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Oral Presentations

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KARL STORZ - EAES AWARD SESSION

O001 - Intestinal, Colorectal and Anal Disorders

OXIDATIVE STRESS IN OPEN AND LAPAROSCOPIC COLECTOMY FOR COLORECTAL CANCER: A RANDOMIZED CONTROLLED STUDY

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Introduction: Laparoscopic surgery is implicated with increased oxidative stress. On the other hand, surgical trauma and manipulation of the intestine during open surgery cause increased inflammatory response and oxidative stress generation. Our study aimed to investigate and compare different oxidative stress markers in patients underwent laparoscopic (LAP) or conventional resection (OP) for colorectal cancer.

Materials and Methods: Sixty patients with colorectal cancer were assigned randomly in two groups (LAP and OP) of 30 patients each. The mean end point of the study was to analyzed and compared different oxidative stress markers between the groups. Lipid peroxidation was analyzed by measuring 8-epiPGF2a, protein oxidation by protein carbonyls (CP), damage by nitrogens by 3-nitrotyrosine (3-NT), and RNA damage by 8-OHG. Blood samples were collected preoperatively, 5 min after pneumoperitoneum deflation (LAP), or after the end of GI tract manipulation (OP), 6 h, and 24 h after the operation.

Results: Comparison of 8-epiPGF2a between the groups showed significant difference at 6 h ($p < 0.0001$), and 24 h postoperatively ($p < 0.03$). In OP decreased significantly 24 h postoperatively compared to preoperative values ($p < 0.0001$). In LAP showed significant decrease 5 min after pneumoperitoneum deflation ($p < 0.0001$), 6 h ($p < 0.0001$), and 24 h postoperatively ($p < 0.0001$). Comparison of CP between the groups showed no differences. Variations of PC in each group, in each time interval are no significant. Comparison of 3-NT between the groups showed significant difference at 6 h ($p = 0.01$), and 24 h postoperatively ($p = 0.014$). In LAP decrease significantly 24 h postoperatively ($p = 0.027$). Comparison of 8-OHG between the groups showed significant difference 24 h after the operation ($p = 0.009$). In LAP significantly decrease found 24 h postoperatively ($p = 0.016$).

Conclusion: This study has proved that laparoscopic surgery for colorectal cancer is associated with lower oxidative stress, compared to open surgery, during the early post-operative period. (Registered Clinical Trial no NCT00928928; www.clinicaltrials.gov)

O002 - Physiology, Pathophysiology, Immunology

ROLE OF RESTRICTED FLUID THERAPY IN LAPAROSCOPIC AND OPEN COLORECTAL SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Background: Sub-optimal fluid therapy during peri-operative time period may influence the postoperative mortality and morbidity. The aim of this article is to systematically review the randomized trials analysing the restricted fluid therapy (RFT) and non-restricted fluid therapy (NRFT) in patients undergoing laparoscopic and open colorectal surgery.

Methods: A simple model was applied to evaluate the various variables reported in the published randomized, controlled trials comparing the role of RFT and NRFT by the use of principles of meta-analysis. The primary outcome measure was postoperative morbidity. Secondary endpoints were mortality and hospital stay. A random effects model was applied. Results: Seventeen randomized, controlled trials on 2,165 patients were included. The incidence of postoperative morbidity (odds ratio, 0.84; 95% CI, 0.57, 1.24; $z = 0.90$; $p = 0.37$) and mortality (odds ratio, 0.93; 95% CI, 0.47, 1.84; $z = 0.20$; $p = 0.84$) was statistically similar following the use of either RFT or NRFT. In addition, both techniques of fluid therapy were associated with similar length of hospital stay (standardized mean difference, -0.12 ; 95% CI, -0.55 , 0.31 ; $z = 0.53$; $p = 0.59$).

Conclusion: This meta-analysis suggests that RFT in patients undergoing laparoscopic and open colorectal surgery does not offer any advantage over NRFT.

O066 - Endocrine Surgery

ADRENAL INCIDENTALOMAS: A RETROSPECTIVE STUDY OF 115 OPERATED CASES AND ANALYSIS OF THE ACCURACY OF PREOPERATIVE DIAGNOSIS OF MALIGNANCY

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Aims: With the increasing use of imagery as a diagnostic tool, we are confronted with a rise in the incidence of adrenal incidentalomas. Surgical indication is based mainly on the presence of hormonal secretion, which is relatively straightforward to establish, and on the risk of malignancy. The aim of this study was to analyze our data on operated incidentalomas and determine the accuracy with which we can determine the malignant potential of a lesion preoperatively.

Methods: Using prospectively collected data from 225 successive adrenalectomies performed in our institution, a retrospective analysis of all cases of adrenal incidentalomas selected for surgery from 1988 until November 2011 was done.

Results: A total of 115 patients with incidentalomas were operated in this interval, mean age 63 ± 16 years (SD). Laparoscopy was the chosen surgical approach in 90 patients (78%). There were no postoperative morbidities or mortalities. Diameter of the lesions ranged from 10 to 140 mm, mean 41.8 ± 22.3 mm. More specifically, malignant lesions ranged from 55 to 140 mm in diameter with a mean of 79.3 ± 30.5 mm. 77.7% of neoplastic lesions measured greater than 60 mm in diameter compared with only 10.7% of benign ones. A diagnosis was posed based on radiologic appearance of the lesion in 94 of the cases (81.7%). Pathology results came back as neoplastic in 10 cases (8.7%), of which 8 were suspected preoperatively, with a diagnostic accuracy of 80%. On the other hand, diagnostic concordance in the pathologically benign cases was only 41.7%, a benign lesion considered potentially neoplastic 32.1% of the time.

Conclusion: Posing the surgical indication in cases of adrenal incidentalomas may sometimes be difficult. Our data shows that we tend to over-diagnose malignancy. This allows us not to miss a neoplasm but also leads to potentially avoidable surgery. In the laparoscopic era, the morbidity of adrenalectomy is considerably lowered and surgical risk is then outweighed by the need to confirm or infirm the neoplastic origin of the lesion. However, the surgical decision must still be thoroughly pondered based on the appearance and size of the lesion and on the patient's characteristics.

O067 - Endocrine Surgery

TRANSORAL THYROIDECTOMY USING NEW MANDIBULAR PERIOSTEAL APPROACH: NATURAL ORIFICE TRANSLUMINAL ENDOSCOPIC SURGERY FOR THYROID GLAND

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Aims: Although endoscopic thyroid surgery is gaining wide acceptance, however, existing endoscopic methods for thyroidectomy also have been blamed for necessity of more flap dissection and longer operative time. More recently, transoral techniques for endoscopic thyroidectomy have been reported to overcome the limitations of previous approaches. However, previous transoral approaches have also shown limitations such as limited operative view and collision of endoscopic instruments. Herein we present our initial experience of new transoral thyroidectomy using mandibular periosteal approach in cadaver and porcine models, which showed better operative view with lesser limitation of motions during operation.

Methods: Transoral thyroidectomies using mandibular periosteal approach were performed in five human fresh cadavers. After cadaveric experience, four living pigs underwent the same operations to evaluate the feasibility and safety of the new approach. Total thyroidectomies were performed in all cadavers and pigs using standard endoscopic instruments. In animal study, follow-up examinations were carried out for 7 days and followed by autopsy. **Results:** Through three trocars in mandibular periosteal area, it was possible to create a working space under the platysma muscle and to reach the pretracheal and thyroid space without a problem. Total thyroidectomies were performed and all the ten recurrent laryngeal nerves were preserved in all five cadavers using the method. Mean operative time was 89.8 (55–132) min. After the procedure, we identified intact mental nerves in all cases. In four orally intubated living pigs, total thyroidectomies were also performed via transoral, mandibular periosteal approach without complications. Postoperatively, oral intake and white blood cell count remained normal in all cases. Pain reactions were not recorded during postoperative phase. On the postoperative sacrifice of the pigs, three locally encapsulated seromas were observed under the platysma muscle, but no definite sign of infection was observed. And both recurrent laryngeal nerves were intact in all cases.

Conclusion: Transoral thyroidectomy using mandibular periosteal approach might be feasible, effective and safe.

O068 - Endocrine Surgery

VIDEO-ASSISTED ENDOSCOPIC THYROID AND PARATHYROID SURGERY USING GASLESS SKIN LIFTING METHOD-AN EXPERIENCE OF 569 CASES

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We have developed video-assisted endoscopic thyroid surgery using gasless skin lifting method in 1998 and termed it the VANS method. Since then, more than 560 cases have been operated on by this procedure. We here report surgical technique and cosmetic advantage of our method in thyroid surgery.

Patients who underwent the VANS method included benign thyroid nodule, papillary carcinoma, Graves' disease, Hashimoto's thyroiditis, parathyroid disease. The main incision was made on the chest wall where was concealed by open-neck clothing. The working space was obtained by lifting two pieces of Kirschner wire that were horizontally inserted into subcutaneous layer of the anterior neck. Those two wires were lifted up by two handles with chain that were connected to reverse L-shaped bar fixed to the operating table. The endoscope was inserted through 5-mm lateral neck wound. A sufficient working space could be secured and ultrasonically activated scalpel (UAS) was mainly applied throughout the operation.

Selected complications were paralysis of external branch of the superior laryngeal nerve, the recurrent nerve and relapse of Graves' disease. Transient or permanent nerve paralysis was mainly due to heat stimulation by UAS. Relapse of Graves' disease was due to inadequate estimation of the remnant thyroid weight. The insertion of endoscope at the contra-lateral side of the neck enabled to improve and recover paralysis dramatically by identification of other side of the recurrent nerve.

The VANS method is concise, suitable and practical and safe procedure for thyroid diseases besides having cosmetic advantages. However, preoperative precise evaluation is important to select suitable indication.

O069 - Endocrine Surgery

COMPARISON OF VENTRAL (ABBA) AND DORSAL ACCESS (ENDOCATS) INVISIBLE SCAR ENDOSCOPIC THYROIDECTOMY PROCEDURES

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Background: There are several invisible scar endoscopic thyroidectomy procedures available today. We present our data comparing the unilateral single port dorsal approach (EndoCATS procedure) with the ventral approach (ABBA procedure) technique.

Materials and Methods: We recorded monocentric clinical data from October 2010 to January 2011 concerning preoperative demographic data, thyroid pathology, intraoperative course, postoperative course and complication rate as well as feasibility of both techniques. **Results:** 60 Patients underwent an invisible scar endoscopic procedure. Unilateral disease was mainly treated with EndoCATS, bilateral diseases with ABBA procedure. Patients were comparable concerning demographic parameters. Duration of surgery was 110 min. for EndoCATS and 180 min. for ABBA procedure. Concerning our complications we had one permanent and one temporary RLN palsy, 6.7% postoperative hypocalcaemia, no permanent postoperative hypoparathyroidism, 10% temporary local paraesthesia and one revision due to a postoperative haematoma but 0% bleeding.

Conclusion: Both techniques are feasible and safe. The single port approach is technically more demanding but goes along with less postoperative discomfort. Safety of both techniques concerning the observed complications hemorrhage, RLN palsy and postoperative hypoparathyroidism is similar to conventional open surgery mainly due to intraoperative neuronavigation.