314. Miyajima A, Hasegawa M, Takeda T, et al. How do young residents practice laparoscopic surgical skills? Urology. 2010;76(2):352-356.

315. Mochizuki Y, Kodera Y, Fujiwara M, et al. Single-institute prospective trial of laparoscopy-assisted distal gastrectomy with systemic lymph node dissection for early gastric carcinoma. Gastric Cancer. 2012;15(2):124-130.

316. Mohr CJ, Nadzam GS, Alami RS, Sanchez BR, Curet MJ. Totally robotic laparoscopic Roux-en-Y Gastric bypass: results from 75 patients. Obes Surg. 2006;16(6):690-696.

317. Mohr CJ, Nadzam GS, Curet MJ. Totally robotic Roux-en-Y gastric bypass. Arch Surg. 2005;140(8):779-786.

318. Molinas CR, Binda MM, Mailova K, Koninckx PR. The rabbit nephrectomy model for training in laparoscopic surgery. Hum Reprod. 2004;19(1):185-190.

319. Molinas CR, Cabral CR, Koninckx PR. Effect of the diameter of the endoscope and of surgeon training on the duration and quality of laparoscopic surgery in a rabbit model. J Am Assoc Gynecol Laparosc. 1999;6(4):447-452.

320. Moore RG, Averch TD, Schulam PG, Adams IJB, Chen RN, Kavoussi LR. Laparoscopic pyeloplasty: Experience with the initial 30 cases. J Urol. 1997;157(2):459-462.

321. Moschos E, Coleman RL. Acquiring laparoscopic skill proficiency: does orientation matter? Am J Obstet Gynecol. 2004;191(5):1782-1787.

322. Mottrie A, De Naeyer G, Schatteman P, Carpentier P, Sangalli M, Ficarra V. Impact of the learning curve on perioperative outcomes in patients who underwent robotic partial nephrectomy for parenchymal renal tumours. Eur Urol. 2010;58(1):127-132.

323. Mourik SL, Martens JE, Aktas M. Uterine preservation in pelvic organ prolapse using robot assisted laparoscopic sacrohysteropexy: quality of life and technique. Eur J Obstet Gynecol R B. 2012;165(1):122-127.

324. Munro W, Brancatisano R, Adams IP, Falk GL. Complications of laparoscopic fundoplication: the first 100 patients. Surg Laparosc Endosc. 1996;6(6):421-423.

325. Mustafa S, Amit A, Filmar S, et al. Implementation of laparoscopic sacrocolpopexy: establishment of a learning curve and short-term outcomes. Arch Gynecol Obstet. 2012;286(4):983-988.

326. Nakagawa K, Murai M, Deguchi N, et al. Laparoscopic adrenalectomy: clinical results in 25 patients. J Endourol. 1995;9(3):265-267.

327. Nakajima I, Iwadoh K, Koyama I, Tojimbara T, Teraoka S, Fuchinoue S. Nine-yr experience of 700 hand-assisted laparoscopic donor nephrectomies in Japan. Clin Transplant. 2012;26(5):797-807.

328. Narazaki K, Oleynikov D, Stergiou N. Robotic surgery training and performance - Identifying objective variables for quantifying the extent of proficiency. Surg Endosc. 2006;20(1):96-103.

329. Naslund E, Freedman J, Lagergren J, Stockeld D, Granstrom L. Three-year results of laparoscopic vertical banded gastroplasty. Obes Surg. 1999;9(4):369-373.

330. Neo EL, Zingg U, Devitt PG, Jamieson GG, Watson DI. Learning curve for laparoscopic repair of very large hiatal hernia. Surg Endosc. 2010;25(6):1775-1782.

331. Nerli RB, Reddy M, Prabha V, Koura A, Patne P, Ganesh MK. Complications of laparoscopic pyeloplasty in children. Pediatr Surg Int. 2009;25(4):343-347.

332. Ng JSY, Fong YF, Tong PSY, Yong EL, Low JJH. Gynaecologic Robot-Assisted Cancer and Endoscopic Surgery (GRACES) in a Tertiary Referral Centre. Annals Academy of Medicine Singapore. 2011;40(5):208-212.

333. Nguyen NT, Huerta S, Gelfand D, Stevens CM, Jim J. Bowel obstruction after laparoscopic Roux-en-Y gastric bypass. Obes Surg. 2004;14(2):190-196.

334. Nisen H, Perttila I, Ranta-Knuuttila T, Ala-Opas M, Sankila A, Taari K. Laparoscopic radical prostatectomy: surgical, oncological and functional outcomes. Scand J Urol Nephrol. 2008;42(1):29-34.

335. Nordenstrom E, Westerdahl J, Hallgrimsson P, Bergenfelz A. A prospective study of 100 roboticallyassisted laparoscopic adrenalectomies. Journal of Robotic Surgery. 2011;5(2):127-131.

336. Nugent E, Shirilla N, Hafeez A, et al. Development and evaluation of a simulator-based laparoscopic training program for surgical novices. Surg Endosc. 2013;27(1):214-221.

337. Nursal TZ, Ezer A, Belli S, Parlakgumus A, Caliskan K, Noyan T. Reaching proficiency in laparoscopic splenectomy. World J Gastroenterol. 2009;15(32):4005-4008.

338. O'Connor A, Schwaitzberg SD, Cao CGL. How much feedback is necessary for learning to suture? Surg Endosc. 2008;22(7):1614-1619.

339. Occelli B, Narducci F, Lanvin D, LeBlanc E, Querleu D. Learning curves for transperitoneal laparoscopic and extraperitoneal endoscopic paraaortic lymphadenectomy. J Am Assoc Gynecol Laparosc. 2000;7(1):51-53.

340. Okamura K, Ono Y, Yamada Y, et al. Endoscopic trigonoplasty for primary vesico-ureteric reflux. Br J Urol. 1995;75(3):390-394.

341. Okrainec A, Ferri LE, Feldman LS, Fried GM. Defining the learning curve in laparoscopic paraesophageal hernia repair: a CUSUM analysis. Surg Endosc. 2011;25(4):1083-1087.

342. Oliak D, Ballantyne GH, Weber P, Wasielewski A, Davies RJ, Schmidt HJ. Laparoscopic Roux-en-Y gastric bypass: defining the learning curve. Surg Endosc. 2003;17(3):405-408.

343. Onders RP, DiMarco AF, Ignagni AR, Mortimer JT. The learning curve for investigational surgery: lessons learned from laparoscopic diaphragm pacing for chronic ventilator dependence. Surg Endosc. 2005;19(5):633-637.

344. Oomen MWN, Hoekstra LT, Bakx R, Heij HA. Learning curves for pediatric laparoscopy: how many operations are enough? The Amsterdam experience with laparoscopic pyloromyotomy. Surg Endosc. 2010;24(8):1829-1833.

345. Opitz I, Gantert W, Giger U, Kocher T, Krahenbuhl L. Bleeding remains a major complication during laparoscopic surgery: analysis of the SALTS database. Langenbecks Arch Surg. 2005;390(2):128-133.

346. Orlando R, 3rd, Russell JC, Lynch J, Mattie A. Laparoscopic cholecystectomy. A statewide experience. The Connecticut Laparoscopic Cholecystectomy Registry. Arch Surg. 1993;128(5):494-498.

347. Orzech N, Palter VN, Reznick RK, Aggarwal R, Grantcharov TP. A comparison of 2 ex vivo training curricula for advanced laparoscopic skills: a randomized controlled trial. Ann Surg. 2012;255(5):833-839.

348. Otsuka Y, Tsuchiya M, Maeda T, et al. Laparoscopic hepatectomy for liver tumors: proposals for standardization. J Hepatobiliary Pancreat Surg. 2009;16(6):720-725.

349. Ozturk E, da Luz Moreira A, Vogel JD. Hand-Assisted Laparoscopic Colectomy: The learning curve is for operative speed, not for quality. Colorectal Dis. 2010;12(10 Online):e304-309.

350. Ozturk E, Kiran RP, Remzi F, Geisler D, Fazio V. Hand-assisted laparoscopic surgery may be a useful tool for surgeons early in the learning curve performing total abdominal colectomy. Colorectal Dis. 2010;12(3):199-205.

351. Paek J, Kim SW, Lee SH, et al. Learning curve and surgical outcome for single-port access total laparoscopic hysterectomy in 100 consecutive cases. Gynecol Obstet Invest. 2011;72(4):227-233.

352. Pala XF, Sallent EF, Puig RC, Ribalta JMA. Evolution of laparoscopic cholecystectomy in the regional hospitals of Catalonia. Revista Espanola De Enfermedades Digestivas. 2000;92(4):217-221.

353. Parikh D, Johnson M, Chagla L, Lowe David A, McCulloch P. D2 gastrectomy: lessons from a prospective audit of the learning curve. Brit J Surg. 1996;83:1595-1599.

354. Park IJ, Choi GS, Lim KH, Kang BM, Jun SH. Multidimensional analysis of the learning curve for laparoscopic colorectal surgery: lessons from 1,000 cases of laparoscopic colorectal surgery. Surg Endosc. 2009;23(4):839-846.

355. Park IJ, Choi GS, Lim KH, Kang BM, Jun SH. Multidimensional analysis of the learning curve for laparoscopic resection in rectal cancer. J Gastrointest Surg. 2009;13(2):275-281.

356. Park JS, Kang SB, Kim SW, Cheon GN. Economics and the laparoscopic surgery learning curve: comparison with open surgery for rectosigmoid cancer. World J Surg. 2007;31(9):1827-1834.

357. Park S, Choi G-S, Park J, Kim H, Ryuk J-P. Short-term clinical outcome of robot-assisted intersphincteric resection for low rectal cancer: a retrospective comparison with conventional laparoscopy. Surg Endosc. 2013;27(1):48-55.

358. Park SS, Kim MC, Park MS, Hyung WJ. Rapid adaptation of robotic gastrectomy for gastric cancer by experienced laparoscopic surgeons. Surg Endosc. 2012;26(1):60-67.

359. Park YH, Baik KD, Lee YJ, Kim KT, Kim HH. Learning curve analysis for laparoendoscopic single-site radical nephrectomy. J Endourol. 2012;26(5):494-498.

360. Passerotti CC, Nguyen HT, Lais A, et al. Robot-assisted laparoscopic ileal bladder augmentation: defining techniques and potential pitfalls. J Endourol. 2008;22(2):355-360.

361. Passerotti CC, Passerotti A, Dall'Oglio MF, et al. Comparing the Quality of the Suture Anastomosis and the Learning Curves Associated with Performing Open, Freehand, and Robotic-Assisted Laparoscopic Pyeloplasty in a Swine Animal Model. J Am Coll Surg. 2009;208(4):576-586.

362. Pendlimari R, Holubar SD, Dozois EJ, Larson DW, Pemberton JH, Cima RR. Technical proficiency in hand-assisted laparoscopic colon and rectal surgery: Determining how many cases are required to achieve mastery. Arch Surg. 2012;147(4):317-322.

363. Perrenot C, Perez M, Tran N, et al. The virtual reality simulator dV-Trainer is a valid assessment tool for robotic surgical skills. Surg Endosc. 2012;26(9):2587-2593.

364. Peterli R, Herzog U, Schuppisser JP, Ackermann C, Tondelli P. The learning curve of laparoscopic cholecystectomy and changes in indications: one institutions's experience with 2,650 cholecystectomies. J Laparoendosc Adv Surg Tech A. 2000;10(1):13-19.

365. Peters JH, Ellison EC, Innes JT, et al. Safery and Efficacy of Laparoscopic Cholecystectomy - A Prospective Analysis of 100 Initial Patients. Ann Surg. 1991;213(1):3-12.

366. Peters MB, Jr., Camacho D, Ojeda H, et al. Defining the learning curve for laparoscopic splenectomy for immune thrombocytopenia purpura. Am J Surg. 2004;188(5):522-525.

367. Petroni G, Niccolini M, Menciassi A, Dario P, Cuschieri A. A novel intracorporeal assembling robotic system for single-port laparoscopic surgery. Surg Endosc. 2013;27(2):665-670.

368. Phillips J, Catto JW, Lavin V, et al. The laparoscopic nephrectomy learning curve: a single centre's development of a de novo practice. Postgrad Med J. 2005;81(959):599-603.

369. Piaggio L, Franc-Guimond J, Figueroa TE, Barthold JS, Gonzalez R. Comparison of laparoscopic and open partial nephrectomy for duplication anomalies in children. J Urol. 2006;175(6):2269-2273.

370. Pierorazio PM, Patel HD, Feng T, Yohannan J, Hyams ES, Allaf ME. Robotic-assisted versus traditional laparoscopic partial nephrectomy: Comparison of outcomes and evaluation of learning curve. Urology. 2011;78(4):813-819.

371. Pietrabissa A, Sbrana F, Morelli L, et al. Overcoming the Challenges of Single-Incision Cholecystectomy With Robotic Single-Site Technology. Arch Surg. 2012;147(8):709-714.

372. Pillinger SH, Bambach CP, Sidhu S. Laparoscopic adrenalectomy: A 6-year experience of 59 cases. ANZ J Surg. 2002;72(7):467-470.

373. Pitter MC, Anderson P, Blissett A, Pemberton N. Robotic-assisted gynaecological surgery - establishing training criteria; minimizing operative time and blood toss. Int J Med Robot Comp. 2008;4(2):114-120.

374. Porpiglia F, Terrone C, Renard J, et al. Transcapsular adenomectomy(Millin): a comparative study, extraperitoneal laparoscopy versus open surgery. Eur Urol. 2006;49(1):120-126.

375. Poulakis V, Dillenburg W, Moeckel M, et al. Laparoscopic radical prostatectomy: prospective evaluation of the learning curve. Eur Urol. 2005;47(2):167-175.

376. Poulakis V, Ferakis N, Dillenburg W, de Vries R, Witzsch U, Becht E. Laparoscopic radical prostatectomy using an extraperitoneal approach: Nordwest Hospital technique and initial experience in 255 cases. J Endourol. 2006;20(1):45-53.

377. Poulakis V, Witzsch U, De Vries R, Dillenburg W, Moeckel M, Becht E. Intensive laparoscopic training: the impact of a simplified pelvic-trainer model for the urethrovesical anastomosis on the learning curve. World J Urol. 2006;24(3):331-337.

378. Pournaras DJ, Jafferbhoy S, Titcomb DR, et al. Three hundred laparoscopic Roux-en-Y gastric bypasses: managing the learning curve in higher risk patients. Obes Surg. 2010;20(3):290-294.

379. Prasad SM, Maniar HS, Soper NJ, Damiano RJ, Jr., Klingensmith ME. The effect of robotic assistance on learning curves for basic laparoscopic skills. Am J Surg. 2002;183(6):702-707.

380. Priego P, Ramiro C, Molina JM, et al. Results of laparoscopic cholecystectomy in a third-level university hospital after 17 years of experience. Rev Esp Enferm Dig. 2009;101(1):20-30.

381. Pruthi RS, Smith A, Wallen EM. Evaluating the learning curve for robot-assisted laparoscopic radical cystectomy. J Endourol. 2008;22(11):2469-2474.

382. Pulliam SJ, Weinstein MM, Wakamatsu MM. Minimally invasive apical sacropexy: A retrospective review of laparoscopic and robotic operating room experiences. Female Pelvic Medicine and Reconstructive Surgery. 2012;18(2):122-126.

383. Querleu D, Lanvin D, Elhage A, Henry-Buisson B, Leblanc E. An objective experimental assessment of the learning curve for laparoscopic surgery: the example of pelvic and para-aortic lymph node dissection. Eur J Obstet Gynecol R B. 1998;81(1):55-58.

384. Ramacciato G, Paolo M, Pietromaria A, et al. Ten years of laparoscopic adrenalectomy: lesson learned from 104 procedures. Am Surg. 2005;71(4):321-325.

385. Ramachandran A, Kurien A, Patil P, et al. A novel training model for laparoscopic pyeloplasty using chicken crop. J Endourol. 2008;22(4):725-728.

386. Rashid TG, Kini M, Ind TE. Comparing the learning curve for robotically assisted and straight stick laparoscopic procedures in surgical novices. Int J Med Robot. 2010;6(3):306-310.

387. Rassweiler J, Sentker L, Seemann O, Hatzinger M, Rumpelt HJ. Laparoscopic radical prostatectomy with the Heilbronn technique: an analysis of the first 180 cases. J Urol. 2001;166(6):2101-2108.

388. Rassweiler J, Sentker L, Seemann O, Hatzinger M, Stock C, Frede T. Heilbronn laparoscopic radical prostatectomy. Technique and results after 100 cases. Eur Urol. 2001;40(1):54-64.

389. Rassweiler JJ, Seemann O, Frede T, Henkel TO, Alken P. Retroperitoneoscopy: experience with 200 cases. J Urol. 1998;160(4):1265-1269.

390. Rawlins MC, Hefty TL, Brown SL, Biehl TR. Learning laparoscopic donor nephrectomy safely: a report on 100 cases. Arch Surg. 2002;137(5):531-534.

391. Reade C, Hauspy J, Schmuck ML, Moens F. Characterizing the Learning Curve for Laparoscopic Radical Hysterectomy: Buddy Operating as a Technique for Accelerating Skill Acquisition. Int J Gynecol Cancer. 2011;21(5):930-935.

392. Rege RV, Joehl RJ. A learning curve for laparoscopic splenectomy at an academic institution. J Surg Res. 1999;81(1):27-32.

393. Rehman J, Ragab MM, Venkatesh R, et al. Laparoscopic radical prostatectomy: Washington University initial experience and prospective evaluation of quality of life. J Endourol. 2004;18(3):277-287.

394. Reichenbach DJ, Tackett AD, Harris J, et al. Laparoscopic colon resection early in the learning curve: what is the appropriate setting? Ann Surg. 2006;243(6):730-735.

395. Reissman P, Cohen S, Weiss EG, Wexner SD. Laparoscopic colorectal surgery: ascending the learning curve. World J Surg. 1996;20(3):277-281.

396. Richards KA, Kader K, Pettus JA, Smith JJ, Hemal AK. Does initial learning curve compromise outcomes for robot-assisted radical cystectomy? A critical evaluation of the first 60 cases while establishing a robotics program. J Endourol. 2011;25(9):1553-1558.

397. Richardson MC, Bell G, Fullarton GM. Incidence and nature of bile duct injuries following laparoscopic cholecystectomy: an audit of 5913 cases. West of Scotland Laparoscopic Cholecystectomy Audit Group. Br J Surg. 1996;83(10):1356-1360.

398. Robinson SM, Hui KY, Amer A, Manas DM, White SA. Laparoscopic liver resection: is there a learning curve? Dig Surg. 2012;29(1):62-69.

399. Rodriguez AR, Rachna K, Pow-Sang JM. Laparoscopic extraperitoneal radical prostatectomy: impact of the learning curve on perioperative outcomes and margin status. JSLS. 2010;14(1):6-13.

400. Rosen J, Brown JD, Chang L, Sinanan MN, Hannaford B. Generalized approach for modeling minimally invasive surgery as a stochastic process using a discrete Markov model. IEEE Trans Biomed Eng. 2006;53(3):399-413.

401. Rosen J, Chang L, Brown JD, Hannaford B, Sinanan M, Satava R. Minimally invasive surgery task decomposition--etymology of endoscopic suturing. Stud Health Technol Inform. 2003;94:295-301.

402. Rosen J, Solazzo M, Hannaford B, Sinanan M. Objective laparoscopic skills assessments of surgical residents using Hidden Markov Models based on haptic information and tool/tissue interactions. Stud Health Technol Inform. 2001;81:417-423.

403. Rosen J, Solazzo M, Hannaford B, Sinanan M. Task decomposition of laparoscopic surgery for objective evaluation of surgical residents' learning curve using hidden Markov model. Comput Aided Surg. 2002;7(1):49-61.

404. Rossetti A, Sizzi O, Chiarotti F, Florio G. Developments in techniques for laparoscopic myomectomy. JSLS. 2007;11(1):34-40.

405. Sait KH. Early experience with the da Vinci surgical system robot in gynecological surgery at King Abdulaziz University Hospital. Int J Womens Health. 2011;3:219-226.

406. Salkini MW, Hamilton AJ. The effect of age on acquiring laparoscopic skills. J Endourol. 2010;24(3):377-379.

407. Samadi DB, Muntner P, Nabizada-Pace F, Brajtbord JS, Carlucci J, Lavery HJ. Improvements in robot-assisted prostatectomy: the effect of surgeon experience and technical changes on oncologic and functional outcomes. J Endourol. 2010;24(7):1105-1110.

408. Sanchez BR, Mohr CJ, Morton JM, Safadi BY, Alami RS, Curet MJ. Comparison of totally robotic laparoscopic Roux-en-Y gastric bypass and traditional laparoscopic Roux-en-Y gastric bypass. Surg Obes Relat Dis. 2005;1(6):549-554.

409. Sanchez-Peralta LF, Sanchez-Margallo FM, Moyano-Cuevas JL, et al. Learning curves of basic laparoscopic psychomotor skills in SINERGIA VR simulator. Int J Comput Assist Radiol Surg. 2012;7(6):881-889.

410. Santos BF, Reif TJ, Soper NJ, Hungness ES. Effect of training and instrument type on performance in single-incision laparoscopy: Results of a randomized comparison using a surgical simulator. Surg Endosc. 2011;25(12):3798-3804.

411. Sariego J, Spitzer L, Matsumoto T. The "learning curve" in the performance of laparoscopic cholecystectomy. Int Surg. 1993;78(1):1-3.

412. Sarli L, Pietra N, Sansebastiano G, et al. Reduced postoperative morbidity after elective laparoscopic cholecystectomy: stratified matched case-control study. World J Surg. 1997;21(8):872-878.

413. Sarli L, Rollo A, Cecchini S, et al. Impact of obesity on laparoscopic-assisted left colectomy in different stages of the learning curve. Surg Laparosc Endosc Percutan Tech. 2009;19(2):114-117.

414. Schaeffer DF, Rusnak CH, Amson BJ. Laparoscopic Roux-en-Y gastric bypass surgery: initial results of 120 consecutive patients at a single British Columbia surgical center. Am J Surg. 2008;195(5):565-569.

415. Schauer P, Ikramuddin S, Hamad G, Gourash W. The learning curve for laparoscopic Roux-en-Y gastric bypass is 100 cases. Surg Endosc. 2003;17(2):212-215.

416. Schijven MP, Jakimowicz J. The learning curve on the Xitact LS 500 laparoscopy simulator: profiles of performance. Surg Endosc. 2004;18(1):121-127.

417. Schlachta CM, Mamazza J, Seshadri PA, Cadeddu M, Gregoire R, Poulin EC. Defining a learning curve for laparoscopic colorectal resections. Dis Colon Rectum. 2001;44(2):217-222.

418. Schlosser K, Alkhawaga M, Maschuw K, Zielke A, Mauner E, Hassan I. Training of laparoscopic skills with virtual reality simulator: a critical reappraisal of the learning curve. Eur Surg. 2007;39(3):180-184.

419. Schreinemakers JMJ, Kiela GJ, Valk GD, Vriens MR, Rinkes I. Retroperitoneal endoscopic adrenalectomy is safe and effective. Brit J Surg. 2010;97(11):1667-1672.

420. Schreuder HW, Pattij TO, Zweemer RP, van Baal MW, Verheijen RH. Increasing experience in laparoscopic staging of early ovarian cancer. Gynecol Surg. 2012;9(1):89-96.

421. Schreuder HW, Zweemer RP, van Baal WM, van de Lande J, Dijkstra JC, Verheijen RH. From open radical hysterectomy to robot-assisted laparoscopic radical hysterectomy for early stage cervical cancer: aspects of a single institution learning curve. Gynecol Surg. 2010;7(3):253-258.

422. Scott DJ, Young WN, Tesfay ST, Frawley WH, Rege RV, Jones DB. Laparoscopic skills training. Am J Surg. 2001;182(2):137-142.

423. Seamon LG, Cohn DE, Richardson DL, et al. Robotic hysterectomy and pelvic-aortic lymphadenectomy for endometrial cancer. Obstet Gynecol. 2008;112(6):1207-1213.

424. Seamon LG, Fowler JM, Richardson DL, et al. A detailed analysis of the learning curve: robotic hysterectomy and pelvic-aortic lymphadenectomy for endometrial cancer. Gynecol Oncol. 2009;114(2):162-167.

425. Secin FP, Savage C, Abbou C, et al. The learning curve for laparoscopic radical prostatectomy: an international multicenter study. J Urol. 2010;184(6):2291-2296.

426. Senagore AJ, Luchtefeld MA, Mackeigan JM. What is the learning curve for laparoscopic colectomy? Am Surg. 1995;61(8):681-685.

427. Serra AS, Roig MP, Lledo JB, et al. The learning curve in ambulatory laparoscopic cholecystectomy. Surg Laparosc Endosc Percutan Tech. 2002;12(5):320-324.

428. Shah PR, Haray PN. A tool-kit for the quantitative assessment of proficiency in laparoscopic colorectal surgery. Colorectal Dis. 2011;13(5):576-582.

429. Shah PR, Joseph A, Haray PN. Laparoscopic colorectal surgery: learning curve and training implications. Postgrad Med J. 2005;81(958):537-540.

430. Shapiro K, Patel S, Abdo Z, Ferzli G. Laparoscopic adjustable gastric banding: is there a learning curve? Surg Endosc. 2004;18(1):48-50.

431. Sherman V, Feldman LS, Stanbridge D, Kazmi R, Fried GM. Assessing the learning curve for the acquisition of laparoscopic skills on a virtual reality simulator. Surg Endosc. 2005;19(5):678-682.

432. Shikora SA, Kim JJ, Tarnoff ME, et al. Laparoscopic Roux-en-Y gastric bypass: Results and learning curve of a high-volume academic program. Arch Surg. 2005;140(4):362-367.

433. Shimizu S, Noshiro H, Nagai E, Uchiyama A, Tanaka M. Laparoscopic gastric surgery in a Japanese institution: Analysis of the initial 100 procedures. J Am Coll Surg. 2003;197(3):372-378.

434. Shin RB. Evaluation of the learning curve for laparoscopic Roux-en-Y gastric bypass surgery. Surg Obes Relat Dis. 2005;1(2):91-94.

435. Shoma AM, Eraky I, El-Kappany H. Laparoscopic nephrectomy: Prediction of outcome in relation to the preoperative risk factors in two approaches. J Endourol. 2001;15(5):517-522.

436. Simons AJ, Anthone GJ, Ortega AE, et al. Laparoscopic-assisted colectomy learning curve. Dis Colon Rectum. 1995;38(6):600-603.

437. Singh O, Gupta SS, Arvind NK. Laparoscopic pyeloplasty: an analysis of first 100 cases and important lessons learned. Int Urol Nephrol. 2011;43(1):85-90.

438. Skinner A, Maoate K, Beasley S. Retroperitoneal laparoscopic nephrectomy: the effect of the learning curve, and concentrating expertise, on operating times. J Laparoendosc Adv Surg Tech A. 2010;20(4):383-385.

439. Skrekas T, Mochtar CA, Lagerveld BW, et al. Mentor-initiated approach in laparoscopic radical prostatectomy. J Endourol. 2006;20(10):831-835.

440. Smith CD, Farrell TM, McNatt SS, Metreveli RE. Assessing laparoscopic manipulative skills. Am J Surg. 2001;181(6):547-550.

441. Sneider EB, Jones S, Danielson PD. Refinements in selection criteria for pediatric laparoscopic inguinal hernia repair. J Laparoendosc Adv Surg Tech A. 2009;19(2):237-240.

442. So BK, Choi JD, Lee SY, Kim HS, Park SY, Seo SI. Experience of 100 laparoscopic radical prostatectomies performed by a single surgeon: an analysis of surgical and functional outcomes. Korean J Urol. 2011;52(8):517-523.

443. Sommer T, Larsen JF, Raundahl U. Eliminating Learning Curve-Related Morbidity in Fast Track Laparoscopic Roux-en-Y Gastric Bypass. J Laparoendosc Adv Surg Tech A. 2011;21(4):307-312.

444. Son GM, Kim JG, Lee JC, et al. Multidimensional analysis of the learning curve for laparoscopic rectal cancer surgery. J Laparoendosc Adv Surg Tech A. 2010;20(7):609-617.

445. Song J, Kang WH, Oh SJ, Hyung WJ, Choi SH, Noh SH. Role of robotic gastrectomy using da Vinci system compared with laparoscopic gastrectomy: initial experience of 20 consecutive cases. Surg Endosc. 2009;23(6):1204-1211.

446. Song T, Kim TJ, Lee YY, et al. What is the learning curve for single-port access laparoscopic-assisted vaginal hysterectomy? Eur J Obstet Gynecol R B. 2011;158(1):93-96.

447. Song T, Kim TJ, Lee YY, et al. Learning curves for single-site laparoscopic ovarian surgery. J Minim Invas Gyn. 2012;19:344-349.

448. Soot SJ, Eshraghi N, Farahmand M, Sheppard BC, Deveney CW. Transition from open to laparoscopic fundoplication: the learning curve. Arch Surg. 1999;134(3):278-281.

449. Sorensen MD, Delostrinos C, Johnson MH, Grady RW, Lendvay TS. Comparison of the learning curve and outcomes of robotic assisted pediatric pyeloplasty. J Urol. 2011;185:2517-2522.

450. Sovik TT, Aasheim ET, Kristinsson J, et al. Establishing laparoscopic Roux-en-Y gastric bypass: perioperative outcome and characteristics of the learning curve. Obes Surg. 2009;19(2):158-165.

451. Spaun GO, Zheng B, Martinec DV, Arnold BN, Swanstrom LL. A comparison of early learning curves for complex bimanual coordination with open, laparoscopic, and flexible endoscopic instrumentation. Surg Endosc. 2010;24(9):2145-2155.

452. Stefanidis D, Hope WW, Korndorffer Jr JR, Markley S, Scott DJ. Initial Laparoscopic Basic Skills Training Shortens the Learning Curve of Laparoscopic Suturing and Is Cost-Effective. J Am Coll Surg. 2010;210(4):436-440.

453. Stefanidis D, Wang F, Korndorffer Jr JR, Dunne JB, Scott DJ. Robotic assistance improves intracorporeal suturing performance and safety in the operating room while decreasing operator workload. Surg Endosc. 2010;24(2):377-382.

454. Stewart KC, Finley RJ, Clifton JC, Graham AJ, Storseth C, Inculet R. Thoracoscopic versus laparoscopic modified Heller Myotomy for achalasia: efficacy and safety in 87 patients. J Am Coll Surg. 1999;189(2):164-169.

455. Stitz RW, Lumley JW. Laparoscopic colorectal surgery--new advances and techniques. Ann Acad Med Singapore. 1996;25(5):653-656.

456. Stolzenbury JU, Rabenalt R, Do M, Horn LC, Liatsikos EN. Modular training for residents with no prior experience with open pelvic surgery in endoscopic extraperitoneal radical prostatectomy. Eur Urol. 2006;49(3):491-500.

457. Strom P, Kjellin A, Hedman L, Johnson E, Wredmark T, Fellander-Tsai L. Validation and learning in the Procedicus KSA virtual reality surgical simulator. Surg Endosc. 2003;17:227–231.

458. Su LM, Ratner LE, Montgomery RA, et al. Laparoscopic live donor nephrectomy: trends in donor and recipient morbidity following 381 consecutive cases. Ann Surg. 2004;240(2):358-363.

459. Sudan R, Bennett KM, Jacobs DO, Sudan DL. Multifactorial analysis of the learning curve for robot-assisted laparoscopic biliopancreatic diversion with duodenal switch. Ann Surg. 2012;255(5):940-945.

460. Sultan MF, Merrilees AD, Chabert CC, Eden CG. Blood loss during laparoscopic radical prostatectomy. J Endourol. 2009;23(4):635-638.

461. Szydelko T, Kasprzak J, Apoznanski W, et al. Clavien Classification of Complications After 150 Laparoscopic Pyeloplasties. Urology. 2011;77(6):1359-1364.

462. Talebpour M, Alijani A, Hanna GB, Moosa Z, Tang B, Cuschieri A. Proficiency-gain curve for an advanced laparoscopic procedure defined by observation clinical human reliability assessment (OCHRA). Surg Endosc. 2009;23(4):869-875.

463. Tang HW, Van Brussel H, Vander Sloten J, et al. Evaluation of an intuitive writing interface in robot-aided laser laparoscopic surgery. Comput Aided Surg. 2006;11(1):21-30.

464. Teber D, Guven S, Yaycioglu O, et al. Single-knot running suture anastomosis (one-knot pyeloplasty) for laparoscopic dismembered pyeloplasty: training model on a porcine bladder and clinical results. Int Urol Nephrol. 2010;42(3):609-614.

465. Tekkis P, Fazio V, Lavery I, et al. Evaluation of the Learning Curve in Ileal Pouch–Anal Anastomosis Surgery. Ann Surg. 2005;241:262–268.

466. Tekkis PP, Senagore AJ, Delaney CP, Fazio VW. Evaluation of the learning curve in laparoscopic colorectal surgery: comparison of right-sided and left-sided resections. Ann Surg. 2005;242(1):83-91.

467. Terachi T, Matsuda T, Terai A, et al. Transperitoneal laparoscopic adrenalectomy: experience in 100 patients. J Endourol. 1997;11(5):361-365.

468. Thiptirapong B, Leewansangtong S, Nualyong C, et al. Laparoscopic radical prostatectomy: Perioperative outcomes and morbidity of 559 consecutive cases in Siriraj hospital, Thailand. J Med Assoc Thailand. 2011;94(6):693-698.

469. Thompson JR, Leonard AC, Doarn CR, Roesch MJ, Broderick TJ. Limited value of haptics in virtual reality laparoscopic cholecystectomy training. Surg Endosc. 2011;25(4):1107-1114.

470. Tokunaga M, Hiki N, Fukunaga T, et al. Quality control and educational value of laparoscopy-assisted gastrectomy in a high-volume center. Surg Endosc. 2009;23(2):289-295.

471. Tokunaga M, Hiki N, Fukunaga T, et al. Learning curve of laparoscopy-assisted gastrectomy using a standardized surgical technique and an established educational system. Scand J Surg. 2011;100(2):86-91.

472. Topart P, Becouarn G, Ritz P. Should biliopancreatic diversion with duodenal switch be done as single-stage procedure in patients with BMI >=50 kg/m2? Surg Obes Relat Dis. 2010;6(1):59-63.

473. Torng PL, Hwang JS, Huang SC, et al. Effect of simultaneous morcellation in situ on operative time during laparoscopic myomectomy. Hum Reprod. 2008;23(10):2220-2226.

474. Tse E, Knaus R. Laparoscopic radical prostatectomy - results of 200 consecutive cases in a Canadian medical institution. Can J Urol. 2004;11(2):2172-2185.

475. Tsivian M, Ulusoy S, Abern M, Wandel A, Sidi AA, Tsivian A. Renal Mass Anatomic Characteristics and Perioperative Outcomes of Laparoscopic Partial Nephrectomy: A Critical Analysis. J Endourol. 2012;26(10):1307-1313.

476. Tsuboi K, Gazallo J, Yano F, Filipi CJ, Mittal SK. Good training allows excellent results for laparoscopic Nissen fundoplication even early in the surgeon's experience. Surg Endosc. 2010;24(11):2723-2729.

477. Turk I, Deger S, Winkelmann B, Schonberger B, Loening SA. Laparoscopic radical prostatectomy. Technical aspects and experience with 125 cases. Eur Urol. 2001;40(1):46-52.

478. Usui S, Inoue H, Yoshida T, Kudo SE, Iwai T. Preliminary report of multi degrees of freedom forceps for endoscopic surgery. Surg Laparosc Endosc Percutan Tech. 2004;14(2):66-72.

479. Uyama I, Kanaya S, Ishida Y, Inaba K, Suda K, Satoh S. Novel integrated robotic approach for suprapancreatic D2 nodal dissection for treating gastric cancer: Technique and initial experience. World J Surg. 2012;36(2):331-337.

480. Valeri A, Borrelli A, Presenti L, et al. The influence of new technologies on laparoscopic adrenalectomy: our personal experience with 91 patients. Surg Endosc. 2002;16(9):1274-1279.

481. Van Bruwaene S, De Win G, Miserez M. How much do we need experts during laparoscopic suturing training? Surg Endosc. 2009;23(12):2755-2761.

482. van Det MJ, Meijerink WJ, Hoff C, Middel LJ, Koopal SA, Pierie JP. The learning effect of intraoperative video-enhanced surgical procedure training. Surg Endosc. 2011;25(7):2261-2267.

483. Vanek VW, Rhodes R, Dallis DJ. Results of laparoscopic versus open cholecystectomy in a community hospital. Southern Med J. 1995;88(5):555-566.

484. Vasdev N, Kass-Iliyya A, Patel A, et al. Developing a laparoscopic radical prostatectomy service: Defining the learning curve. J Endourol. 2012;26(7):903-910.

485. Verdaasdonk EG, Stassen LP, Schijven MP, Dankelman J. Construct validity and assessment of the learning curve for the SIMENDO endoscopic simulator. Surg Endosc. 2007;21(8):1406-1412.

486. Vickers A, Bianco F, Serio A, et al. The Surgical Learning Curve for Prostate Cancer Control After Radical Prostatectomy. J Natl Cancer Inst. 2007;99:1171–1177.

487. Vidovszky TJ, Smith W, Ghosh J, Ali MR. Robotic cholecystectomy: learning curve, advantages, and limitations. J Surg Res. 2006;136(2):172-178.

488. Vigano L, Laurent A, Tayar C, Tomatis M, Ponti A, Cherqui D. The learning curve in laparoscopic liver resection: improved feasibility and reproducibility. Ann Surg. 2009;250(5):772-782.

489. Viney R, Gommersall L, Zeif J, Hayne D, Shah ZH, Doherty A. Ultrasensitive prostate specific antigen assay following laparoscopic radical prostatectomy--an outcome measure for defining the learning curve. Ann R Coll Surg Engl. 2009;91(5):399-403.

490. Voitk A, Joffe J, Alvarez C, Rosenthal G. Factors contributing to laparoscopic failure during the learning curve for laparoscopic Nissen fundoplication in a community hospital. J Laparoendosc Adv Surg Tech A. 1999;9(3):243-248.

491. Voitk AJ. The learning curve in laparoscopic inguinal hernia repair for the community general surgeon. Can J Surg. 1998;41(6):446-450.

492. Voitk AJ, Tsao SG, Ignatius S. The tail of the learning curve for laparoscopic cholecystectomy. Am J Surg. 2001;182(3):250-253.

493. von Strauss und Torney M, Dell-Kuster S, Mechera R, Rosenthal R, Langer I. The cost of surgical training: analysis of operative time for laparoscopic cholecystectomy. Surg Endosc. 2012;26(9):2579-2586.

494. Von Websky MW, Vitz M, Raptis DA, Rosenthal R, Clavien PA, Hahnloser D. Basic laparoscopic training using the Simbionix LAP Mentor: Setting the standards in the novice group. J Surg Educ. 2012;69(4):459-467.

495. Vossen C, Van Ballaer P, Shaw RW, Koninckx PR. Effect of training on endoscopic intracorporeal knot tying. Hum Reprod. 1997;12(12):2658-2663.

496. Wada H, Kimura T, Kawabe A, et al. Laparoscopic transabdominal preperitoneal inguinal hernia repair using needlescopic instruments: a 15-year, single-center experience in 317 patients. Surg Endosc. 2012;26(7):1898-1902.

497. Wadstrom J, Biglarnia A, Gjertsen H, Sugitani A, Fronek J. Introducing hand-assisted retroperitoneoscopic live donor nephrectomy: learning curves and development based on 413 consecutive cases in four centers. Transplantation. 2011;91(4):462-469.

498. Wang LH, Liu B, Wu ZJ, et al. Transumbilical Laparoendoscopic Single-Site Surgery: More Than 1-Year Experience in Radical Nephrectomy and Its Learning Curve Study. J Endourol. 2011;25(12):1859-1865.

499. Wang W, Wei PL, Lee YC, Huang MT, Chiu CC, Lee WJ. Short-term results of laparoscopic mini-gastric bypass. Obes Surg. 2005;15(5):648-654.

500. Waters JA, Chihara R, Moreno J, Robb BW, Wiebke EA, George VV. Laparoscopic colectomy: does the learning curve extend beyond colorectal surgery fellowship? JSLS. 2010;14(3):325-331.

501. Watson DI, Baigrie RJ, Jamieson GG. A learning curve for laparoscopic fundoplication. Definable, avoidable, or a waste of time? Ann Surg. 1996;224(2):198-203.

502. Wauschkuhn CA, Schwarz J, Bittner R. Laparoscopic transperitoneal inguinal hernia repair (TAPP) after radical prostatectomy: is it safe? Results of prospectively collected data of more than 200 cases. Surg Endosc. 2009;23(5):973-977.

503. Weiner R, Blanco-Engert R, Weiner S, Matkowitz R, Schaefer L, Pomhoff I. Outcome after laparoscopic adjustable gastric banding - 8 years experience. Obes Surg. 2003;13(3):427-434.

504. Wijn R, Persoon MC, Schout BMA, Martens EJ, Scherpbier A, Hendrikx AJM. Virtual Reality Laparoscopic Nephrectomy Simulator Is Lacking in Construct Validity. J Endourol. 2010;24(1):117-122.

505. Windsor JA, Zoha F. The laparoscopic performance of novice surgical trainees - Testing for acquisition, loss, and reacquisition of psychomotor skills. Surg Endosc. 2005;19(8):1058-1063.

506. Winslow ER, Quasebarth M, Brunt LM. Perioperative outcomes and complications of open vs laparoscopic extraperitoneal inguinal hernia repair in a mature surgical practice. Surg Endosc. 2004;18(2):221-227.

507. Winter JM, Talamini MA, Stanfield CL, et al. Thirty robotic adrenalectomies - A single institution's experience. Surg Endosc. 2006;20(1):119-124.

508. Wishner JD, Baker JW, Jr., Hoffman GC, et al. Laparoscopic-assisted colectomy. The learning curve. Surg Endosc. 1995;9(11):1179-1183.

509. Wolfe BM, Gardiner BN, Leary BF, Frey CF. Endoscopic cholecystectomy. An analysis of complications. Arch Surg. 1991;126(10):1192-1196.

510. Wolthuis AM, Iudicello A, Penninckx F, D'Hoore A. Early experience with elective single-port laparoscopic appendectomy and cholecystectomy in day-case surgery. Acta Chir Belg. 2011;111(5):315-318.

511. Wyler SF, Ruszat R, Straumann U, et al. Short-, intermediate-, and long-term quality of life after laparoscopic radical prostatectomy--does the learning curve of LRP have a negative impact on patients' quality of life? Eur Urol. 2007;51(4):1004-1012.

512. Yasuda K, Shiraishi N, Inomata M, Fujii K, Sonoda K, Kitano S. Learning curve for laparoscopy-assisted distal gastrectomy. Dig Surg. 2003;15(4):280-283.

513. Yeko T, Villa A, Parsons A, Maroulis G. Laparoscopic Treatment of Ectopic Pregnancy. J Reprod Med. 1994;39(11):854-856.

514. Yohannes P, Rotariu P, Pinto P, Smith AD, Lee BR. Comparison of robotic versus laparoscopic skills: is there a difference in the learning curve? Urology. 2002;60(1):39-45.

515. Yong DZ, Tsivian M, Zilberman DE, Ferrandino MN, Mouraviev V, Albala DM. Predictors of prolonged operative time during robot-assisted laparoscopic radical prostatectomy. Bju International. 2011;107(2):280-282.

516. Yoo CH, Kim HO, Hwang SI, Son BH, Shin JH, Kim H. Short-term outcomes of laparoscopic-assisted distal gastrectomy for gastric cancer during a surgeon's learning curve period. Surg Endosc. 2009;23(10):2250-2257.

517. Yu SC, Clapp BL, Lee MJ, Albrecht WC, Scarborough TK, Wilson EB. Robotic assistance provides excellent outcomes during the learning curve for laparoscopic Roux-en-Y gastric bypass: results from 100 robotic-assisted gastric bypasses. Am J Surg. 2006;192(6):746-749.

518. Yun HK, Kwon JB, Cho SR, Kim JS. Early Experience with Laparoscopic Retropubic Simple Prostatectomy in Patients with Voluminous Benign Prostatic Hyperplasia (BPH). Korean J Urol. 2010;51(5):323-329.

519. Zacharoulis D, O'Boyle CJ, Sedman PC, Brough WA, Royston CMS. Laparoscopic fundoplication: A 10-year learning curve. Surg Endosc. 2006;20(11):1662-1670.

520. Zacharoulis D, Sioka E, Papamargaritis D, et al. Influence of the learning curve on safety and efficiency of laparoscopic sleeve gastrectomy. Obes Surg. 2012;22(3):411-415.

521. Zaninotto G, Costantini M, Molena D, et al. Treatment of esophageal achalasia with laparoscopic Heller myotomy and Dor partial anterior fundoplication: prospective evaluation of 100 consecutive patients. J Gastrointest Surg. 2000;4(3):282-289.

522. Zhang X, Wang B, Ma X, et al. Laparoscopic adrenalectomy for beginners without open counterpart experience: initial results under staged training. Urology. 2009;73(5):1061-1065.

523. Zhang XQ, Tanigawa N. Learning curve of laparoscopic surgery for gastric cancer, a laparoscopic distal gastrectomy-based analysis. Surg Endosc. 2009;23(6):1259-1264.

524. Zhou M, Tse S, Derevianko A, Jones DB, Schwaitzberg SD, Cao CG. Effect of haptic feedback in laparoscopic surgery skill acquisition. Surg Endosc. 2012;26(4):1128-1134.

525. Zingg U, Rosella L, Guller U. Population-based trend analysis of laparoscopic Nissen and Toupet fundoplications for gastroesophageal reflux disease. Surg Endosc. 2010;24(12):3080-3085.