SURGICAL EVIDENCE

By
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We present published evidence on surgical practice that does not require specialized training or significant resources for its implementation. Surgeons are advised to read the full text of the evidence before following the study conclusions.

Mechanical bowel preparation for elective colorectal surgery

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Background: The presence of bowel contents during surgery has been related to anastomotic leakage, but the belief that mechanical bowel preparation (MBP) is an efficient agent against leakage and infectious complications is based on observational data and expert opinions only.
Objectives: To determine the security and effectiveness of MBP on morbidity and mortality in colorectal surgery.
Search strategy: Publications describing trials of MBP before elective colorectal surgery were sought through searches of MEDLINE, EMBASE, LILACS, and The Cochrane Library; by handsearching relevant medical journals and conference proceedings, and through personal communication with colleagues. Searches were performed March 13, 2008.
Selection criteria: Randomised controlled trials (RCTs) including participants submitted for elective colorectal surgery. Eligible interventions included any type of MBP compared with no MBP. Primary outcomes included anastomosis leakage - both rectal and colonic - and combined figures. Secondary outcomes included mortality, peritonitis, reoperation, wound infection, extra-abdominal complications, and overall surgical site infections. DATA
Collection and analysis: Data were independently extracted and checked. The methodological quality of each trial was assessed. Details of randomisation, blinding, type of analysis, and number lost to follow up were recorded. For analysis, the Peto-Odds Ratio (OR) was used as the default (no statistical heterogeneity was observed).
Main results: Four new trials were included at this update (total 13 RCTs with 4777 participants; 2390 allocated to MBP (Group A), and 2387 to no preparation (Group B), before elective colorectal surgery). Anastomotic leakage occurred: (i) in 10.0% (14/139) of Group A, compared with 6.6% (9/136) of Group B for low anterior resection; Peto OR 1.73 (95% confidence interval (CI): 0.73 to 4.10).(ii) in 2.9% (32/1226) of Group A, compared with 2.5% (31/1228) of Group B for colonic surgery; Peto OR 1.13 (95% CI: 0.69 to 1.85). Overall anastomotic leakage occurred in 4.2% (102/2398) of Group A, compared with 3.4% (82/2378) of Group B; Peto OR 1.26 (95% CI: 0.941 to 1.69). Wound infection occurred in 9.6% (232/2417) of Group A, compared with 8.3% (200/2404) of Group B; Peto OR 1.19 (95% CI: 0.98 to 1.45). Sensitivity analyses did not produce any differences in overall results. AUTHORS' CONCLUSIONS: There is no statistically significant evidence that patients benefit from MBP. The belief that MBP is necessary before elective colorectal surgery should be reconsidered. Further research on patients submitted for elective colorectal surgery in which bowel continuity is restored, with stratification for colonic and rectal surgery, is still warranted.

Elimination of preoperative testing in ambulatory surgery

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Background: Preoperative testing has been criticized as having little impact on perioperative outcomes. We conducted a randomized, single-blind, prospective, controlled pilot study to determine whether indicated preoperative testing can be eliminated without increasing the perioperative incidence of adverse events in selected patients undergoing ambulatory surgery.
Methods: One thousand sixty-one eligible patients were randomized either to have indicated preoperative testing or no preoperative testing. In the indicated testing group, patients received indicated preoperative testing: a complete blood count, electrolytes, blood glucose, creatinine, electrocardiogram, and chest radiograph according to the Ontario Preoperative Testing Grid as per current practice, whereas in the no testing group, no testing was ordered. The investigators, data collectors, and patient outcome reviewers were blinded to the group assignment. The primary outcome measures were the rate of perioperative adverse events and the rates of adverse events within 7 and 30 days after surgery.
Results: Patients' age, gender, American Society of Anesthesiologists status, type of surgery, and anesthesia were similar between the two groups. There were no significant differences in the rates of perioperative adverse events and the rates of adverse events within 30 days after surgery between the no testing group and the indicated testing group. Hospital revisits <or=7 days were higher in the indicated testing group ($P < 0.05$). None of the adverse events were related to the indicated testing or no testing.
Conclusions: This pilot study showed that there was no increase in the perioperative adverse events as a result of no preoperative testing in our study population. A larger study is needed to demonstrate that indicated testing may be safely eliminated in selected patients undergoing ambulatory surgery without increasing perioperative complications.

Primary closure versus T-tube drainage after open common bile duct exploration

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Background: Between 5% and 11% of people undergoing cholecystectomy have common bile duct stones. Open common bile duct exploration is an important operation when endoscopic retrograde cholangio-pancreatography fails or when expertise for laparoscopic common bile duct exploration is not available. The optimal method for performing open common bile duct exploration is unclear.
Objectives: The aim is to assess the benefits and harms of primary closure versus routine T-tube drainage in open common bile duct exploration for common bile duct stones.
Search Strategy: We searched The Cochrane Hepato-Biliary Group Controlled Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL) in The Cochrane Library, MEDLINE, EMBASE, and Science Citation Index Expanded until January 2006. SELECTION CRITERIA: We considered for inclusion all randomised clinical trials comparing primary closure (with or without biliary stent) versus T-tube drainage after open common bile duct exploration. DATA COLLECTION AND ANALYSIS: We collected the data on the characteristics, methodological quality, mortality, morbidity, operating time, and hospital stay from each trial. We analysed the data with both the fixed-effect and the random-effects model using RevMan Analysis. For each outcome we calculated the odds ratio (OR) with 95% confidence intervals (CI) based on intention-to-treat analysis.
Main Results: We included five trials with 324 patients randomised: 165 to primary closure without stent and 159 to T-tube. Three of the five trials were considered to have adequate methodological quality, but all lacked blinded outcome assessment. The primary closure group had significantly lower positive bile culture (3 trials, OR 0.22, 95% CI 0.10 to 0.45) and wound infection (5 trials, OR 0.29, 95% CI 0.15 to 0.56). When only trials with high methodological quality were included, there was no statistically significant difference in any of the outcomes except positive bile culture, which became non-significant when the random-effects model was used. The deaths of the three patients in the T-tube group were directly related to surgery and sepsis. Bile peritonitis was higher in the T-tube group (2.9%) than in the primary closure group (1%) (not statistically significant). Hospital stay was significantly longer in the T-tube group compared with the primary closure group in three of the four trials, which reported on the hospital stay. The only trial comparing primary closure with stent (37 patients) versus T-tube drainage (44 patients) did not reveal any statistically significant difference in any of the reported outcomes (mortality, re-operations, wound infection, and hospital stay). There was one case of stent migration, which could not be retrieved after two attempts of ERCP.
Authors' conclusions: Primary closure after common bile duct exploration seems at least as safe as T-tube drainage. We need randomised trials that assess whether stents may offer benefits.