Diabetes mellitus in patients presenting with adhesive small bowel obstruction: delaying surgical intervention results in worse outcomes

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INTRODUCTION: The impact of diabetes mellitus (DM) on outcomes in patients undergoing emergency operations for adhesive small bowel obstruction (ASBO) is unknown.

METHODS: Patients requiring operation for ASBO were identified using the American College of Surgeons National Surgical Quality Improvement Program database from 2004−2010. Propensity score matching was used to match diabetic patients with non diabetics in a ratio of 1:3. Mortality, surgical site infections (SSI), systemic infectious complication (SIC), acute renal failure (ARF) and myocardial infarction (MI) were compared between the two groups. The impact of delaying operating room >24 hours was also analyzed.

RESULTS: A total of 1,608 patients were matched, 1,204 without DM and 402 with DM. Overall, patients with DM were more likely to develop SIC (31% vs. 22%, p=0.032), ARF (5% vs. 3%, p=0.041), sepsis (13% vs. 8%, p=0.047) and MI (4% vs. 1%, p=0.029). DM had no effect on the incidence of small bowel resection. In the group of patients undergoing an operation within 24 hours of admission, DM had minimal effect on outcomes when compared to non diabetics. However, when the operation was delayed >24 hours after admission, DM was associated with a significantly higher incidence of SIC, ARF and MI (39% vs. 26%, p=0.036; 8% vs. 2%, p=0.003 and 5% vs. 1%, p=0.017 respectively).

CONCLUSIONS: This study suggests that patients with DM and no major comorbid conditions, undergoing surgery within 24 hours of admission, are not at a higher risk for SSI, SIC or organ failure than patients without DM. However, delaying surgery for more than 24 hours, DM resulted in a significantly higher incidence of SIC, ARF and MI than patients without DM.

Modified NASA workload tool identifies physical and cognitive surgeon workload for laparoscopic procedures

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INTRODUCTION: Recent studies report increased patient satisfaction with single port compared to 4-port laparoscopic cholecystectomy. The goal of this study was to measure surgeon workload after single incision (SILC) and traditional 4-port laparoscopic cholecystectomy using Surg-TLX a surgical workload tool modified from NASA-TLX.

METHODS: This study captured surgeon workload data during a concomitant randomized double blinded trial comparing SILC with 4 port laparoscopy (NCT0148943). After the procedure, the surgeon completed the Surg-TLX questionnaire including physical and cognitive workload and procedural complexity. Kruskal-Wallis ANOVAs were used for statistical analysis with α=0.05.

RESULTS: Forty-eight procedures were studied. For the overall data set, cognitive workload scores correlated well with subscores in task complexity, temporal demand, situational stress, physical demands and duration of surgery (p>0.707, p≤0.001). Intention to treat analysis revealed no difference in procedure duration or complexity between SILC and 4-port cholecystectomy. Surg-TLX subscore analysis, using 100-point scales, revealed that physical workload was 89% higher for SILC compared to 4-port cholecystectomy (median 42.5 vs 22.5, p=0.018). Treatment received analysis showed that the total workload for technically difficult SILC requiring placement of additional ports (n=3) was significantly higher with 55.8 points than routine single incision (33.9) or 4-port laparoscopic cholecystectomy (27.5, p=0.037).

CONCLUSIONS: While patient satisfaction is improved with single site cholecystectomy, physician workload is significantly increased. Differences between the routine SILC and 4-port procedures were primarily physical which is not surprising given the ergonomic constraints. Surg-TLX could be used to evaluate the surgical environment for ergonomic improvements.

An international, multicenter, randomized, single-blind, controlled trial of a dry-powder, fibrin sealant for mild to moderate perioperative surgical bleeding

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INTRODUCTION: Topical hemostatic agents are important adjuncts for controlling surgical bleeding. The objective of this study was to evaluate the safety and efficacy of a dry-powder, fibrin sealant containing human plasma-derived thrombin and fibrinogen in reducing time to hemostasis (TTH).

METHODS: Multicenter, randomised control trial (RCT) (clinicaltrials.gov: NCT01527357) comparing fibrin sealant plus gelatin sponge vs. gelatin sponge alone in 4 surgical indications (spinal, hepatic, vascular, soft tissue), run in parallel as independently-powered trials for efficacy and pooled across indications for safety. Adult patients with mild/moderate surgical bleeding were randomized 2:1 to fibrin sealant or gelatin sponge during surgery. The primary efficacy endpoint was a comparison of the time to hemostasis...