

O194 - Technology

Happymed; Going to the Movies Whilst Undergoing Endoscopic Surgery

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Aim: Patients may experience different levels of anxiety before, during and after surgery. Studies show that anxiety during the perioperative period is highly correlated with the perception of pain. The effect of anxiety on pain perception may result in an increased use of postoperative analgesic. Non-pharmacological therapy to treat perioperative anxiety has gained popularity. Literature illustrates that listening to music preoperatively lowers levels of anxiety. There are indications that visual distraction in addition to audio might lead to an improved anxiolytic effect, and may support patients' feelings of comfort and well-being after surgery.

Methods: In this METC approved, currently running prospective randomized control study, 50 patients undergoing orthopedic laparoscopic procedures under loco-regional anesthesia are randomly assigned to an intervention group (audiovisual) or a control group (audio only). The intervention group uses videoglasses, presenting a relaxing type of scenic wildlife film while the control group listens to preferred music during surgery.

Results: Data on blood pressure, pulse, Visual Analogue Scale to assess pain, administered pain medication and patient satisfaction are retrieved. The level of anxiety is measured through the use of a validated questionnaire.

Conclusion: Use of private cinema screening during surgery is a novel concept, gaining much public and press attention. Indeed, it is anticipated that the use of audiovisual distraction will lead to a stronger reduction in anxiety and stress through the use of video glasses in comparison with audio only. Our study assesses the anticipated reduction in the administration of medication (anxiolytics and analgesics). If so, the use of videoglasses during surgery can be considered as a valuable non-pharmacological intervention that may lead to a preference shift both in patients and anesthesiologist towards the selection of loco-regional above general anesthesia. At this time, it is known that patients often prefer general anesthesia over loco-regional anesthesia even though evidence shows loco-regional anesthesia has better short term outcomes. Watching a movie during surgery allows optimal distraction. Offering videoglasses during surgery ultimately leads to a change in attitude towards loco-regional anesthesia, however future studies are necessary to support this line of reasoning. During presentation, setup is shared and preliminary results are presented.

O195 - Technology

A Randomized Comparison of a New Haptic Feedback Laparoscopic Grasper Versus a Conventional Laparoscopic Grasper in a Live Porcine Model

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Aim: The Force Reflecting Operation Instrument (FROI) is a new laparoscopic grasper, designed to provide haptic feedback in minimally invasive surgery. After pre-clinical simulation studies for optimizing its features, the aim of this study was to assess functionality and potential benefits as well as to compare its usability to a conventional grasper in an in vivo setting.

Methods: This study was approved by the Dutch Central Authority for Scientific Procedures on Animals and took place in the Central Animal Laboratory of Nijmegen. A standard laparoscopic surgical setup was used to perform laparoscopic surgery on pigs. Eleven international laparoscopic experts including general surgeons, gynecologists and urologists participated in this study. They performed colorectal, gynecological or urological procedures bilaterally. In a randomized order, each surgeon once used the FROI and once used the conventional grasper. Participants were asked to complete a quantitative questionnaire for assessing five specific features of the laparoscopic graspers on a six-point Likert scale ranging from zero to five. Additionally, to capture opinions regarding the overall experience with the FROI compared to a conventional grasper, participants were requested to complete a qualitative questionnaire consisting of eight open questions.

Results: The surgeons rated the features 'tissue consistency sensation' (4.0 vs. 1.9), 'arterial pulse detection' (4.3 vs. 0.5) and 'force control' (3.9 vs. 1.6) significantly better for the FROI compared to the conventional grasper ($p < 0.001$). No significant differences were found for 'time control' (2.5 vs. 2.6) and 'muscular demand' (2.9 vs. 2.2). The most underlined points from the qualitative assessment were improved soft tissue handling and the clinical relevance of the haptic feedback technology for complex procedures. Moreover, ten participants reported the value of the FROI in minimizing tissue damage. No safety issues were reported.

Conclusion: Through this study, the FROI features including tissue consistency sensation, arterial pulse detection and force control were validated in an in vivo setting. Moreover, the added value of haptic feedback technology in a live surgical setting has been approved by a multispecialty group of expert laparoscopic surgeons.

O196 - Technology

Indocyanine Green in Laparoscopic Surgery: Cholecystectomy, colon Resection, Liver Resection the St. Luke's Medical Center (philippines) Experience

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Identification of biliary anatomy, adequate colonic perfusion prior to colonic anastomosis and adequate margins of resection are very significant in laparoscopic cholecystectomy, colon and liver resection respectively.

This paper aims to present Indocyanine Green (ICG) as one innovation attempting to decrease the associated morbidities in the aforementioned laparoscopic procedures. In this presentation, indocyanine green was used in 12 cases of laparoscopic cholecystectomy, 2 cases of laparoscopic colon surgery and 1 case of laparoscopic liver resection. Equipment used if KARL STORZ Image 1 SPIES, full HD camera system with 30-degree 10 mm laparoscope with filter capable of detecting Near Infrared (NIR) fluorescence. For laparoscopic cholecystectomy: pre-operative administration of ICG was given 1–24 hours at 0.25–0.33 mg/kg. Intraoperative IV administration of ICG was given at 0.11–0.33 mg/kg. For laparoscopic colon surgery: intraoperative administration of ICG prior to anastomosis was given at 0.33 mg/kg. For laparoscopic liver surgery: pre-operative administration of ICG was given 2 h prior to surgery at 0.50 mg/kg.

For the results in laparoscopic cholecystectomy: after some initial dissection, the cystic duct, common bile duct and cystic duct—common hepatic duct junction were all identified. Vascular anatomy delineated in 75% of the patients. No ductal leaks noted post-dissection. No common bile duct stones identified. Mean operative time was around 1.5 h. No intraoperative complications were noted. Length of hospital stay was 1–2 days. There were no morbidities or mortalities observed. In laparoscopic colon surgery: Adequacy of vascular perfusion prior to anastomosis of resected bowel segments were assessed by the surgical team thru fluorescence angiography. No morbidities and evident anastomotic leakage noted post-operatively. Length of stay was 4–5 days. In laparoscopic liver resection: ICG was administered intravenously preoperatively to identify/localize the tumor. Uptake of ICG was inspected during the surgery. It was used as a guide prior to liver resection, alongside with intraoperative ultrasound, for adequacy of margins. No morbidities observed intra and post-operatively. Length of hospital stay was 4 days.

ICG fluorescence imaging is a simple, safe and significant technique that enables highly sensitive identification of biliary anatomy, vascular perfusion in colon surgery and tumor localization in real time laparoscopic liver surgery.

O197 - Technology

Does a 3D Laparoscope Reduce the Time to Perform Cholecystectomy When Compared to a 4 K Laparoscope? A Randomised Controlled Trial

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Aims: Laboratory-based studies have proven the performance advantages of 3D laparoscopes over 2D laparoscopes, owing to binocular depth perception. However, the associated cost, extra equipment and side effects of 3D systems limit their use. The increased resolution associated with new 4 K imaging systems may provide better depth perception than current 2D systems. This randomised controlled trial aims to determine whether 3D systems provide performance benefits over 4 K systems.

Methods: One-hundred and twenty patients undergoing elective laparoscopic cholecystectomy are being randomised to 3D or 4 K laparoscopy under 3 Consultant surgeons. Operations are being recorded in 2D high definition. Operations are graded (1–3) for difficulty for analysis. The primary outcome is time to complete the procedure (from exposure of the gallbladder to complete separation from the liver). An interim analysis is presented here.

Results: Thirty-seven patients have been recruited to the trial. Thirty-three completed the trial, whilst 4 were excluded (3 due to incomplete videos and 1 was cancelled due to medical reasons). Seventeen patients were randomised to the 3D arm and 16 to the 4 K arm. Twenty-four (73%) were female. Median age was 52 (27–85). Indications were: biliary colic (13 patients), cholecystitis (11), obstructive jaundice (6), cholangitis (1), gallstone pancreatitis (1) and gallbladder polyp (1). Three operations were graded as grade 1 (9%), 16 as grade 2 (48%) and 14 as grade 3 (42%). Overall, there was no significant difference between the median time to complete the procedure in the 3D group (19 [11–78] minutes) and 4 K group (25 [7–56] minutes; $p=0.82$). The median time to complete grade 1 gallbladders was 17 [11–19] minutes. There were no grade 1 gallbladders in the 4 K group. There were no significant differences between laparoscopic systems for the median time to complete grade 2 (3D: 18 [12–40] minutes vs. 4K: 18 [7–56] minutes; $p=0.79$) or grade 3 gallbladders (3D: 45 [19–78] minutes vs. 4K: 34 [19–53] minutes; $p=0.35$).

Conclusion: This trial is the first to compare 3D and 4 K laparoscopic systems in the clinical setting. Further participants will be recruited to determine whether 3D provides performance benefits over 4 K.