Our respected readers:

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Editorial office of *Mini-invasive Surgery*

Contact us:

Jane Lee

Managing Editor

jane@misjournal.net

editorialoffice@misjournal.net

Mini-invasive Surgery

Content

Mini-invasive Surgery

Laparoscopic Surgery

1. Original Article

Laparoscopic Roux-en-Y gastric bypass for excess weight and diabetes: a multicenter retrospective cohort study in China

HTML PDF VIDEO

Copy here to cite this article:

Yang W, Zhu S, Cheng Z, Zhang N, Wu L, Chen Y, Yang J, Yu S,
Yang T, Ding D, Waggoner JR, Schwiers ML, Fegelman EJ, Wang C. Laparoscopic Roux-en-Y gastric bypass for excess weight and diabetes: a multicenter retrospective cohort study in China. *Mini-invasive Surg* 2021;5:11.
http://dx.doi.org/10.20517/2574-1225.2021.06

Abstract

Aim: The aims of this study were to better understand the outcomes of Roux-en-Y gastric bypass (RYGB) surgery in patients across multiple hospitals in China along with patients with type 2 diabetes mellitus (T2DM) and to explore the potential preoperative predictors of diabetes outcomes after RYGB.

Methods: This was a retrospective cohort study in Chinese patients who underwent laparoscopic RYGB at five Chinese hospitals from April 2009 to December 2014 and returned for follow-up approximately one-year post-surgery. The STROCSS guideline checklist was applied.

Results: In total, 130 patients underwent RYGB: 85 males and 45 females; age, 43.4 ± 11.3 years; and preoperative body mass index (BMI), 33.1 ± 9.0 kg/m2. Of those, 103 (79.2%) had T2DM duration of 6.6 ± 4.7 years and pre-RYGB HbA1c of 8.1 ± 1.9%. Among the patients with T2DM, glycemic control (HbA1c < 7.0%) increased from 28.7% before surgery to 79.3% at 12 months post-procedure, with a concurrent reduction in the use of anti-hyperglycemic agents, including a reduction in insulin requirement from 55.4% to 27.0%. The percentage of excess weight loss was -42.8 ± 44.2%. Among 71 patients with T2DM and data about remission status, 14 (19.7%)

achieved T2DM remission at 12 months post-surgery. Age and duration of T2DM were lower in the remission group, while baseline BMI and weight were higher compared with the non-remission group.

Conclusion: RYGB may be effective for weight loss and T2DM control in Chinese patients, and outcomes are consistent with the literature in Western populations. Younger patients with T2DM and with a higher BMI pre-surgery and shorter duration of T2DM were more likely to achieve T2DM remission.

2. Perspective

Has robotic prostatectomy determined the fall of the laparoscopic approach?

HTML **PDF**

Cite this article: Hayes J, Vasdev N, Dasgupta P. Has robotic prostatectomy determined the fall of the laparoscopic approach?. *Mini-invasive Surg* 2021;5:56. http://dx.doi.org/10.20517/2574-1225.2021.126

Abstract

Robotic-assisted laparoscopic prostatectomy (RALP) has revolutionised the surgical management of localised prostate cancer in the modern era. The surgeon is provided with greater precision, more versatile dexterity and an immersive three-dimensional visual field. The impressive hardware facilitates, for example, the dissection of the peri-prostatic fascia, whilst preserving the neurovascular bundle, or the suturing of the vesico-urethral anastomosis. Prior to RALP, laparoscopic radical prostatectomy (LRP) represented the first venture into the minimally invasive world. Associated with more cumbersome ergonomics, LRP has a significant learning curve compared with the robotic approach. There has been a paucity, until recently, of high-quality literature comparing outcomes between the two operations, including the attainment of the Pentafecta of survivorship: biochemical recurrence-free, continence, potency, no postoperative complications and negative surgical margins.

3. Review

Large hiatal hernia: minimizing early and long-term complications after minimally invasive repair

Full-Text PDF

Copy here to cite this article: Ugliono E, Rebecchi F, Seno E, Morino M. Large hiatal hernia: minimizing early and long-term complications after minimally invasive repair. *Mini-invasive Surg* 2021;5:2. http://dx.doi.org/10.20517/2574-1225.2020.93

Abstract

Paraesophageal Hernia (PEH) is the protrusion of the stomach and/or other abdominal viscera into the mediastinum due to an enlargement of the diaphragmatic hiatus. The treatment of PEH is challenging: On the one hand, watchful waiting carries the risk of developing acute life-threatening complications requiring an emergency operation. On the other hand, elective repair of PEH has non-negligible morbidity and mortality rates, also due to the characteristics of PEH affected patients, who are generally elder and frail. A review of the literature is presented to highlight strategies that can be adopted to minimize early and long-term complications after PEH surgical repair. The laparoscopic approach has been shown to provide reduced hospital stay, postoperative morbidity and mortality, and overall costs compared to traditional open surgery, and it is currently considered the standard approach both to elective and emergency operations. The evidence suggests that strict adherence to surgical principles, such as hernia sac excision, extended mediastinal dissection of the esophagus, and tension-free crural repair with or without mesh are mandatory to achieve optimal surgical outcomes and reduce PEH recurrence rate. Different shapes, materials, and techniques of prosthetic repair and the use of relaxing incisions have been proposed, but long-term data are lacking, and no conclusions can be drawn regarding the ideal method of crural closure. When a short esophagus is recognized despite extensive mediastinal dissection, esophageal lengthening procedures are indicated. Systematic

addition of a fundoplication is strongly encouraged, for either treating gastroesophageal reflux or reducing recurrence rate.

4. Review

Robotic vs. laparoscopic major hepatectomy

HTML **PDF**

Cite this article: Ziogas IA, Tohme S, Geller DA. Robotic vs. laparoscopic major hepatectomy. *Mini-invasive Surg* 2020;4:69.

http://dx.doi.org/10.20517/2574-1225.2020.63

Abstract

The introduction of laparoscopic technology and surgical robots in hepatobiliary surgery in the 1990s and 2000s, respectively, has dramatically revolutionized the field. Even though laparoscopic and robotic major hepatectomy was slower to adopt compared to minimally-invasive minor hepatectomy, the number of major hepatectomies performed with both approaches worldwide has significantly increased and is still rising. Despite the few comparative studies between laparoscopic and robotic major hepatectomy, most studies are focused on describing the procedures or reporting the outcomes of each method, either separately, or mixed with minor hepatectomies. Based on the available data, the direct comparison between the two techniques has shown that when robotic major hepatectomy is performed by experienced hepatobiliary surgeons in high-volume centers, it can lead to similar operating times, estimated blood loss, hospital length of stay, complication and mortality rates compared to its laparoscopic counterpart. The likelihood of achieving a margin-negative resection in cancer patients, as well as long-term disease-free and overall-survival are comparable between the groups. However, broader adoption of the robotic approach might be a hurdle in low-volume centers due to the high fixed capital and annual maintenance cost of the surgical robot.

5. Review

Comparison of open and laparoscopic inguinal hernia repair

HTML PDF

Cite this article: Burton V, Perez AJ. Comparison of open and laparoscopic inguinal hernia repair. *Mini-invasive Surg* 2021;5:26.

http://dx.doi.org/10.20517/2574-1225.2021.26

Abstract

Inguinal hernia repair is one of the most commonly performed general surgery operations. Throughout the years there have been many variations and advancements, including open and laparoscopic techniques, to accomplish the same task of reducing herniated contents and preventing groin hernia recurrence. An array of factors contributes to deciding which operative technique is the best approach to managing a patient presenting with an inguinal hernia. Published data vary due to the heterogeneity of techniques compared, patient presentations, and surgeon expertise. In experienced hands, laparoscopic repair results in a quicker return to work and reduced postoperative pain. Patients with bilateral groin hernias, female patients with groin hernias, and patients with recurrent hernias after prior anterior mesh repair should be offered a laparoscopic preperitoneal mesh approach, when surgeons have the appropriate skill set and experience. We find that open and laparoscopic techniques of inguinal hernias can both achieve exceptional outcomes when applied to the right patient population. To know one's own capabilities, it is beneficial for surgeons to have baseline familiarity of the multitude of methods of repair, become proficient in both mesh and mesh-free techniques as well as open and laparoscopic techniques to best tailor the surgery to the patient and the clinical circumstances, and follow personal outcomes to evaluate individual results.

6. Case Report

Laparoscopic mesh repair of strangulated groin hernias requiring bowel resection

HTML PDF

Cite this article: Smith A, Bilezikian J, Hope W, Fox S. Laparoscopic mesh repair of strangulated groin hernias requiring bowel resection. *Mini-invasive Surg* 2021;5:34. http://dx.doi.org/10.20517/2574-1225.2021.44

Abstract

No robust data support laparoscopic mesh repair in strangulated groin hernias. This is a retrospective review over 6 years of a single surgeon's experience treating strangulated groin hernias using the laparoscopic trans-abdominal preperitoneal mesh repair with concomitant bowel resection through a periumbilical incision. Nine patients presented with incarceration of 2 inguinal and 7 femoral hernias. The median age was 83 years (IQR 68, 85). One patient was male, all were Caucasian, and 5 were ASA 3-4. The median hospital length of stay was 6 days (IQR 4, 7). There were no known hernia recurrences or mesh infections at 30 days. Laparoscopic repair necessitates mesh placement, and doing so in a clean-contaminated setting is acceptably low risk. Laparoscopy permits better assessment of bowel viability compared to open repair and enables mesh coverage of both the inguinal and femoral spaces.

7. Editorial

What role does hand-assistance have in minimally invasive pancreatic surgery?

HTML PDF

Cite This Article: Donisi G, Zerbi A. What role does hand-assistance have in minimally invasive pancreatic surgery?. *Mini-invasive Surg* 2021;5:38. http://dx.doi.org/10.20517/2574-1225.2021.55

8. Perspective

Minimally invasive liver resection in Japan: is the robot necessary?

HTML PDF

Cite this article: Ishizawa T, Hasegawa K. Minimally invasive liver resection in Japan: is the robot necessary?. *Mini-invasive Surg* 2021;5:52.
http://dx.doi.org/10.20517/2574-1225.2021.81

Abstract

Robot-assisted hepatectomy (RAH) is rarely indicated in Japan because of the lack of reimbursement from the national health insurance system. Instead, laparoscopic hepatectomy has been approved for all hepatectomy procedures except resections requiring biliary reconstruction. An obvious advantage of RAH over laparoscopic hepatectomy is the fact that surgeons can use multi-articulated surgical devices, which may facilitate resection of superior/posterior hepatic regions, hilar dissection, biliary reconstruction, and hepatic segmentation by fluorescence imaging. With the accumulation of evidence supporting the use of robotic surgical devices in particular situations of hepatectomy, RAH will become more commonly indicated in Japan under the existing nationwide reporting system and board certification systems to assure surgical safety.

9. Review

Minimally invasive surgery for gallbladder cancer at an expert center

HTML PDF

Cite this article: Lee JS, Han HS, Yoon YS, Cho JY, Lee HW, Lee B, Kim M, Jo Y. Minimally invasive surgery for gallbladder cancer at an expert center. *Mini-invasive Surg* 2021;5:57. http://dx.doi.org/10.20517/2574-1225.2021.139

Abstract

In this article, we reviewed the techniques and outcomes of minimally invasive surgery for gallbladder cancer performed at an expert center. The techniques of

laparoscopic extended cholecystectomy with the short- and long-term outcomes at our center were described. The short- and long-term survival outcomes of laparoscopic extended cholecystectomy are comparable to open surgery. Laparoscopic surgery is a safe, effective alternative for open surgery in the treatment of gallbladder cancer. The benefits of robotic surgery should be proven with further research.

10. Case Report

Clostridium difficile infection secondary to ileostomy closure

HTML PDF

Cite this article:Chouillard E, Chouillard MA, El Kary N, De Simone B, Gumbs AA. Clostridium difficile infection secondary to ileostomy closure. *Mini-invasive Surg* 2021;5:9. http://dx.doi.org/10.20517/2574-1225.2020.108

Abstract

Protective ileostomy may be a risk factor for the development of Clostridium difficile (CD) infection (CDI). In the postoperative period signs of CDI may be particularly difficult to differentiate from intra-abdominal sepsis. Presented here are 2 cases that developed CDI after ileostomy reversal. Two patients who underwent low anterior resections after neoadjuvant chemoradiation with protective ileostomy developed fever, leukocytosis and elevated serum C-reactive protein (CRP) levels. The first patient also had negative CD stool toxins and his signs were so severe that he underwent a negative diagnostic laparoscopy and re-creation of ileostomy. The second patient who presented in a similar fashion was more fortunate in that her CD stool toxin was positive and she was treated successfully with oral vancomycin. CDI after ileostomy reversal after low anterior resection can be difficult to diagnose. In the first patient, the situation was so misleading that diagnostic laparoscopy was required. Outcome was eventually favorable in both cases. CDI must be high on the list of differential diagnoses for febrile patients with a leukocytosis and elevated CRP level even in the setting of negative CD stool toxins. Prophylactic intravenous

metronidazole and/or vancomycin enemas should be considered prior to colorectal surgery when a protective ileostomy is likely.

11. Case Report

Laparoscopic cholecystectomy with indocyanine green fluorescence in patient with situs inversus totalis

HTML PDF VIDEO

Cite this article: Tirelli F, Grieco M, Biondi A, Belia F, Persiani R. Laparoscopic cholecystectomy with indocyanine green fluorescence in patient with situs inversus totalis. *Mini-invasive Surg* 2021;5:15. http://dx.doi.org/10.20517/2574-1225.2021.04

Abstract

Situs Viscerum Inversus (SVI) is a rare autosomal recessive disease. Because of this particular anatomy, it could be challenging for the surgeon to perform any abdominal procedure, including laparoscopic cholecystectomy. In these situations, indocyanine green fluorescence cholangiography can be essential. A 29-year-old female with documented situs viscerum inversus totalis underwent laparoscopic cholecystectomy with a four-trocar technique. Switching the vision to the near-infrared camera, which elicited the indocyanine green molecules, the surgeon could easily identify the common bile duct and the cystic duct. Switching back to the normal vision, the operator completed the dissection. The described procedure is still challenging due to the “mirror effect” and the uncommon position of the surgical instruments, especially for right-handed surgeons. Indocyanine green fluorescence angiography can help the surgeon identify the structures in cases of non-regular anatomy such as this.

12. Technical Note

Mastering TAPP inguinal hernia repair-tips and tricks

HTML PDF VIDEO

Cite this article: Ielpo B. Mastering TAPP inguinal hernia repair-tips and

tricks. *Mini-invasive Surg* 2021;5:10. http://dx.doi.org/10.20517/2574-1225.2021.01

Abstract

Laparoscopic minimally invasive surgery is increasing, and in the last decade some modifications of the technique have been introduced, especially concerning mesh type, fixation, and peritoneal closure, which are herein individually discussed. Currently, a standard unique technique is still missing, and modifications of the technique might be useful in challenging cases, such as the use of fibrine glue to both fix the mesh and close the peritoneum. The aim of this technical note essay is to discuss and update some tips and tricks as well as recent modifications of the trans-abdominal preperitoneal (TAPP) repair of groin hernia.

13. Case Report

Laparo-endoscopic single site hysterectomy in renal transplant women using conventional laparoscopic instruments

HTML PDF

Cite this article: Goh WA, Tan EMX, Nadarajah R. Laparo-endoscopic single site hysterectomy in renal transplant women using conventional laparoscopic instruments. *Mini-invasive Surg* 2021;5:30. http://dx.doi.org/10.20517/2574-1225.2021.42

Abstract

Kidney transplant recipients are at a higher risk of developing cancers as compared to the general population. This is of concern when it comes to gynaecological pathologies because the transplanted kidney lies in the pelvic region, in close proximity to the diseased organ. The successful use of laparo-endoscopic single site surgery with conventional laparoscopic instruments for total hysterectomy and bilateral salpingo-oophorectomy in three patients with prior renal transplantation is reported.

Mini-invasive Surgery

14. Original Article

Single-port laparoscopic myomectomy in the virgin womb - a retrospective analysis of 31 consecutive cases

HTML PDF

Cite this article: Tang FH. Single-port laparoscopic myomectomy in the virgin womb - a retrospective analysis of 31 consecutive cases. *Mini-invasive Surg* 2020;4:24. http://dx.doi.org/10.20517/2574-1225.2019.60

Abstract

Aim: We aimed to evaluate the feasibility of single-port laparoscopic myomectomy in the virgin womb.

Methods: A retrospective chart review of 31 consecutive cases between November 2017 and October 2019 performed by a single surgeon was performed.

Results: The mean age of patient was 50.10 ± 7.79 years old. The mean BMI was 23.55 ± 4.36 kg/m2. The mean number of myoma in single patient was 3.84 ± 2.45 pieces. The mean maximum diameter of myoma in single patient was 11.24 ± 3.27 cm. The mean operation time was 182.32 ± 52.39 min. The mean blood loss was 231.77 ± 238.90 mL. The Visual Analogue Score (VAS) of pain when immediately arriving at the ward after operation was 2.32 ± 1.60. The VAS after 24 h dropped to 1.23 ± 1.43. In total, 119 myomas were removed in our study. There were 15 (48.4%) women with more than four myomas. Fifteen (48.4%) women had more than two myomas that were > 5 cm. There were 58 (48.74%) intramural myomas, with mean diameter of 6.72 ± 4.41 cm. Fifty-two (43.70%) subserous type myoma were removed with mean diameter 2.58 ± 3.35 cm. Posterior myoma accounted for five (4.20%) pieces with mean diameter of 9.30 ± 4.49 cm. The broad ligament type myoma accounted for four pieces (3.36%), and the mean diameter was 3.74 ± 1.87 cm. There were 51 (42.9%) myomas > 5 cm in diameter. Among the different types of myoma, there were 36 (62.1%) intramural type and 6 (11.5%) subserous type, and all posterior and broad ligament type were > 5 cm in diameter. The blood loss and operation time showed no

relationship to myoma number. There were differences in blood loss (P = 0.0359) and operation time (P = 0.0537) based on the maximum diameter of myoma. No learning curve was noted in the cumulative sum control chart analysis of the 31 consecutive cases.

Conclusion: In our 31 consecutive cases, the operation time, blood loss, and postoperative VAS score were all comparable to the previously published literature for single-port laparoscopic myomectomy. It is feasible for virgin women with symptomatic myoma to receive single-port laparoscopic myomectomy.

15. Review

Robotic or laparoscopic surgery for rectal cancer - which is the best answer? a comprehensive review of non-oncological outcomes and learning curve

Full-Text PDF

Copy here to cite this article: Kavalukas SL, Ghuman A, Sharp SP, Wexner SD. Robotic or laparoscopic surgery for rectal cancer - which is the best answer? a comprehensive review of non-oncological outcomes and learning curve. Mini-invasive Surg 2020;4:61. http://dx.doi.org/10.20517/2574-1225.2020.71

Abstract

Much effort has been spent evaluating the difference between robotic and laparoscopic surgery platforms for rectal cancer. There is a plethora of literature comparing outcomes for intraoperative events, postoperative complications, long term outcomes, cost, and learning curve. The data are conclusive regarding the higher cost of robotic surgery compared to laparoscopic surgery. This article is a comprehensive review of the available literature regarding intraoperative and postoperative outcomes. For practically all parameters evaluated, there are no significant differences between the two platforms. The ultimate decision on whether to perform robotic vs. laparoscopic surgery should be based on surgeon preference and familiarity with equipment, as well as local resources.

16. Review

Robotic or laparoscopic surgery for rectal cancer - which is the best answer? A comprehensive review of oncological outcomes

HTML PDF

Cite this article: Ghuman A, Kavalukas S, Wexner SD. Robotic or laparoscopic surgery for rectal cancer - which is the best answer? A comprehensive review of oncological outcomes. *Mini-invasive Surg* 2020;4:84.
http://dx.doi.org/10.20517/2574-1225.2020.88

Abstract

Treatment of rectal cancer is ever evolving with the introduction of newer surgical technologies and multimodal treatment approach. The literature evaluating the various surgical treatment options with regards to operative and nonoperative outcomes is abundant. This is a comprehensive review focused on oncological outcomes of rectal cancer resection performed robotically or laparoscopically. Based on the current literature available, there is no significant difference in total mesorectal excision completeness, lymph node harvest, positive circumferential resection margin, or proximal resection margin between robotic and laparoscopic approaches for rectal resection. Selection of surgical approach should not be based on pathological outcomes as they are equivalent.

17. Review

Minimally invasive right colectomy - from conventional laparoscopic resection to robotic-assisted surgery: a narrative review

Full-Text PDF

Copy here to cite this article: Moroni P, Payá-Llorente C, Lauka L, Reitano E, Memeo R, Gavriilidis P, Brunetti F, Martínez-Pérez A. Minimally invasive right colectomy - from conventional laparoscopic resection to robotic-assisted surgery: a

narrative review. *Mini-invasive Surg* 2019;3:36. http://dx.doi.org/10.20517/2574-1225.2019.34

Abstract

Robotic-assisted abdominal surgery was introduced with the aim of overcoming the drawbacks of the conventional laparoscopic approach. The present narrative review focuses on the comparison between laparoscopic and robotic-assisted approaches for right colectomy (RC) regarding short- and long-term outcomes, costs, and learning curve. The main technical aspects related to the use of robotic assistance for this specific procedure are further discussed. Minimally invasive RC is considered technically challenging due to the particularities of the right and middle colic vascular anatomy. Robotic RC is not yet widespread due to its high cost and longer operating time. However, its use may result in advantages regarding short-term clinical outcomes, and it facilitates the acquisition of basic surgical skills by speeding up the learning curve of minimally invasive colorectal surgery.

18. Technical Note

Advances and understanding pitfalls of laparoscopic transhiatal esophagectomy with en bloc mediastinal lymph node dissection

Full-Text PDF

Copy here to cite this article: Shiozaki A, Fujiwara H, Konishi H, Shimizu H, Kudou M, Arita T, Kosuga T, Morimura R, Kuriu Y, Ikoma H, Kubota T, Okamoto K, Otsuji E. Advances and understanding pitfalls of laparoscopic transhiatal esophagectomy with en bloc mediastinal lymph node dissection. *Mini-invasive Surg* 2020;4:50. http://dx.doi.org/10.20517/2574-1225.2020.31

Abstract

We began performing mediastinal lymph node dissection using the laparoscopic transhiatal approach in 2009. Following the initiation of the single-port

mediastinoscopic cervical approach in 2014, we developed a technique for transmediastinal radical esophagectomy without a thoracic approach. We herein describe our surgical procedures for *en bloc* mediastinal lymph node dissection by the laparoscopic transhiatal approach with a focus on pitfalls. We opened the esophageal hiatus and the working space was secured using long retractors. During division of the right crus of the diaphragm, we made efforts to avoid damaging the left hepatic vein and inferior vena cava. Dissection of the posterior plane of the pericardium was extended to the cranial side, and the bilateral inferior pulmonary veins were identified. To avoid misorientation, the posterior plane was initially extended along the long axis of the esophagus. The anterior and posterior sides of the posterior mediastinal lymph nodes were then both dissected. These lymph nodes were lifted in a sheet-like form and then cut along the borderline of the left mediastinal pleura. The right side of the mediastinal lymph nodes was then dissected. To avoid damaging the arch of the azygos vein, it was identified at the dorsal side of the right main bronchus prior to lymph node dissection. This procedure decreased the total operative time, total operative bleeding, and postoperative respiratory complications without reducing the quality of lymphadenectomy. In conclusion, the procedure described herein resulted in a good surgical view and safe *en bloc* mediastinal lymph node dissection. A detailed understanding of mediastinal 3D anatomy and specific pitfalls is crucial for the successful use of this approach.

19. Original Article

Totally laparoscopic total gastrectomy: challenging but feasible: a single center case series

Full-Text PDF

Copy here to cite this article: Mazzola M, Gualtierotti M, De Martini P, Ber toglio CL, Morini L, Achilli P, Zironda A, Ferrari G. Totally laparoscopic tota l gastrectomy: challenging but feasible: a single center case series. *Mini-invasiv*

e Surg 2019;3:12. http://dx.doi.org/10.20517/2574-1225.2019.05

Abstract

Aim: To report the initial monocentric experience of totally laparoscopic total gastrectomy, assessing its feasibility and safety, especially relating to the challenging step of esophago-jejunal (E-J) reconstruction.

Methods: All consecutive patients, underwent laparoscopic total gastrectomy for gastric cancer with curative intent, between January 2017 and June 2018 at our institution, were considered. Data of the selected patients was retrieved from a prospectively collected database. Short and long term outcomes were analyzed.

Results: Ten patients underwent totally laparoscopic total gastrectomy with D2 lymphadenectomy and 4 of these had received preoperative chemotherapy; Two patients also received the lymphadenectomy of the station 10. E-J reconstruction consisted of hemi-double stapling technique with transorally inserted anvil in 1 case, side-to-side overlap anastomosis in 5 cases and end-to-side anastomosis in 4 cases. One patient experienced intraoperative complications needing conversion to laparotomy. Seven patients experienced postoperative complications, three of these were severe according to Dindo-Clavien classification. All the specimens had free proximal resection margins with R0 resection in all the cases. Average postoperative length of hospital stay was 10 days and no patients died during hospitalization. Median overall survival and disease-free survival were 15.5 and 12.5 months respectively.

Conclusion: Totally laparoscopic total gastrectomy is a feasible and safe option in the treatment of gastric cancer. The choice about the type of E-J reconstruction should be based on the single patient's features and on the dexterity of the surgeon who should be able to perform more than one option for a tailored approach.

20. Review

Laparoscopic lymph nodes dissection for advanced gastric cancer: the current status and the perspective

Full-Text PDF

Copy here to cite this article: Shimada M, Amaya S, Munemoto Y, Mitsui T. Laparoscopic lymph nodes dissection for advanced gastric cancer: the current status and the perspective. *Mini-invasive Surg* 2019;3:7.
http://dx.doi.org/10.20517/2574-1225.2018.78

Abstract

The laparoscopic gastrectomy (LG) with D2 lymph node dissection (LND) for advanced gastric cancer (AGC) have been widely done. However, the applicability to more advanced disease is still under debate. Actually, there are a lot of technical demands against D2 LND for AGC, e.g., total omentectomy, splenic hilar node dissection, and the management for bulky lymph nodes, etc. Recently, extensive research has been gradually performed in the field of LG for AGC and demonstrated that LG for AGC is a safe and feasible procedure with better short-term outcomes compared with open gastrectomy. Also, large-scaled phase III trials are ongoing, and their long-term outcomes are awaited the publication in the near future. LG with D2 LND by expert surgeons under the cautious indications could be acceptable treatment for locally AGC. On the other hand, we should keep searching for solutions to the technical or oncological issues, and long-term outcome of phase III study should be warranted for standard treatment. Robotic surgery, LG following neoadjuvant chemotherapy, or conversion therapy using LG for several stage IV patients may help us clear the technical hurdles, and may show survival advantages in the future.

21. Original Article

Laparoscopic vs. open distal gastrectomy for advanced gastric cancer in elderly patients: a retrospective study

Full-Text PDF

Copy here to cite this article: Yuu K, Tsuchihashi K, Toyoda S, Kawasaki M, Kameyama M. Laparoscopic vs. open distal gastrectomy for advanced gastric cancer

in elderly patients: a retrospective study. *Mini-invasive Surg* 2019;3:6. http://dx.doi.org/10.20517/2574-1225.2018.73

Abstract

Aim: It is unclear whether elderly patients with advanced gastric cancer can benefit from laparoscopic gastrectomy. This study aimed to compare the surgical and early postoperative outcomes of laparoscopic distal gastrectomy with those of open distal gastrectomy for advanced gastric cancer in elderly patients aged 75 years or older.

Methods: We retrospectively examined all elderly patients who underwent laparoscopic distal gastrectomy or open distal gastrectomy from October 2010 to October 2017 using prospectively collected data. Operative results, hospital courses, and survival rates were compared between the two groups.

Results: Distal gastrectomy was performed in 60 patients, laparoscopically in 20 and through open surgery in 40. The laparoscopic group had significantly lesser intraoperative blood loss (100 mL vs. 300 mL; $P < 0.001$) and shorter mean postoperative hospital stays (12 days vs. 23 days; $P < 0.001$). The overall 3-year survival rate was 50.1% in the laparoscopic group and 41.7% in the open group ($P = 0.531$).

Conclusion: Laparoscopic distal gastrectomy led to a faster return to a full diet and a shorter postoperative hospital stay in our study, and it was well tolerated by elderly patients with advanced gastric cancer.

22. Original Article

Intracorporeal hemi-hand-sewn technique for Billroth-I gastroduodenostomy after laparoscopic distal gastrectomy: comparative analysis with laparoscopy-assisted distal gastrectomy

Full-Text PDF

Copy here to cite this article: Ohmura Y, Suzuki H, Kotani K, Teramoto A.I

ntracorporeal hemi-hand-sewn technique for Billroth-I gastroduodenostomy after laparoscopic distal gastrectomy: comparative analysis with laparoscopy-assisted distal gastrectomy. *Mini-invasive Surg* 2019;3:4. http://dx.doi.org/10.20517/2574-1225.2018.69

Abstract

Aim: The purpose of this study was to evaluate the clinical feasibility and efficacy of the intracorporeal hemi-hand-sewn (IC-HHS) technique for Billroth-I gastroduodenostomy in comparison with extracorporeal total hand-sewn (EC-THS) anastomosis. We also examined the size of resected specimens in each procedure.

Methods: The number of enrolled cases of EC-THS and IC-HHS anastomosis groups were 85 and 110 cases, respectively. Perioperative data and the measured sizes of resected specimens were analyzed.

Results: Operation time in the IC-HHS group was significantly longer than the EC-THS group (234.8 min vs. 275.0 min, $P < 0.01$), whereas intraoperative blood loss was less in the IC-HHS group (48.4 mL vs. 25.4 mL, $P = 0.03$). There were no procedure-related complications in the IC-HHS group. The greater curvature of the EC-THS group was significantly shorter than the IC-HHS group (214.6 mm vs. 228.7 mm, $P < 0.01$). There was no correlation between body mass index (BMI) and the length of the greater curvature in the IC-HHS group ($r = 0.07$, $P = 0.47$), but in the EC-THS group, the length of the greater curvature tends to shorten as BMI increases ($r = -0.45$, $P < 0.01$).

Conclusion: IC-HHS technique for Billroth-I gastroduodenostomy revealed feasible with acceptable operation time and postoperative outcome. Another advantage of total laparoscopic distal gastrectomy that intracorporeal transection can facilitate is to ensure an adequate proximal margin, especially in obese middle gastric cancer patients.

23. Review

Current status of technique for Billroth-I anastomosis in totally laparoscopic distal gastrectomy for gastric cancer

Full-Text PDF

Copy here to cite this article: Zhang S, Fukunaga T. Current status of technique for Billroth-I anastomosis in totally laparoscopic distal gastrectomy for gastric cancer. *Mini-invasive Surg* 2019;3:2. http://dx.doi.org/10.20517/2574-1225.2018.64

Abstract

Several reconstruction techniques are possible after totally laparoscopic distal radical gastrectomy. An optimal technique of digestive tract reconstruction after distal gastrectomy has not yet been established. The ideal reconstruction should be not only for doctors but also for patients. Alimentary intake, satisfactory nutritional status and easy performing should be all considered. The aim of the study was to describe the different Billroth-I reconstruction techniques that can be proposed after totally laparoscopic distal radical gastrectomy.

24. Review

Laparoscopic resection of liver tumors

HTML PDF

Cite this article: Golhar A, Nikam V, Rao P, Mohanka R. Laparoscopic resection of liver tumors. *Mini-invasive Surg* 2019;3:9.
http://dx.doi.org/10.20517/2574-1225.2018.58

Abstract

Laparoscopic liver resection is technically challenging compared to open liver surgery and has a steep learning curve. Tumors located in the posterior sector, centrally, in proximity of major vascular pedicles or in a background of liver cirrhosis are surgically more complex with a higher risk of blood loss. There is emerging

consensus about indications for laparoscopic liver resection. While laparoscopic approach is considered standard for left lateral sectionectomy and minor laparoscopic liver resections in antero-lateral segments, with increasing experience, major resections, parenchyma sparing resections and even donor hepatectomies are being performed laparoscopically with good outcomes. Laparoscopic liver surgery is feasible and safe for well selected patients by well-trained surgeons with short-term advantages and non-inferior long-term oncologic outcomes.

25. Review

Minimally-invasive liver resection for liver tumors in children: a snapshot of the current landscape

HTML PDF

Cite this article: Cortes-Cerisuelo M, Berger M. Minimally-invasive liver resection for liver tumors in children: a snapshot of the current landscape. *Mini-invasive Surg* 2019;3:1. http://dx.doi.org/10.20517/2574-1225.2018.60

Abstract

Minimally-invasive liver resection (MILR) is a promising approach and has become a standard therapy option for a variety of indications, including liver tumors, in adults. Although minimally-invasive techniques are common practices in children, the usage and literature regarding MILR in children is scarce. In this article, we give an update on the current literature, share some of our own experience and give a future outlook of the potential benefits and shortcomings regarding MILR in children.

26. Case Report

Use of an intra-aortic balloon pump during laparoscopic sleeve gastrectomy

Full-Text PDF

Copy there to cite this article: Narvaez A, Perez JE, Castro M, Seymour KA. Use of an intra-aortic balloon pump during laparoscopic sleeve gastrectomy. *Mini-invasive*

Surg 2020;4:31. http://dx.doi.org/10.20517/2574-1225.2020.22

Abstract

Heart transplant is the primary treatment for end-stage heart failure; however, morbid obesity limits candidacy. Bariatric surgery performed in patients with advanced heart failure improves eligibility for heart transplantation. This is the first report of an intra-aortic balloon pump used during laparoscopic sleeve gastrectomy. A patient with morbid obesity and non-ischemic cardiomyopathy was referred for weight loss surgery prior to evaluation for heart transplantation. An intra-aortic balloon pump was placed for aggressive diuresis and cardiovascular support during laparoscopic sleeve gastrectomy. The patient did not suffer any complications or require readmission. The use of an intra-aortic balloon pump as a mechanical circulatory system provided a safe laparoscopic sleeve gastrectomy in a patient with advanced heart failure.

27. Review

Laparoscopic ablative techniques

HTML PDF

Cite this article: Silvestri T, de Concilio B, Zeccolini G, Celia A. Laparoscopic ablative techniques. *Mini-invasive Surg* 2019;3:5.
http://dx.doi.org/10.20517/2574-1225.2018.67

Abstract

Ablative techniques (AT) offer a combination of nephron-sparing and minimally invasive approaches. AT include different options and cryoablation (CA) and radiofrequency ablation (RFA) have been relatively safe and traditionally can be either performed laparoscopically or percutaneously. CA and RFA have emerged as a leading option for renal ablation, and compared with surgical techniques they offer benefits in preserving renal function with fewer complications, shorter hospitalization

times, and allow for quicker convalescence. A mature dataset exists at this time, with intermediate and long-term follow up data available. Generally, laparoscopic access was the first technique used in the past, and typically for anterior and lateral mass. Afterwards, with the improvements in imaging and percutaneous techniques, laparoscopic approaches are progressively decreased and currently limited in few lesions and in relation with the surgeon's and center's experience. Nevertheless, laparoscopic CA and RFA could be useful techniques and currently, recommendations as a first-line therapy are made at this time in limited populations, including elderly patients, patients with multiple comorbidities, and those with imperative indications of a nephron sparing surgery. As more data emerge on oncologic efficacy, and technical experience continue to improve, the application of AT will likely be extended in future treatment guidelines and laparoscopic approaches will be a valid option in the era of tailored therapy.