1. Adv Surg. 2015;49:143-56. doi: 10.1016/j.yasu.2015.03.003. Epub 2015 Jun 25.

Laparoscopic Pancreaticoduodenectomy: Is It an Effective Procedure for Pancreatic Ductal Adenocarcinoma?

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2. Surg Endosc. 2013 Dec;27(12):4449-56. doi: 10.1007/s00464-013-3127-9. Epub 2013 Aug 16.

Effect of bariatric surgery on oncologic outcomes: a systematic review and meta-analysis.

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BACKGROUND: Obesity is a major public health issue and is associated with increased risk of several cancers, currently a leading cause of mortality. Obese patients undergoing bariatric surgery may allow for evaluation of the effect of intentional excess weight loss on subsequent risk of cancer. We aimed to evaluate cancer risk, incidence, and mortality after bariatric surgery.
METHODS: A comprehensive literature search was conducted using PubMed/MEDLINE and Embase with literature published from the inception of both databases to January 2012. Inclusion criteria incorporated all human studies examining oncologic outcomes after bariatric surgery. Two authors independently reviewed selected studies and relevant articles from their bibliographies for data extraction, quality appraisal, and meta-analysis.
RESULTS: Six observational studies (n = 51,740) comparing relative risk (RR) of cancer in obese patients undergoing bariatric surgery versus obese control subjects were analyzed. Overall, the RR of cancer in obese patients after undergoing bariatric surgery was 0.55 [95% confidence interval (CI) 0.41-0.73, p < 0.0001, I(2) = 83%]. The effect of bariatric surgery on cancer risk was modified by gender (p = 0.021). The pooled RR in women was 0.68 (95% CI 0.60-0.77, p < 0.0001, I(2) < 0.1%) and in men was 0.99 (95% CI 0.74-1.32, p = 0.937, I(2) < 0.1%).

CONCLUSIONS: Bariatric surgery reduces cancer risk and mortality in formerly obese patients. When stratifying the meta-analysis by gender, the effect of bariatric surgery on oncologic outcomes is protective in women but not in men.

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Conflict of interest statement: Disclosures Drs. Tee, Warnock, Hu, Chavarro and Ms. Cao (all authors) have no conflicts of interest or financial ties to disclose.

3. Ann Surg Oncol. 2021 Dec;28(13):8236-8237. doi: 10.1245/s10434-021-10321-6. Epub 2021 Jun 30.

Robotic Isolated Caudate Lobectomy for Solitary Colorectal Liver Metastasis.

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Safety of liver resection for colorectal adenocarcinoma continues to improve due to decreased morbidity of resection. Minimally invasive techniques contribute greatly to this morbidity reduction. Isolated caudate lobectomy presents a unique technical challenge because of proximity to major vasculature. The video aims to review nuances of robotic isolated caudate lobectomy for metastatic colon adenocarcinoma.

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PMID: 34195901 [Indexed for MEDLINE]

4. Surg Infect (Larchmt). 2022 Feb;23(1):47-52. doi: 10.1089/sur.2021.131. Epub 2021 Oct 7.

Rising Incidence of Peri-Operative Bactibilia among Patients Undergoing Complex Biliopancreatic Surgery.

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Background: Biliary instrumentation is associated with bactibilia and post-operative infection. Bactibilia incidence over time remains unknown. Patients and Methods: Consecutive patients with bilioenteric anastomosis surgery and available surveillance intra-operative bile duct cultures were evaluated for post-operative infection. The study period (2008-2019) was divided into quartiles to examine time-based trends. Results: Among 101 cases, 60 intra-operative bile duct cultures had no growth and 41 patients had documented at least one culture-positive isolate in their bile. Frequency of patients with culture-positive intra-operative bile increased over the study period (period 1, 1/28, 3.6% vs. period 2, 7/21, 33.3% vs. period 3, 15/26, 57.7% vs. period 4, 18/26, 69.2%; $p < 0.001$). Culture-positive post-operative infection (17/101; 16.8%) was not associated with intra-operative bile duct culture ($p = 0.552$), however, the same micro-organism isolate was identified on post-operative infection and intra-operative culture of bile duct bile among six of 17 patients (35.3%). Conclusions: We found an increasing incidence of bactibilia and post-operative culture-positive infections over the last decade. One-third of patients with a positive intra-operative bile duct culture experienced post-operative infection with the same organism, yet a clear link between bile colonization and post-operative infection was not established.

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5. Ann Surg Oncol. 2020 Dec;27(13):5005-5013. doi: 10.1245/s10434-020-08870-3. Epub 2020 Jul 21.

Cellular Immunoprofile of Peritoneal Environment During a HIPEC Procedure.

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BACKGROUND: We characterized the peritoneal immune cellular profile during cytoreductive surgery and hyperthermic intraperitoneal chemotherapy (HIPEC) in this pilot study.
METHODS: We prospectively performed flow cytometric analysis of peritoneal fluid collected at laparotomy and during HIPEC at 0, 30, 60, and 90 min. Analysis consisted of standard flow cytometric leukocyte gating and the use of antibodies for stem cells, B lymphocytes, T-helper, T-suppressor, and natural killer (NK) cells.
RESULTS: The mean peritoneal carcinomatosis index (PCI) score was 19.8 ± 11.5 (median 19). Twelve patients had a completeness of cytoreduction (CCR) score of

0-1, and three patients had a CCR score of ≥ 2 (20%). The proportion of peritoneal NK cells remained stable ($p = 0.655$) throughout perfusion. The CD4/CD8 ratio ($p = 0.019$) and granulocyte/lymphocyte ratio ($p = 0.018$) evolved during cytoreduction, with no further change during HIPEC. Two distinct temporal patterns of peritoneal T lymphocytes became evident (the 'high' and 'low' CD4/CD8 ratio groups) and patients maintained their high versus low peritoneal CD4/CD8 ratio status throughout the duration of HIPEC. High CD4/CD8 was associated with longer cytoreduction ($p = 0.019$) and borderline higher PCI score ($p = 0.058$). No association was identified with age ($p = 0.131$), sex ($p = 1.000$), CCR status ($p = 0.580$), occurrence of complication ($p = 0.282$), or ascites volume ($p = 0.713$).
CONCLUSION: The cellular immunoprofile of peritoneal fluid during HIPEC is stable but changes during cytoreduction. Two distinct immune groups emerged, based on CD4/CD8 ratios in the peritoneal perfusate. Further studies are warranted to evaluate peritoneal immunity and the clinical significance of novel peritoneal immune phenotype.

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PMID: 32696309 [Indexed for MEDLINE]

6. BMJ Case Rep. 2021 Apr 15;14(4):e240786. doi: 10.1136/bcr-2020-240786.

Rare case of pancreatic neuroendocrine tumour presenting as paraneoplastic hypercalcaemia.

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An asymptomatic 68-year-old woman who presented with an isolated hypercalcaemia was diagnosed with a rare, previously unsuspected parathyroid hormone-related peptide (PTHrP)-producing pancreatic neuroendocrine tumour. She underwent an extensive operation including vascular resection and reconstruction, resulting in successful removal of the tumour with negative margins. Medical and surgical management of pancreatic neuroendocrine tumours and PTHrP-mediated paraneoplastic hypercalcaemia is discussed.

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7. J Am Coll Surg. 2018 Aug;227(2):255-269. doi: 10.1016/j.jamcollsurg.2018.05.001. Epub 2018 May 9.

Indications and Perioperative Outcomes for Pancreatectomy with Arterial Resection.

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J Am Coll Surg. 2019 Jan;228(1):131-133.

BACKGROUND: Pancreatectomy with arterial resection (AR) is performed infrequently. As indications evolve, we evaluated indications, outcomes, and predictors of mortality, morbidity, and survival after AR.
STUDY DESIGN: We performed a single-institution review of elective pancreatectomies with AR (from July1990 to July 2017). Univariate and multivariate analyses were performed for predictors of outcomes and survival.
RESULTS: A total of 111 patients underwent pancreatectomy with AR including any hepatic (54%), any celiac (44%), any superior mesenteric (14%), or multiple ARs (14%), with revascularization in 55%. The majority of cases were planned (77%) and performed post-2010 (78%). Overall 90-day major morbidity (≥grade III) and mortality were 54% and 13%, respectively, due to post-pancreatectomy hemorrhage (PPH), postoperative pancreatic fistula (POPF), or ischemia in the majority of cases. There was a significant decrease in mortality post-2010 (9% vs 29%, $p = 0.02$), and this was protective on multivariate analysis (odds ratio [OR] 0.1, $p = 0.004$); PPH increased mortality (OR 6.1, $p < 0.001$). Post-pancreatectomy hemorrhage was associated with major morbidity (OR 5.1, $p = 0.005$), reoperation (OR = 23.0, $p = 0.004$), ICU (OR 5.5, $p < 0.001$), and readmission (OR 2.6, $p = 0.004$). Other morbidity predictors were AR with graft (OR 4.0, $p = 0.031$) and POPF (OR 3.1, $p = 0.003$). Median survival was 28.5 months and improved for ductal adenocarcinoma after neoadjuvant chemotherapy ($p = 0.038$). There were no differences in survival based on AR type.
CONCLUSIONS: Regardless of indication or type, pancreatectomy with AR is associated with risks greater than standard resections. Mortality has decreased in the modern era; however, morbidity remains high from hemorrhagic, fistula, or ischemia-related complications. Mitigation measures are needed if advanced resections are considered with increasing frequency given the potential oncologic benefit of AR in selected cases after modern chemotherapy.

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8. Ann Surg Oncol. 2022 Feb;29(2):964-969. doi: 10.1245/s10434-021-10811-7. Epub
2021 Oct 6.

Robotic Resection of Type I Hilar Cholangiocarcinoma with Intrapancreatic Bile
Duct Dissection.

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BACKGROUND: Type I hilar cholangiocarcinoma is a malignancy of the extrahepatic
bile duct for which margin-negative resection with sufficient lymphadenectomy
may provide curative treatment. The aim of this video is to highlight the
advantages of optical magnification, articulating instruments, and indocyanine
green fluorescent cholangiography to demonstrate extrahepatic bile duct
resection from the biliary confluence to the intrapancreatic bile duct with
comprehensive hilar lymphadenectomy for pathologic staging.
METHODS: A 58-year-old male presented with obstructive jaundice and was found to
have a biliary stricture arising from the cystic duct and bile duct junction.
Endoscopic biopsy of the bile duct confirmed adenocarcinoma. His case was
presented at a multidisciplinary tumor conference where consensus was to proceed
with upfront robotic en bloc extrahepatic bile duct resection with hilar
lymphadenectomy and Roux-en-Y hepaticojejunostomy.
RESULTS: Final pathology demonstrated margin-negative resection of moderately
differentiated adenocarcinoma, 1 out of 12 lymph nodes involved with disease,
and pathologic stage T2N1M0 (stage IIIC). The patient had no postoperative
complications and was discharged home on postoperative day 5. At 6 weeks from
his operative date, he was initiated on four cycles of adjuvant
gemcitabine/capecitabine, followed by 50 Gray external beam radiation therapy
with capecitabine, then four cycles of gemcitabine/capecitabine, completed after
6 months of therapy.
CONCLUSIONS: Robotic extrahepatic bile duct resection, hilar lymphadenectomy,
and biliary enteric reconstruction is feasible and should be considered for
selected cases of bile duct resection.

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9. J Am Coll Surg. 2019 Dec;229(6):533-540.e1. doi:
10.1016/j.jamcollsurg.2019.09.002. Epub 2019 Sep 25.

Randomized Trial of Perioperative Probiotics Among Patients Undergoing Major
Abdominal Operation.

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BACKGROUND: We investigated the utility and safety of short-course oral
probiotics among patients undergoing major abdominal operations. Perioperative
probiotics can decrease length of stay and lower rates of infectious
complications. We assessed whether perioperative probiotics decrease major
complications among patients undergoing high-risk gastrointestinal operations in
a pragmatic randomized trial.
STUDY DESIGN: This double-blind trial randomized 135 patients undergoing
elective major gastrointestinal operations to perioperative oral probiotic VSL#3
taken just before operation and twice daily up to 15 total doses (n = 67) or
placebo (n = 68). The primary outcomes measure was 30-day composite end point of
death, unplanned readmission, or any infection.
RESULTS: Primary end point occurred among 17 patients in the placebo group
(25.0%) vs 22 patients in the probiotic group (32.8%; p = 0.315). Thirty-day
mortality was 2 (2.9%) in the placebo group compared with 1 (1.5%) in the
probiotic group (p = 1.000). The placebo group patients experienced lower 30-day
readmission rate (3 of 68 [4.4%]) compared with the probiotic group (11 of 67
[16.4%]; p = 0.022). None of the placebo patients were readmitted for
dehydration, but 5 of 11 probiotic group patients (45%; p = 0.049) were
readmitted for dehydration as a consequence of diet intolerance and/or diarrhea.
There was no difference in 30-day infection rate between the groups (15 or 68
[22%] in the placebo group vs 15 of 67 [22.4%] in the probiotic group; p =
0.963).
CONCLUSIONS: Perioperative use of VSL#3 probiotic did not affect 30-day
composite end point of mortality, readmission, and infection rate. A
significantly higher readmission rate was observed among those exposed to
probiotics. Additional studies remain warranted.

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10. HPB (Oxford). 2021 Aug;23(8):1185-1195. doi: 10.1016/j.hpb.2020.11.1146. Epub 2020 Dec 15.

Effect of wound protectors on surgical site infection in patients undergoing whipple procedure.

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BACKGROUND: Conflicting data persists for use of wound protectors in pancreatoduodenectomy (PD) to prevent surgical site infection (SSI). We aimed to examine, at a multi-institutional level, the effect of wound protectors on superficial or deep SSI following elective open PD.
METHODS: The American College of Surgeons National Surgical Quality Improvement Program pancreatectomy procedure targeted participant use file was queried from 2016 to 2018. Planned open PD procedures were extracted. Univariable, multivariable, and propensity score matched analyses were conducted.
RESULTS: 11,562 patients undergoing PD were evaluated, 27% of which used wound protectors. Wound protectors decreased superficial or deep SSI risk in all patients (5.7% vs. 9.5%, $P < 0.001$), patients who have (6.6% vs. 12.2%, $P < 0.001$) and who did not have (4.6% vs. 6.5%, $P = 0.011$) a biliary stent. Propensity score matched analysis confirms such results (OR = 0.56, 95% CI: 0.46-0.69, $P < 0.001$ overall, OR = 0.66, 95% CI: 0.46-0.95, $P = 0.03$ without biliary stent, OR = 0.57, 95% CI: 0.44-0.73, $P < 0.001$ with biliary stent).
CONCLUSIONS: Wound protectors reduce risk of superficial or deep SSI in patients undergoing PD, yet only a quarter of PD were associated with their use. This protective effect is seen whether patients have or have not had preoperative biliary stenting.

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11. Surg Endosc. 2020 Nov;34(11):5030-5040. doi: 10.1007/s00464-019-07298-5. Epub 2019 Dec 9.

Minimally invasive hepatectomy is associated with decreased morbidity and resource utilization in the elderly.

Tee MC(1), Chen L(2), Peightal D(3), Franko J(3), Kim PT(2), Brahmbhatt RD(3), Raman S(3), Scudamore CH(2), Chung SW(2), Segedi M(2).

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BACKGROUND: The aim of this study was to evaluate whether elderly patients undergoing elective hepatectomy experience increased morbidity/mortality and whether these outcomes could be mitigated by minimally invasive hepatectomy (MIH).
METHODS: 15,612 patients from 2014 to 2017 were identified in the Hepatectomy Targeted Procedure Participant Use File of the American College of Surgeons National Surgical Quality Improvement Program. Multivariable logistic regression models were constructed to examine the effect of elderly status (age ≥ 75 years, N = 1769) on outcomes with a subgroup analysis of elderly only patients by open (OH) versus MIH (robotic, laparoscopic, and hybrid, N = 4044). Propensity score matching was conducted comparing the effect of MIH to OH in elderly patients to ensure that results are not the artifact of imbalance in baseline characteristics.
RESULTS: Overall, elderly patients had increased risk for 30-day mortality, major morbidity, prolonged length of hospital stay, and discharge to destination other than home. In the elderly subgroup, MIH was associated with decreased major morbidity (OR 0.71, P = 0.031), invasive intervention (OR 0.61, P = 0.032), liver failure (OR 0.15, P = 0.011), bleeding (OR 0.46, P < 0.001), and prolonged length of stay (OR 0.46, P < 0.001). Propensity score-matched analyses successfully matched 4021 pairs of patients treated by MIH vs. OH, and logistic regression analyses on this matched sample found that MIH was associated with decreased major complications (OR 0.69, P = 0.023), liver failure (OR 0.14, P = 0.010), bile leak (OR 0.46, P = 0.009), bleeding requiring transfusion (OR 0.46, P < 0.001), prolonged length of stay (OR 0.46, P < 0.001), and discharge to destination other than home (OR 0.691, P = 0.035) compared to OH.
CONCLUSION: MIH is associated with decreased risk of major morbidity, liver failure, bile leak, bleeding, prolonged length of stay, and discharge to destination other than home among elderly patients in this retrospective study. However, MIH in elderly patients does not protect against postoperative mortality.

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PMID: 31820156 [Indexed for MEDLINE]

12. Cancer Treat Res Commun. 2021;29:100475. doi: 10.1016/j.ctarc.2021.100475. Epub 2021 Oct 11.

Signet ring cell carcinoma of the gastrointestinal tract: National trends on treatment effects and prognostic outcomes.

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BACKGROUND: Signet ring cell carcinoma (SRCC) is a distinct malignancy occurring across the tubular gastrointestinal tract (tGIT). We comprehensively examined the outcomes of patients diagnosed with SRCC across tGIT.
METHODS: SRCC and not-otherwise-specified adenocarcinoma (NOS) patients reported to the National Cancer Database from 2004 to 2015 were included. Baseline characteristics, outcomes and site-specific adjusted hazard ratios (aHR) derived from Cox models of SRCC patients were compared to those of NOS patients. Overall survival (OS) was primary endpoint.
RESULTS: A total of 41,686 SRCC (4.6%) and 871,373 NOS patients (95.4%) were included. SRCC patients were younger (63.1 ± 14.7 vs. 67.0 ± 13.4 y, $p < 0.001$) and more likely to present with Stage IV disease than NOS patients (42.5% vs. 24.5%, $p < 0.001$). Stomach (n = 24,433) and colon (n = 9,914) contributed highest frequency of SRCC. SRCC histology was associated with shorter OS (aHR = 1.377, $p < 0.001$) in multivariate model. There was an interaction between SRCC and chemotherapy effects on risk of death (interaction aHR = 1.072, pinteraction< 0.001) and between SRCC histology and disease site, suggesting that the effect of SRCC on OS is site-dependent, with a higher increased risk of death in patients with rectal SRCC (aHR = 2.378, pinteraction< 0.001).
CONCLUSION: Significant negative prognostic effect associated with SRCC is site-dependent across the GIT. Surgical and or systemic therapy was associated with improved OS among SRCC patients, but remained lower than NOS patients. Further understanding of gastrointestinal SRCC molecular profile is needed to better inform future treatment strategies.

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13. World J Surg Oncol. 2008 Aug 19;6:87. doi: 10.1186/1477-7819-6-87.

Incidental littoral cell angioma of the spleen.

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BACKGROUND: Littoral cell angioma (LCA) is a recently described primary vascular neoplasm of the spleen that may be associated with other malignancies and may itself also have malignant potential.
CASE PRESENTATION: We present a case of LCA that was discovered incidentally in a 52-year-old woman who presented with biliary colic at the time of consultation for cholecystectomy. This vascular neoplasm was evaluated by ultrasound, CT, MRI, Tc-99m labelled red blood cell scintigraphy, and core biopsy. A splenectomy revealed LCA by pathological evaluation. Post-operative outcome was favourable with no evidence of complication or recurrent disease. Following this case presentation, clinical, radiographic, and pathological features of LCA will be reviewed as well as recent advances in our understanding of this uncommon splenic lesion.
CONCLUSION: LCA is a rare, generally benign, primary vascular tumour of the spleen that typically is discovered incidentally. Individuals diagnosed with this tumour must be carefully evaluated to exclude primary, secondary, and synchronous malignancies.

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PMID: 18713469 [Indexed for MEDLINE]

14. Am J Surg. 2013 May;205(5):597-601; discussion 601. doi: 10.1016/j.amjsurg.2013.01.027.

Streamlining of intra-operative parathyroid hormone measurements for cure during parathyroidectomy.

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BACKGROUND: The timing of intraoperative parathyroid hormone measurements during parathyroidectomy for the treatment of primary hyperparathyroidism is quite variable. Although a 50% decrease after excision is considered predictive of cure, it is not known which combination of measurements is most useful.
METHODS: Two hundred thirteen patients underwent resection of solitary

parathyroid adenomas. Sex, age, intraoperative parathyroid hormone level at baseline, before adenoma removal (T0), and 5 minutes (T5) and 10 minutes (T10) after adenoma removal; and 50% decrease were tested for associations with cure.
RESULTS: A 50% decrease in intraoperative parathyroid hormone level was 95% sensitive for cure (95% confidence interval, 89% to 98%) but did not predict cure for individual patients. A decrease into the normal range was not correlated with cure (P > .50). However, a 50% decrease from T0 to T10 was 97% predictive of cure (odds ratio, 6.5; P = .08).
CONCLUSIONS: The decrease in parathyroid hormone level from T0 to T10 during parathyroidectomy was most predictive of cure of primary hyperparathyroidism. A decrease into the normal range did not improve the performance characteristics of this test.

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15. HPB (Oxford). 2015 Oct;17(10):909-18. doi: 10.1111/hpb.12456. Epub 2015 Aug 20.

Laparoscopic pancreatoduodenectomy does not completely mitigate increased perioperative risks in elderly patients.

Tee MC(1), Croome KP(1), Shubert CR(1), Farnell MB(1), Truty MJ(1), Que FG(1), Reid-Lombardo KM(1), Smoot RL(1), Nagorney DM(1), Kendrick ML(1).

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BACKGROUND: Elderly patients undergoing open pancreatoduodenectomy (OPD) are at increased risk for surgical morbidity and mortality. Whether totally laparoscopic pancreatoduodenectomy (TLPD) mitigates these risks has not been evaluated.
METHODS: A retrospective review of outcomes in patients submitted to pancreatoduodenectomy during 2007-2014 was conducted (n = 860). Outcomes in elderly patients (aged ≥70 years) were compared with those in non-elderly patients with respect to risk-adjusted postoperative morbidity and mortality. Differences in outcomes between patients submitted to OPD and TLPD, respectively, were evaluated in the elderly subgroup.
RESULTS: In elderly patients, the incidences of cardiac events (odds ratio [OR] 3.21, P < 0.001), respiratory events (OR 1.68, P = 0.04), delayed gastric emptying (DGE) (OR 1.73, P = 0.003), increased length of stay (LoS, 1 additional day) (P < 0.001), discharge disposition other than home (OR 8.14, P < 0.001) and blood transfusion (OR 1.48, P = 0.05) were greater than in non-elderly patients. Morbidity and mortality did not differ between the OPD and TLPD subgroups of elderly patients. In elderly patients, OPD was associated with increased DGE (OR 1.80, P = 0.03), LoS (1 additional day; P < 0.001) and blood transfusion (OR 2.89, P < 0.001) compared with TLPD.

CONCLUSIONS: Elderly patients undergoing TLPD experience rates of mortality, morbidity and cardiorespiratory events similar to those in patients submitted to OPD. In elderly patients, TLPD offers benefits by decreasing DGE, LoS and blood transfusion requirements.

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16. Ann Surg. 2012 Jul;256(1):53-9. doi: 10.1097/SLA.0b013e3182570372.

Wound protectors reduce surgical site infection: a meta-analysis of randomized controlled trials.

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OBJECTIVE: A meta-analysis of randomized clinical trials (RCTs) was conducted to evaluate whether wound protectors reduce the risk of surgical site infection (SSI) after gastrointestinal and biliary tract surgery.
BACKGROUND: The effectiveness of impervious wound edge protectors for reduction of SSI remains unclear.
METHODS: A systematic review was conducted in Medline, EMBASE, and the Cochrane Library to identify RCTs that evaluate the risk of SSI after gastrointestinal and biliary surgeries with and without the use of an impervious wound protector. The pooled risk ratio was estimated with random-effect meta-analysis. Sensitivity analyses were performed to examine the impact of structural design of wound protector, publication year, study quality, inclusion of emergent surgeries, preoperative antibiotic administration, and bowel preparation on the pooled risk of SSI.
RESULTS: Of the 347 studies identified, 6 RCTs representing 1008 patients were included. The use of a wound protector was associated with a significant decrease in SSI (RR = 0.55, 95% CI 0.31-0.98, P = 0.04). There was a nonsignificant trend toward greater protective effect in studies using a dual ring protector (RR = 0.31, 95% CI 0.14-0.67, P = 0.003), rather than a single ring protector (RR = 0.83, 95% CI 0.38-1.83, P = 0.64). Publication year (P = 0.03) and blinding of outcome assessors (P = 0.04) significantly modified the effect of wound protectors on SSI.
CONCLUSIONS: Our results suggest that wound protectors reduce rates of SSI after gastrointestinal and biliary surgery.

DOI: 10.1097/SLA.0b013e3182570372
PMID: 22584694 [Indexed for MEDLINE]

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Jul 14.

Multiple dynamic cavernous malformations in a girl: long-term follow-up.

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BACKGROUND: Cavernous malformations have generally been viewed as fairly benign
vascular lesions with low potential for causing massive hemorrhage.
CASE DESCRIPTION: We present an interesting case of multiple CMs, several of
which were formed de novo and exhibited aggressive biological behavior resulting
in recurrent episodes of intracranial hemorrhage over a 10-year period. This
case illustrates a dynamic and aggressive form of CMs. Recent advances in our
understanding of the molecular pathogenesis of CMs implicate genetics as an
important pathogenic factor, which is the most likely etiology of this patient's
presentation.
CONCLUSION: Special challenges exist in managing young children with multiple,
highly aggressive CMs.

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PMID: 19604555 [Indexed for MEDLINE]

18. Am J Surg. 2013 May;205(5):591-6; discussion 596. doi:
10.1016/j.amjsurg.2013.01.017.

Ionized vs serum calcium in the diagnosis and management of primary
hyperparathyroidism: which is superior?

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BACKGROUND: The diagnosis of primary hyperparathyroidism (PHPT) is based on the
presence of an elevated serum calcium level. The study objective was to compare
ionized calcium levels to serum calcium levels with respect to parathyroid
hormone level (PTH) and several patient outcomes.
METHODS: The study population comprised a retrospective cohort of 268 patients
with PHPT who underwent primary parathyroidectomy. Serum calcium levels were
compared with ionized calcium levels regarding their association with PTH level,

presence of multiglandular disease, adenoma size, and extent of neck exploration.
RESULTS: Serum calcium level was correlated with ionized calcium level (R(2) = .68, 95% confidence interval [CI], .56 to .79; P < .0001) and PTH was associated with both serum (R(2) = .19; 95% CI, .04 to .33; P = .012) and ionized (R(2) = .23; 95% CI, .07 to .38; P = .004) calcium levels. Ionized calcium level was a more sensitive indicator of PHPT because there was a greater incidence of ionized calcium being elevated without concordant serum calcium elevation than vice versa (P < .0001). Ionized calcium was also more linearly associated with adenoma size than was serum calcium (P = .0001). There were no differences between serum and ionized calcium levels in predicting the presence of multiglandular disease or the extent of neck dissection.
CONCLUSIONS: Serum calcium level is an appropriate first-line biochemical test for the diagnosis of PHPT. However, ionized calcium measurements may provide additional benefit in certain cases of PHPT because it is correlated with PTH level and adenoma size, and it may be a more sensitive marker of disease severity than serum calcium.

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19. Eur J Surg Oncol. 2020 Oct;46(10 Pt A):1941-1947. doi: 10.1016/j.ejso.2020.05.014. Epub 2020 May 16.

Oncologic and surgical outcomes for gastric cancer patients undergoing gastrectomy differ by race in the United States.

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INTRODUCTION: Gastric adenocarcinoma lymph node retrieval during gastrectomy and survival differ significantly between Asian and Western studies. It is unclear whether such disparities are the result of surgical technique, patient population, or other factors. In this observational study, we aimed to determine whether lymph node retrieval and outcomes differ between White, Black, and Asian American patients undergoing gastrectomy for adenocarcinoma.
MATERIALS AND METHODS: 47,217 cases of gastric resection for gastric adenocarcinoma and its subtypes were identified in the National Cancer Data Base (2000-2015). Differences in demographics, lymph node retrieval, operative outcomes, and survival were compared by self-reported race (White, Black, and

Asian).
RESULTS: Asians had greater median lymph node retrieval (17) compared to White (15) and Black (16) patients, P < 0.001. Lymph node ratio was lowest in Asian (0.03) compared to White (0.05) and Black (0.09) patients, P < 0.001. Postoperative mortality was lowest in Asian patients on multivariable analysis (90-day mortality adjusted odds ratio of 0.54, P < 0.001). Median survival was not yet reached for Asian patients but was 39.5 months for White and 43.0 months for Black patients (P < 0.001). Differences in survival by race persisted on multivariable analysis (Asian adjusted hazard ratio was 0.64, 95% CI: 0.59-0.70, P < 0.001).
CONCLUSIONS: Asian-American patients with gastric cancer undergoing gastrectomy have greater lymph node retrieval, decreased lymph node ratio, decreased postoperative mortality, and increased long-term survival compared to White or Black Americans. Data suggest factors other than surgical technique and oncologic care may be responsible for gastric adenocarcinoma outcome differences seen between Asian and Western studies.

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Conflict of interest statement: Declaration of competing interest Drs. Tee, Pirozzi, Brahmbhatt, Raman, and Franko have no personal or financial conflicts of interest.

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Jan 3.

Glucose and endoplasmic reticulum calcium channels regulate HIF-1beta via presenilin in pancreatic beta-cells.

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Pancreatic beta-cell death is a critical event in type 1 diabetes, type 2 diabetes, and clinical islet transplantation. We have previously shown that prolonged block of ryanodine receptor (RyR)-gated release from intracellular Ca(2+) stores activates calpain-10-dependent apoptosis in beta-cells. In the present study, we further characterized intracellular Ca(2+) channel expression and function in human islets and the MIN6 beta-cell line. All three RyR isoforms were identified in human islets and MIN6 cells, and these endoplasmic reticulum

channels were observed in close proximity to mitochondria. Blocking RyR
channels, but not sarco/endoplasmic reticulum ATPase (SERCA) pumps, reduced the
ATP/ADP ratio. Blocking Ca(2+) flux through RyR or inositol trisphosphate
receptor channels, but not SERCA pumps, increased the expression of
hypoxia-inducible factor (HIF-1beta). Moreover, inhibition of RyR or inositol
trisphosphate receptor channels, but not SERCA pumps, increased the expression
of presenilin-1. Both HIF-1beta and presenilin-1 expression were also induced by
low glucose. Overexpression of presenilin-1 increased HIF-1beta, suggesting that
HIF is downstream of presenilin. Our results provide the first evidence of a
presenilin-HIF signaling network in beta-cells. We demonstrate that this pathway
is controlled by Ca(2+) flux through intracellular channels, likely via changes
in mitochondrial metabolism and ATP. These findings provide a mechanistic
understanding of the signaling pathways activated when intracellular Ca(2+)
homeostasis and metabolic activity are suppressed in diabetes and islet
transplantation.

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21. J Surg Oncol. 2016 Sep;114(4):475-82. doi: 10.1002/jso.24381. Epub 2016 Jul 20.

Implications of CA19-9 elevation for survival, staging, and treatment sequencing
in intrahepatic cholangiocarcinoma: A national cohort analysis.

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BACKGROUND: Optimal management of patients with intrahepatic cholangiocarcinoma
(ICCA) and elevated CA19-9 remains undefined. We hypothesized CA19-9 elevation
above normal indicates aggressive biology and that inclusion of CA19-9 would
improve staging discrimination.
METHODS: The National Cancer Data Base (NCDB-2010-2012) was reviewed for
patients with ICCA and reported CA19-9. Patients were stratified by CA19-9
above/below normal reference range. Unadjusted Kaplan-Meier and adjusted
Cox-proportional-hazards analysis of overall survival (OS) were performed.
RESULTS: A total of 2,816 patients were included: 938 (33.3%) normal; 1,878
(66.7%) elevated CA19-9 levels. Demographic/pathologic and
chemotherapy/radiation were similar between groups, but patients with elevated
CA19-9 had more nodal metastases and less likely to undergo resection. Among
elevated-CA19-9 patients, stage-specific survival was decreased in all stages.

Resected patients with CA19-9 elevation had similar peri-operative outcomes but decreased long-term survival. In adjusted analysis, CA19-9 elevation independently predicted increased mortality with impact similar to node-positivity, positive-margin resection, and non-receipt of chemotherapy. Proposed staging system including CA19-9 improved survival discrimination over AJCC 7th edition.
CONCLUSION: Elevated CA19-9 is an independent risk factor for mortality in ICCA similar in impact to nodal metastases and positive resection margins. Inclusion of CA19-9 in a proposed staging system increases discrimination. Multi-disciplinary therapy should be considered in patients with ICCA and CA19-9 elevation. J. Surg. Oncol. 2016;114:475-482. © 2016 Wiley Periodicals, Inc.

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22. J Clin Med Res. 2011 Oct;3(5):258-61. doi: 10.4021/jocmr661w. Epub 2011 Sep 26.

Images of cecal volvulus from a strangulating fallopian tube: a case report.

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An unusual case of cecal volvulus arising from a strangulating fallopian tube is presented. The etiology, diagnosis, and management guidelines of this infrequent cause of large bowel obstruction are reviewed. Computed tomography images are included, which demonstrate key features that are pathognomonic for this condition. To our knowledge, this is the first report of gynecologic adnexa giving rise to cecal volvulus.
KEYWORDS: Cecal volvulus; Gynecologic and general surgery; Intestinal obstruction.

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PMCID: PMC3279488
PMID: 22383914

23. J Gastrointest Surg. 2015 Dec;19(12):2146-53. doi: 10.1007/s11605-015-2928-7. Epub 2015 Sep 2.

Pancreatoduodenectomy for Chronic Pancreatitis-Results of a Pain Relief and Quality of Life Survey 15 Years Following Operation.

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BACKGROUND: Over the last 30 years, numerous developments in the management of chronic pancreatitis have occurred, leading to multiple surgical and non-surgical options.
PATIENTS AND METHODS: All patients who underwent pancreatoduodenectomy for chronic pancreatitis from January 1976 to July 2013 were reviewed. Surviving patients were contacted for a follow-up questionnaire and Short Form (SF)-12 Quality of Life Survey administration.
RESULTS: A total of 166 patients were identified (cohort 1:1976-1997(N = 105) and cohort 2:1998-2013(N = 61)). Prior to pancreatoduodenectomy, a higher proportion of patients in cohort 2 had undergone endoscopic stenting, 67 vs 10 % ($p < 0.001$) and/or celiac plexus block 15 and 5 % ($p = 0.026$). Median follow-up for all survey respondents was 15 years. On the SF-12, mean physical component score was 43.8 ± 11.8 and mental component score was 54.3 ± 7.9. Patients were significantly lower on the physical component score ($p < 0.001$) and significantly better on the mental component score ($p = 0.001$) than the general US population. Mean pain score out of 10 was significantly lower after surgery 1.6 ± 2.6 than before surgery 7.9 ± 3.5 ($p < 0.001$). Diabetes developed in 28 % of patients who were not diabetic prior to surgery.
CONCLUSION: Although practice has changed so that patients have a longer time from presentation until surgery as less-invasive techniques are attempted, pancreatoduodenectomy appears to provide effective long-term pain relief and acceptable quality of life in appropriately selected patients with chronic pancreatitis and intractable pain.

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PMID: 26334250 [Indexed for MEDLINE]

24. Surgery. 2015 Oct;158(4):1027-36; discussion 1036-8. doi: 10.1016/j.surg.2015.06.004. Epub 2015 Jul 7.

Preoperative anemia is associated with increased use of hospital resources in patients undergoing elective hepatectomy.

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BACKGROUND: In patients undergoing elective hepatectomy, we aimed to evaluate the effect of preoperative anemia on postoperative mortality, morbidity, readmission, risk of blood transfusion, and duration of hospital stay.
METHODS: A total of 4,170 patients who underwent elective hepatectomy from 2010 to 2012 were identified in the American College of Surgeons National Surgical Quality Improvement Program. Univariate and multivariate analyses were performed by examination of the association of preoperative anemia (defined as hematocrit <5) and the risk of any perioperative blood transfusion (defined as ≥1 unit of blood within 72 hours of operation), mean duration of stay, prolonged duration of stay (defined as ≥9 days, which represented the 75th percentile of this cohort), 30-day readmission, major morbidity, and mortality.
RESULTS: A total of 948 patients had preoperative anemia (22.7%). Preoperative anemia was associated with increased risk of any perioperative blood transfusion, prolonged duration of stay, major postoperative complication, and 30-day mortality (P < .05 for all analyses). After controlling for potentially confounding covariates, there was nearly a 3-fold greater risk of blood transfusion (adjusted OR = 2.79, P < .001) and 2-fold greater risk of prolonged duration of stay in anemic versus nonanemic patients (adjusted OR = 1.66, P < .001). Mean duration of stay was 10.0 days and 7.4 days for anemic and nonanemic patients, respectively (P < .001).
CONCLUSION: Anemia is associated with an almost 3-fold increased risk of blood transfusion, 2-fold increased risk of prolonged duration of hospitalization, and hospital stays were 2.6 days greater in anemic patients. Anemia may significantly impact resource utilization for elective hepatectomy.

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10.

Different effects of FK506, rapamycin, and mycophenolate mofetil on glucose-stimulated insulin release and apoptosis in human islets.

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Pancreatic islet transplantation has the potential to be an effective treatment for type 1 diabetes mellitus. While recent improvements have improved 1-year outcomes, follow-up studies show a persistent loss of graft function/survival over 5 years. One possible cause of islet transplant failure is the immunosuppressant regimen required to prevent alloimmune graft rejection. Although there is evidence from separate studies, mostly in rodents and cell lines, that FK506 (tacrolimus), rapamycin (sirolimus), and mycophenolate mofetil (MMF; CellCept) can damage pancreatic beta-cells, there have been few side-by-side, multiparameter comparisons of the effects of these drugs on human islets. In the present study, we show that 24-h exposure to FK506 or MMF impairs glucose-stimulated insulin secretion in human islets. FK506 had acute and direct effects on insulin exocytosis, whereas MMF did not. FK506, but not MMF, impaired human islet graft function in diabetic NOD*scid mice. All of the immunosuppressants tested in vitro increased caspase-3 cleavage and caspase-3 activity, whereas MMF induced ER-stress to the greatest degree. Treating human islets with the GLP-1 agonist exenatide ameliorated the immunosuppressant-induced defects in glucose-stimulated insulin release. Together, our results demonstrate that immunosuppressants impair human beta-cell function and survival, and that these defects can be circumvented to a certain extent with exenatide treatment.

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PMID: 19500470 [Indexed for MEDLINE]

26. Can J Surg. 2013 Oct;56(5):325-31. doi: 10.1503/cjs.015612.

Incremental value and clinical impact of neck sonography for primary hyperparathyroidism: a risk-adjusted analysis.

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BACKGROUND: Despite the different preoperative imaging modalities available for parathyroid adenoma localization, there is currently no uniform consensus on the most appropriate preoperative imaging algorithm that should be routinely followed prior to the surgical management of primary hyperparathyroidism (PHPT). We sought to determine the incremental value of adding neck ultrasonography to scintigraphy-based imaging tests.
METHODS: In a single institution, surgically naive patients with PHPT underwent the following localization studies before parathyroidectomy: 1) Tc-99m sestamibi imaging with single photon emission computed tomography/computed tomography (SPECT/CT) or Tc-99m sestamibi imaging with SPECT alone, or 2) ultrasonography in addition to those tests. We retrospectively collected data and performed a multivariate analysis comparing group I (single study) to group II (addition of ultrasonography) and risk of bilateral (BNE) compared with unilateral (UNE) neck

exploration.
RESULTS: Our study included 208 patients. Group II had 0.45 times the odds of BNE versus UNE compared with group I (unadjusted odds ratio [OR] 0.45, 95% confidence interval [CI] 0.25-0.81, p = 0.008). When adjusting for patient age, sex, preoperative calcium level, use of intraoperative PTH monitoring, preoperative PTH level, adenoma size, and number of abnormal parathyroid glands, Group II had 0.48 times the odds of BNE versus UNE compared with group I (adjusted OR 0.48, 95% CI 0.23-1.03, p = 0.06). In a subgroup analysis, only the addition of ultrasonography to SPECT decreased the risk of undergoing BNE compared with SPECT alone (unadjusted OR 0.40, 95% CI 0.19-0.84, p = 0.015; adjusted OR 0.38, 95% CI 0.15-0.96, p = 0.043).
CONCLUSION: The addition of ultrasonography to SPECT, but not to SPECT/CT, has incremental value in decreasing the extent of surgery during parathyroidectomy, even after adjusting for multiple confounding factors.

Publisher: CONTEXTE: Malgré l'existence de diverses modalités d'imagerie préopératoire pour la localisation de l'adénome parathyroïdien, on déplore actuellement l'absence de consensus en ce qui concerne l'algorithme le plus approprié à suivre au chapitre de l'imagerie préalable à une prise en charge chirurgicale de l'hyperparathyroïdie primaire (HPTP). Nous avons voulu vérifier si l'ajout de l'échographie du cou aux tests d'imagerie scintigraphique offrait une valeur ajoutée.
MÉTHODES: Dans un établissement, des patients atteints d'HPTP n'ayant jamais subi d'intervention chirurgicale ont été soumis à des examens de localisation préparathyroïdectomie : 1) imagerie au moyen du sestamibi marqué au Tc-99m avec tomographie par émission monophotonique/tomodensitométrie (SPECT/CT), ou imagerie au moyen du sestamibi marqué au Tc-99m avec SPECT seule, our 2) échographie en plus de ces tests. Nous avons recueilli les données rétrospectivement et effectué une analyse multivariée pour comparer le Groupe I (examen seul) au Groupe II (ajout de l'échographie) et la probabilité qu'ils subissent une exploration cervicale bilatérale (ECB) plutôt qu'unilatérale (ECU).
RÉSULTANTS: Notre étude a recruté 208 patients. Le Groupe II s'est trouvé exposé à un risque 0,45 fois plus grand d'être soumis à une ECB plutôt qu'à une ECU, comparativement au Groupe I (rapport des cotes [RC] non ajusté 0,45, intervalle de confiance [IC] de 95 % 0,25–0,81, p = 0,008). Après ajustement pour tenir compte de l'âge et du sexe des patients, de leur taux préopératoire de calcium, de la surveillance peropératoire de l'HPT, du taux préopératoire de l'HPT, de la taille de l'adénome et du nombre de ganglions parathyroïdiens anormaux, le Groupe II s'est révélé exposé à un risque 0,48 fois plus grand à l'égard de l'ECB plutôt que de l'ECU comparativement au Groupe I (RC ajusté 0,48, IC de 95 % 0,23–1,03, p = 0,06). Selon une analyse de sous-groupe, seul l'ajout de l'échographie à la SPECT a réduit le risque de subir une ECB comparativement à la SPECT seule (RC non ajusté 0,40, IC de 95 % 0,19–0,84, p = 0,015; RC ajusté 0,38, IC de 95 % 0,15–0,96, p = 0,043).
CONCLUSIONS: L'ajout de l'échographie à la SPECT, mais non à la SPECT/CT, a offert une valeur ajoutée pour ce qui est de réduire l'étendue de l'opération durant la parathyroïdectomie, même après ajustement pour tenir compte de plusieurs facteurs de confusion.

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27. J Gastrointest Surg. 2016 Jan;20(1):189-98; discussion 198. doi:
10.1007/s11605-015-3007-9. Epub 2015 Nov 9.

Metabolic Syndrome is Associated with Increased Postoperative Morbidity and
Hospital Resource Utilization in Patients Undergoing Elective Pancreatectomy.

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PURPOSE: In patients undergoing elective partial pancreatectomy, our aim was to
evaluate the effect of metabolic syndrome (MS) on postoperative mortality,
morbidity, and utilization of hospital resources. Our hypothesis was that MS is
associated with worse surgical outcomes after pancreatectomy.
METHODS: Fifteen thousand eight hundred thirty-one patients undergoing elective
pancreatectomy from 2005 to 2012 were identified in the Participant User File of
the American College of Surgeons National Surgical Quality Improvement Program
(ACS-NSQIP). Univariable and multivariable analyses were performed examining the
association of MS (defined as body mass index ≥30 kg/m(2), hypertension
requiring medications, and diabetes requiring medications and/or insulin) and
risk of 30-day mortality, morbidity, and utilization of hospital resources (risk
of blood transfusion in the first 72 h after pancreatectomy and prolonged
hospital stay, defined as ≥13 days, which was the 75th percentile of this
cohort). Multivariable logistic regression models controlled for age, sex, race,
pancreatectomy type (distal versus proximal), smoking status, alcohol
consumption, functional status, dyspnea, cardiovascular disease, hematocrit,
INR, serum albumin, bilirubin, and creatinine. Stratified analyses were
conducted by type of pancreatectomy and indication for pancreatectomy (benign
versus malignant).
RESULTS: On univariate analysis, 1070 (6.8%) patients had MS. MS was associated
with increased postoperative morbidity, major morbidity, surgical site
infection, septic shock, cardiac event, respiratory failure, pulmonary embolism,
blood transfusion, and prolonged duration of hospital stay ($P < 0.05$ for all
analyses). After controlling for potentially confounding variables, there was a
26% increased odds of postoperative morbidity ($P < 0.001$), 17% increased odds of
major morbidity ($P = 0.034$), 32% increased odds of surgical site infection
($P < 0.001$), 34% increased odds of respiratory failure ($P = 0.023$), 68%
increased odds of pulmonary embolism ($P = 0.045$), 26% increased odds of blood

transfusion (P = 0.018), and 21% increased odds of prolonged hospital stay (P = 0.011) in patients with MS compared to patients without MS. MS was not associated with 30-day mortality after elective pancreatectomy (P = 0.465). When stratified by distal versus proximal pancreatectomy and benign versus malignant disease, the effect of MS on outcomes appears to be modified by type of pancreatectomy and indication with poorer outcomes observed for distal pancreatectomies and benign indications for resection.
CONCLUSION: MS is an under-emphasized predictor of increased postoperative morbidity and utilization of hospital resources in patients undergoing elective pancreatectomy. The effect of MS on these postoperative outcomes appears to be more pronounced for patients with benign rather than malignant indications for pancreatectomy and in patients undergoing distal rather than proximal pancreatectomy. These results may inform patient selection, optimization of comorbidities prior to elective pancreatectomy, and strategies for postoperative management.

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