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Poster Award

A CASE REPORT: A HUGE ATRIAL MYXOMA LOCATED IN RIGHT ATRIAL CHAMBER WITH CAUSED SEVERE TRICUSPID VALVE REGUR- GITATION

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Background: Myxomas are the most common primary cardiac tumors. Myxomas most commonly occur in the atria. Approximately 75% arise in the left atrium (LA), and 15% to 20% arise in the right atrium (RA). We report a case of a large myxoma in RA, which is a huge obstructive and uncommon location for this type of tumor.

Objective: The purpose of this paper is to report a case of a large myxoma in RA, which is a huge obstructive and uncommon location, and treatment recommendation.

Methods: Case presentation; a 32-year-old Thai woman, with no underlying disease, who complained of progressive chest pain and dyspnea on exertion in the last three months prior to admission. A cardiovascular examination revealed that her heart rhythm was regular with

pansystolic murmurs at the left parasternal border. Chest X-ray (CXR) showed clear lung fields, cardiomegaly with globular heart shape and biatrial enlargement. An electrocardiogram showed sinus rhythm with 1st degree AV block and right axis deviation with the right bundle branch block. A transthoracic echocardiogram (TTE) showed a moving huge heterogenous mass in the RA with stalk attached to lateral RA wall that protrudes to the Right Ventricle (RV); good ejection fraction (EF) = 71%.

Results: Our patient underwent surgical treatment with conventional cardiopulmonary bypass technique. We performed an excision of a 7 × 5 × 9 cm. mass which was implanted at the junction between the openings of inferior vena cava, coronary sinus and protrude tricuspid valve (TV) which caused severe TV regurgitation and severe anulus dilation that is difficult to repair. Finally, we proceeded to tricuspid valve replacement (TVR) with tissue valve. With regard to the post operative follow-up, in 6 months the EKG showed sinus rhythm with 1st degree AV block. The chest X-ray showed clear lung fields with normal heart size. A TTE showed good EF and good TV function with no chamber enlargement.

Conclusion: In this case report, the emphasis is on the rarity of the huge myxomas in the RA and protruding TV which caused severe TV anulus dilatation and has difficulty to repair; a TVR with tissue valve was finally carried out.

Keywords: Huge myxomas, Right atrium myxomas, Tricuspid valve replacement

INCIDENCE OF COMPLICATED APPENDICITIS DURING THE COVID-19 PANDEMIC: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Measures taken to prevent the spread of coronavirus disease 2019 (COVID-19) slow surgical processes, and patients are avoiding presenting at emergency departments during the outbreak because of fears of contracting the contagious disease.

Objectives: This meta-analysis aimed to analyze the rate of complicated appendicitis before and during the COVID-19 pandemic.

Methods: We systematically reviewed the PubMed and SCOPUS databases for articles published from 2000 to 2021. The primary outcome of complicated appendicitis incidence was compared between before and during the COVID-19 pandemic period. We performed a meta-analysis using a random-effects model analysis.

Results: A total of 3,559 patients with acute appendicitis were included. The overall rate of complicated appendicitis was significantly higher during the pandemic (relative risk, 1.55; 95% confidence interval [CI], 1.26–1.89). The time from onset of symptoms to hospitalization was 0.41 hours longer during the pandemic, which was not significantly different (standardized mean difference, 0.41, 95% CI, –0.03 to 1.11). The operating time during the pandemic was significantly shorter than that before the pandemic (83.45 mins and 71.65 mins, $p = 0.01$).

Conclusions: Our study found a correlation between the pandemic and severity of acute appendicitis. The higher rate of complicated appendicitis in the pandemic period indicates that patients require timely medical attention and treatment despite fears of contracting disease.

Keywords: Acute appendicitis, Complicated appendicitis, COVID-19, SAR-CoV-2

LAPAROSCOPIC-ASSISTED IVOR-LEWIS ESOPHAGECTOMY WITH DOUBLE TRACT RECONSTRUCTION, FIRST CASE IN SONGKHLA PROVINCE

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Background: Esophagogastric junction (EGJ) cancer is a low prevalent cancer therefore it does not have the standard of treatment. Various type of resection and reconstruction have been done. In part of resection, proximal gastrectomy with distal esophagectomy is the optimal operation because of concerning about the margin of resection and regional lymph node clearance. For reconstruction, esophagogastric anastomosis was performed for a long time but recent research reveal reflux esophagitis and anastomotic stricture as a long term sequelae of this type of anastomosis. Recently, it is report of new reconstructive type for proximal gastrectomy. Double tract reconstruction is a type of reconstruction that was developed to overcome this problem and many literatures show a benefit in lowering chance of reflux esophagitis and anastomotic stricture.

Objective: To present case of EGJ cancer that was treat with Ivor-Lewis esophagectomy with double tract reconstruction.

Methods: 78 year old man, He present with dysphagia and body wight loss. Esophagogastric scope was reviewed circumferential mucosal mass at EGJ (35 cm from incisor). This tumor does not invade to fundus and lesser curvature. Pathologic report from biopsy is moderate differentiated adenocarcinoma.

1 month before esophagogastrectomy, we created feeding jejunostomy to improve nutrition. For adequate margin and lymph node harvesting, we decided to do laparoscopic-assisted proximal gastrectomy plus Ivor-Lewis esophagectomy.

Results: Upper gastrointestinal contrast study was done at postoperative day 10. The contrast could pass through both remnant stomach and small bowel without leakage. Final pathologic staging was T3N0M0 and free resection margin. The patient can be discharged from hospital at postoperative day 12 without any complication. At follow up on 2 weeks after discharge, the patient can eat regular diet without obstruction and do not developed reflux symptom. He was sent to medical oncologist to request for chemotherapy.

Conclusions: Laparoscopic-assisted Ivor-Lewis esophagectomy with double tract reconstruction is feasible and the best choice to prevent risk of postoperative reflux esophagitis and anastomotic stricture.

Keywords: Esophagogastric junction cancer, Esophagectomy, Double tract reconstruction

THE SUCCESS OF SECONDARY WOUND HEALING IN HUGE CHRONIC UNHEALED ACETABULAR WOUND USING HEMOGLOBIN SPRAY

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Objective: A wound resulting from hip disarticulation required a flap to close the large dead space in the acetabulum. The possibility of using a flap from the abdomen and gluteus was limited due to a suprapubic cystostomy and a grade IV pressure ulcer at the sacrum and ischium. Negative pressure wound therapy (NPWT) could have been beneficial for promoting granulation tissue, but this patient could not tolerate pain. To manage this complex case, a decision was made to use topical haemoglobin spray* (comprising purified haemoglobin which can bind oxygen from the atmosphere and diffuse it into the wound bed to increase oxygen availability to the wound tissue) to accelerate healing.

Methods: Case report: Thai male 55-year-old

patient was diagnosed with bilateral aortoiliac artery occlusion and treated with a bypass graft from the right axillary artery to the right common femoral artery. Subsequently, an above-knee amputation of the right leg was required. The patient developed a large wound at the acetabulum, resulting from left hip disarticulation. He also had a grade IV pressure ulcer at the left ischium and sacrum. The patient also had a suprapubic cystostomy performed due to an infected wound at the perineum.

Result: During his hospital stay, the patient received debridement and NPWT for two sessions for the left acetabulum wound. However, he could not tolerate the pain. Therefore, to promote healing, topical haemoglobin spray was applied once daily. The wound completely healed within 12 weeks.

Conclusion: Topical haemoglobin spray dressing may be beneficial for the management of complex wounds. When treatment options were limited for this patient, topical haemoglobin spray was associated with successful healing by secondary intention.

USEFULNESS AND OUTCOME OF WHOLE-BODY COMPUTED TOMOGRAPHY (PAN-SCAN) IN TRAUMA PATIENTS: A PROSPECTIVE STUDY

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Background: Severe trauma mechanism can cause multi-organ injury which physicians can missed a significant organ injury lead to increase morbidity and mortality rate.

Objectives: Pan-scan detected of significant injury and lead to proper management including of prioritization for the patients without delay.

Methods: A prospective study from January 2019 to March 2021 trauma patients whom were triage in trauma level I and II, and dangerous mechanism. A retrospective of trauma patients who underwent selective scan before implementation of pan-scan protocol were collected for clinically benefit compared.

Results: A total of 22 patients were enrolled in prospective study. The pan-scan detected significant organ injury 86%. Prioritization of organ management has change after underwent pan-scan in 64% (major change 64.29% and minor change 35.71%). Base of skull fracture, small bowel injury, retroperitoneal injury, kid-

ney and bladder injury, and occult pneumothorax were statistically significant found by pan scan ($p < 0.05$). There was no agreement between occult pneumothorax and base of skull fracture after underwent pan-scan with kappa scale -0.084 and -0.073 retrospectively. Door to CT time trend to faster in pan-scan without statistically significant compared to selective scan, 59.5 (34) mins and 72 (86) mins (p -value = 0.13).

Conclusions: Pan-scan help detected significant injury in hidden area such as base of skull, small bowel, and retroperitoneum lead to proper management and prioritization of management.

Keywords: Pan-CT scan, Whole body CT scan, Trauma, Pan-scan, Multiple trauma

Free Paper Cardiovascular Thoracic Surgery

RELATIONSHIP BETWEEN RV-TO-LV RATIO AND IN-HOSPITAL MORTALITY IN PATIENT WITH ACUTE MASSIVE PULMONARY EMBOLISM; PRELIMINARY STUDY IN SONGKLANAGARIND HOSPITAL

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Background: Acute pulmonary embolism (PE) is a rare condition that has high morbidity and mortality. With good resolution of CT angiographic study, severe of PE can be evaluated in more details.

Objective: This study aims to look for core-relation between parameters derived from preoperative CT and in-hospital mortality in patient with acute massive PE.

Methods: A retrospective review of patient with acute massive PE in our institute was conducted from the year 2009 to 2019. Data were retrieved from electronic medical records and radiological archives. Thrombus size was calculated by measuring three-dimension of

intrapulmonary arterial thrombus, RV/LV means ratio of the greatest diameter of mid-chamber of right ventricle and left ventricle respectively.

Results: A total of 43 patients were included in this analysis (28 Female and 15 Male). Average age was 55.4 years (range 15-79 years). The most underlying conditions were malignancies, renal insufficiency and venous thromboembolism. In-hospital mortality 10 in 43 cases (23.2%). Median clot size was 20.9 milliliters (IQR 11.9-27.6), Median RV to LV ratio was 1.58 (IQR 1.22-1.85). Factor associated with in-hospital mortality included pre-operative blood pH (p -value 0.02) and post-operative blood pH (p -value < 0.01). RV to LV ratio in mortality case was 1.8 while in survival case was 1.6 (p -value = 0.12). However, when removed 3 outliers from analysis, RV to LV ratio in mortality case was significantly higher than that of the survival cases (p -value = 0.03)

Conclusion: RV to LV ratio maybe a predictor of mortality in a patient with acute massive PE. The study should be continued to include more data.

Keywords: Pulmonary embolism, Computerized tomographic pulmonary angiography, RV to LV ratio, Mortality

Free Paper General Surgery

A COMPARISON OF OUTCOMES BETWEEN MULTICENTRIC AND MULTIFOCAL BREAST CANCER VERSUS UNIFOCAL BREAST CANCER IN RAJAVITHI HOSPITAL

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Background: The current 8th edition of the AJCC staging system of breast cancer defines tumor stage using only the largest tumor focus. This method may underestimate the total tumor burden in multifocal and multicentric breast cancer (MMBC). The optimal surgical treatment for multiple ipsilateral breast cancer remains a long-debated subject. The prognostic significance of multifocal and multicentric breast cancers are not well established.

Objectives: we evaluated whether patients with multifocal and multicentric breast cancer have different outcomes compared to unifocal disease in term of survival.

Methods: The subjects of this retrospective study were patients who underwent definitive surgery for invasive breast carcinoma at our hospital between October 2013 and January 2016. Prognostic factors and outcomes were collected from hospital database. The patient who received neoadjuvant therapy, or in metastatic stage was excluded. We evaluated overall survival using the Kaplan-Meier method.

Results: Of the 223 patients, 18 (8.1%) had multifocal-multicentric breast cancer (MMBC). The MMBC group was worse in histologic grade ($p = 0.015$), N-stage ($p = 0.006$), pathologic stage ($p = 0.034$) and more positive HER-2 ($p = 0.001$). The Overall survival were 101.2 months in patients with UBC, and 64.6 months in patients with MMBC ($p = 0.142$). All of the patient in MMBC group underwent total mastectomy.

Conclusions: Multifocal-Multicentric breast cancer are more likely to have poorer prognostic factors, they have higher histologic grade, higher in N-stage and pathologic stage. However, MMBC itself may not be predictive of a worse outcome. Our findings support the current TNM staging system of using the diameter of the largest lesion to assign T stage.

Keywords: Breast cancer, Multicentric, Multifocal, Tumor size, Survival

A SURVIVAL OUTCOMES OF POST D2GASTRECTOMY FOR ADVANCED GASTRIC CANCER TREATMENT, A DECADE EXPERIENCE IN VAJIRA HOSPITAL

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Background: Gastric cancer is one of the leading causes of cancer death worldwide. Gastrectomy with D2 lymph node dissection (D2 gastrectomy) is the standard treatment for resectable disease. The role of multimodality treatment and minimally invasive surgery have been proposed but the results of real-world practice are limited.

Objective: To evaluate overall survival (OS) and disease free survival (DFS) of gastric cancer patients who underwent D2 gastrectomy in Vajira Hospital. The factors that related to survival outcomes were evaluated.

Methods: The retrospective data of 71 gastric adenocarcinoma patients who underwent surgery at Vajira Hospital between 1 January 2012 – 30 April 2020 was reviewed. The patient characteristics, OS, DFS and prognostic factors were evaluated.

Results: The median age of patient was 67 years (range 27 to 94). Majority of patients was advanced cancer, 45.1% in stage III and 14.1% in stage IV, respectively. Most of patients (47 patients, 66.2%) underwent laparoscopic surgery. The lower 1/3 of stomach was the most common location of cancer (35 patients, 49.3%). The median number of dissected and metastatic lymph node were 30 nodes (range, 6-94) and 3 nodes (range, 0-28), respectively. A 71.8% of patients were received chemotherapy either as neoadjuvant treatment (4.2%) or as adjuvant therapy (67.6%). With the median follow up time at 22 months (range, 0-128), the 5 years OS was 69.2% and 5 years DFS was 44.6%. The multivariate showed the presence of positive peritoneal cytology was

the poor prognostic index for DFS (HR, 147.9, 95% CI, 8.6-2553.9).

Conclusion: The outcomes of the patients with advanced gastric cancer that undergone D2 --gastrectomy operation in Vajira Hospital were analyses in 5-years overall survival was 69.2% and 5-years disease free survival was 44.6%. The positive peritoneal cytology associated with poor DFS.

ACCURACY OF DIETARY EVALUATION PROGRAM FOR PATIENTS IN RAJAVITHI HOSPITAL

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Background: Nutritional assessment, by evaluating food consumption is important and necessary in surgical patients because in pre-operation and post-period then increase energy consumption, then the surgical patients are at the risk of malnutrition.

Objective: The aim of this study was to evaluate the accuracy test of dietary evaluation program by comparing the total energy and protein intake to the dietary evaluation program and weighted caloric count.

Methods: A prospective study from 30 surgical patients who eat soft or regular diet in Rajavithi Hospital from October 2020 to May 2021. The recorders of this research will fill out the administered dietary evaluation program, then they will calculate to total energy (kcal) and protein intake (gm) that will be compared to the standard method from weighted food caloric count.

Results: The mean of total energy from the dietary evaluation program and the caloric count were 1786.50 ± 629.51 and 298.642 ± 103.018 kcal (p -value = 0.218). The mean of total protein intake was 75.39 ± 30.25 and 77.87 ± 32.31 gm (p -value = 0.037), and Pearson's product moment correlation coefficient of total calories and total protein between the dietary evaluation program and the caloric count were 0.940 (p -value < 0.001) and 0.959 (p -value < 0.001). The comparison of total energy and total protein between the dietary evaluation program and the caloric count, was different < 15%, accuracy rate was 86.66% (SE = 0.021) and 66.66% (SE = 0.04). And there is no difference of total energy and protein intake in lunch (p -value = 0.107).

Conclusions: The dietary evaluation program can

be used to assess total energy and protein intake in the surgical patients because the mean of total energy and protein between the dietary evaluation program and the caloric count was not significantly different, and Pearson's product moment correlation coefficient of total calories and protein between the dietary evaluation program and the caloric count was related which was compared

AVERAGE DIAMETER OF ABDOMINAL AORTA IN THAI PATIENTS BY MULTIDETECTOR COMPUTED TOMOGRAPHY, A SINGLE-CENTER STUDY

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Background: One of the indications for elective surgery in AAA concerns with the diameter of the aneurysm (≥ 5.5 cm in man and 5.0 cm in woman). Normally, an average diameter of aorta is affected by sex, race and age. A pilot study shows the normal average diameter of the abdominal aorta of Thai people is smaller than to Caucasian. There are few literatures about average diameter of abdominal aorta in Thai people. This data can be used as reference and would affect future studies.

Objective: To measure diameter of abdominal aorta in multi-segments in both coronal section and transverse section for a reference of a normal average diameter in Thai adults, both male and female.

Methods: In 2018, all patients age more than 50-year-old who underwent CT abdomen with contrast media were randomized for 400 peoples in each age groups (50s, 60s, 70s and 80s or older) by computer. After exclusion criteria, 280 subjects were recruited. Abdominal aorta was measured for its diameter in 4 segments; supra-renal, infra-renal, aortic bifurcation, and common iliac artery (CIA) both right and left. Each segment was measured in two-dimension, coronal and transverse view.

Results: The difference of average diameter by sex in all level were statistically significant; suprarenal (male 23.0 ± 2.4 mm, female 20.8 ± 2.2 mm, $p < 0.01$), Infrarenal (male 18.1 ± 1.9 mm, female 15.9 ± 2.0 mm,

$p < 0.01$), Aortic bifurcation (male 17.6 ± 2.1 mm, female 16.0 ± 2.4 mm, $p < 0.01$), Right CIA (male 11.3 ± 1.9 mm, female 10.3 ± 2.0 mm, $p < 0.01$), Left CIA (male 11.0 ± 2.0 mm, female 10.1 ± 1.9 mm, $p < 0.01$). and the average diameter of aorta was also statistically significant by age group such as Suprarenal level (50s 19.9 ± 1.9 mm, 60s 20 ± 1.7 mm, 70s 21.4 ± 2.6 mm, 80s and older 21.8 ± 2.1 mm, $p < 0.001$).

Conclusion: Age, Sex, and Race have correlation to diameter of abdominal aorta. It is useful for further study about the risk of rupture of AAA in Thai patients which can may change the indication of elective surgery.

Keywords: Average diameter abdominal aorta, Factors affect diameter aorta, Normal aorta

CHARACTERISTICS OF TRAUMATIC PNEUMOTHORAX IN SEVERE TRAUMATIC BRAIN PATIENTS FROM ROAD TRAFFIC ACCIDENT

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Background: Pneumothorax is a common condition in blunt chest injury. This condition maybe missed diagnosis during clinical assessment in unconscious patients with the emergency condition. The delay diagnosis increases morbidity and mortality rate.

Objectives: Primary objective of the study was to determine characteristics for screening and diagnosis of traumatic pneumothorax condition in severe traumatic brain patients from road traffic accident. Secondary objective was to determine prevalence of traumatic pneumothorax condition in severe traumatic brain patients from road traffic accident.

Methods: The retrospective study reviewed in medical records of the 15-year-old and above patients with severe traumatic brain injury by traffic accident from 1 January 2009 to 31 December 2018. The patients were divided into two groups; the pneumothorax and without pneumothorax. Pneumothorax was diagnosed by surgeons at the emergency department with clinical manifestations from ATLS such as dyspnea, decrease breath sound, trachea shift, subcutaneous emphysema and others. Signs of pneumothorax on chest radiographs or CT and presenting of air leakage after intercostal drainage. The data were analyzed using with R program.

Results: Six hundred and eighty-six patients were

identified. Five hundred and eighty-seven patients were males (87%) with median age 33 years. The cause of traffic accident was from motorcycle 571 (83.3%), motor vehicle 76 (11%) and pedestrian injuries 39 (5.7%). One hundred and twenty-two patients (18%) were diagnosed pneumothorax. A comparison between patients in pneumothorax and without pneumothorax from univariate revealed ISS score = 29 ($p < 0.001$), systolic blood pressure 128 mmHg ($p < 0.045$), pulse rate 106/min ($p = 0.005$), $SpO_2 = 94$ ($p < 0.001$), high number of rib fracture ($p < 0.001$) were significant factor in pneumothorax group. On multivariate analysis revealed only $SpO_2 \leq 95$ (odds ratio, 5.12; $p = 0.002$) were significant factor in pneumothorax group. There was no difference between the two groups in diastolic blood pressure, respiratory rate, trachea shift, wound at chest wall, lung contusion. In pneumothorax group about 50% had normal breath sound, and just only 25% had subcutaneous emphysema.

Conclusions: Hypoxemia, $SpO_2 \leq 95\%$ significantly to be parameter for diagnosis of traumatic pneumothorax condition in severe traumatic brain patients. Subcutaneous emphysema was found only 25% and normal breath sound cannot be excluded for traumatic pneumothorax condition.

Keywords: Pneumothorax, Traffic injury, Pneumohemothorax, Blunt chest injury

COMPARATIVE OUTCOMES OF GI STIMULANT DRUGS; DOMPERIDONE (MOTILIUM®) VERSUS MOSAPRIDE CITRATE (GASMOTIN®) IN POSTOPERATIVE PEPTIC ULCER PERFORATION PATIENT, RANDOMIZED CONTROL TRIAL

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Background: Enhanced recovery after surgery (ERAS) protocols was achieved to used in elective surgery. Early oral feeding in post-operative patients can shorten time of hospital stay and decrease costs and risk of infection.

Objective: The study was carried out to compare two oral prokinetic drugs in Hatyai Hospital for promote the oral feeding in post-operative peptic ulcer perforation repair patient.

Methods: This trial was conducted with the 50 participants who diagnosed with peptic ulcer perforation who were operated by suture repair with omental patch

in Hatyai Hospital. Post-operative patients randomly allocated to two group. Both groups received oral diet in 24 hours postoperative. First group received Domperidone and another group received Mosapride citrate, time of hospital stay and complication were recorded.

Result: Fifty patients were included. Each group were 25 patients. There are not significant differences time of hospital stay between Domperidone group and Mosapride citrate group (66.92 and 73.52 hours, $P = 0.915$). Complication rate is not significant different.

Conclusion: Early oral feeding in patients who underwent perforated peptic ulcer repair appeared to be as safe. No prokinetic drugs has superior effect than each other.

Keywords: GI stimulant drugs, Enhanced recovery after surgery, Peptic ulcer perforation

COMPARISON OF CLINICAL OUTCOMES BETWEEN PLASTIC AND LUMEN-APPPOSING METAL STENT FOR ENDOSCOPIC ULTRASOUND-GUIDED PANCREATIC FLUID COLLECTIONS DRAINAGE IN RAJAVITHI HOSPITAL

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Background: EUS-guided drainage is the procedure of choice to treat pancreatic fluid collection (PFC) and traditionally using plastic stent placing through the created fistula tract between transmural and the pancreatic pseudocyst or wall-off pancreatic necrosis (WON) for drainage. Rajavithi Hospital has first imported lumen apposing metal stent (LAMS) since November 2016 for drainage of WON according to the necrotic tissue made more thickness of the content causing difficult to drain and for further performing necrosectomy if needed. No available clinical results have been studied to compare with plastic stents.

Objectives: The primary outcome was to compare the duration of stent stay of EUS-guided PFC drainage between plastic stent and LAMS. The secondary outcomes were to compare the technical success, adverse event, procedure time, and cost of procedure.

Methods: This was a retrospective study that had been using the database of patients with PCF who underwent EUS-guided drainage from the Department

of General Surgery, Rajavithi Hospital, Thailand since November 2016 to October 2020.

Results: A total of 31 patients with PFCs who were underwent EUS-guide transmural drainage. Plastic stents were used in 10 patients, and 21 patients used LAMSs. The mean duration of stent stay was 74.20 days in plastic stent group and 63.95 days in LAMS group ($p = 0.512$). The overall technical success rate was 96.8%. The time procedure of LAMS group was significantly longer ($p = 0.032$). Overall procedure-related adverse events occurred in 2 of 31 patients (10.0% in plastic stent groups VS 4.8% in LAMS group, $p = 1.000$). The total procedure-related costs were 38,056.1 THB in plastic stent groups and 93,498.7 THB in LAMS groups ($p < 0.001$).

Conclusion: EUS-guided drainage of PFCs by using LAMS had safe and effective for drainage of PFCs. LAMS is suggested to treat the PFCs especially in WON.

Keywords: Pancreatic fluid collection, Endoscopic ultrasound-guided drainage, LAMS

COMPARISON OF OUTCOMES OF STANDARD TOTALLY EXTRAPERITONEAL (TEP) AND ENHANCED VIEW TOTALLY EXTRAPERITONEAL (eTEP) TECHNIQUE IN INGUINAL HERNIA REPAIR; A PILOT RANDOMIZED CONTROLLED TRIAL STUDY

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Background: Nowadays, laparoscopic inguinal hernia repair has become the standard treatment of inguinal hernia repair. Two standard techniques are totally extraperitoneal approach (TEP) and trans-abdominal preperitoneal approach (TAPP). TEP technique have more strength than TAPP in that it is not injure peritoneum and has lower risk of intra-abdominal organ injury. However, TEP also have its weakness in limited space of dissection. Many modification techniques of TEP have been proposed. Enhanced view TEP (eTEP) is one of the popular techniques which to overcome aforementioned limitation. There has been no study comparing the result of TEP and eTEP until now.

Objective: This study compared intraoperative and postoperative outcome of patient received TEP and eTEP technique repair.

Methods: Forty-one patients with inguinal hernia were enrolled in this pilot study. Twenty-seven patients received TEP repair and twelve patients received eTEP repair. The demographic data, intra-operative variable (including operative time, estimated blood loss, intra-operative findings, mean arterial pressure, EtCO₂, and intra-op complication) and post-operative variables (post-operative pain, patient satisfaction, post-operative complication) were recorded.

Results: The Demographic data of patients, operative time and estimated blood loss were similar in both groups. There were 2 conversions from TEP to TAPP. There was 1 recurrence in TEP group during follow up. The post-operative pain in both groups has no differences and not exceeds 6 (from VAS 1-10). All patients have satisfied for operation and for wound in both group but have more satisfaction more for wound in TEP group. (p -value 0.024).

Conclusion: eTEP is the modification technique of TEP which provide same perioperative outcome and lower conversion rate (to TAPP approach) comparing with standard TEP. The drawback of eTEP is less cosmesis result of surgical scar.

DO WE NEED FASCIAL CLOSURE FOR 12 MM TROCAR? A COMPARATIVE STUDY OF TROCAR SITE HERNIA WITH LONG-TERM FOLLOW-UP

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Background: Fascial wound closure was recommended for the prevention of trocar site hernia (TSH) when using ≥ 10 mm size trocar. Although, the incidence of TSH was rare. Therefore, we would like to identify the necessity of fascial closure in a 12-mm non-bladed trocar with long-term cross-sectional imaging follow-up.

Methods: 254 patients undergone laparoscopic surgery with 12 mm non-bladed trocar at Minimally Invasive Unit, Siriraj Hospital between July 2010 and December 2018 were retrospectively analyzed. All of

the patients have cross-sectional imaging for evaluation of TSH. 70 patients (111 ports) were categorized into “fascial closure” group and 184 patients (279 ports) were categorized into “non-fascial closure” group.

Results: Median interval of follow-up time was 43 months. We identified TSH 3 patients in non-fascial closure group whereas no TSH in fascial closure group [3/279 (1.1%) vs 0/111 (0%), $p = 0.561$]. Two TSH cases were asymptomatic and one of two cases was received elective repair surgery.

Conclusion: There is no significant difference of TSH between the fascial closure and non-fascial closure group in this recent study. However, the number of patients in the fascial closure group is limited.

Keywords: Laparoscopy, Trocar site hernia, Port site hernia

EFFICACY OF 2% XYLOCAINE VISCUS IN PAIN CONTROL AFTER POST HEMORRHOIDECTOMY: A RANDOMIZED CONTROLLED TRIAL

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Background and Objective: In a general population about 5% is affected by symptoms related to hemorrhoid which is usually conservatively treated. Patient who fails medical treated are candidate for surgical treatment however, post-operative pain is main challenges and frequent complaints. Therefore, to determine efficacy of 2% xylocaine viscus in pain control after post hemorrhoidectomy, a randomized controlled trial was done.

Methods: A total of 40 elective hemorrhoidectomy patient was recruited and double-blind randomized patient into two group. After surgery, one group received 2% xylocaine viscus and other group received placebo KY-jelly. Pain measurement was done using visual analog scale (VAS) 2 hours, 6 hours, 12 hours and 24 hours after surgery which is the primary outcome. Secondary outcome is the requested frequency and dosage of morphine, first spontaneous voiding time, frequency of single urinary catheterization was obtained.

Results: A total of 40 patients were included in Randomized control trial (20 in each group). The result revealed that 2% xylocaine viscous group has significantly lower pain score compare to placebo group

($P < 0.05$, 95% CI 0.84 to 3.46) especially 6 hours after post-operation. The frequency and dosage of morphine injections, frequency of catheterization was significantly lower in 2% xylocaine viscous group. There was no statistically significant difference between the intervention and control group of sex, ages, BMI, operative time and number of hemorrhoids excised. ($p > 0.05$ for all). No post operation or systemic complications were observed in both groups.

Conclusion: 2% xylocaine viscous decreased pain intensity and morphine requests, reduced the frequency of single catheterizations after hemorrhoidectomy.

Conflict of interest: There are no actual or potential conflicts of interest to declare.

Keywords: Hemorrhoidectomy, Pain post hemorrhoidectomy, Xylocaine viscous

ENDOVASCULAR STRATEGIES AND 10-YEAR-OUTCOMES FOR TREATMENT OF ASYMPTOMATIC ABDOMINAL AORTOILIAC ANEURYSM

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Background: Abdominal aortoiliac aneurysm (AAIA) has been reported involvement about 10% of abdominal aortic aneurysm. Endovascular treatment of AAIA is challenging due to the internal iliac artery (IIA) involvement. IIA embolization and limb extension to external iliac artery (IIAE + EE) to avoid type 1B endoleak may result in ischemic complications. IIA preservation strategy, which are bell-bottom technique (BBT; iliac limb ≥ 24 mm) and iliac branched device (IBD) is proposed to avoid these complications.

Objective: To compare early and late outcomes among three endovascular approaches for AAIA.

Methods: From January 2010 to December 2019, 174 patients with asymptomatic AAIA divided into 147 of non-IBD (IIAE + EE and BBT) and 27 of IBD were enrolled (82.8% male; median age 76 years; range 56-90 years). Three endovascular strategies consisted of 106 of BBT, 113 of IIAE+EE, and 32 of IBD. Primary outcomes were intra-operative limb complications and

30-day mortality. Secondary outcomes were postoperative buttock/pelvic ischemia, freedom of re-intervention among three strategic treatments, and overall survival at 10 years follow-up.

Results: Intra-operative limb complications were not statistically significant among BBT (7.5%), IIAE+EE (3.5%), and IBD (3.1%), P -value = 0.349. There was no statistical significance in perioperative mortality between non-IBD group (1.4%) and IBD group (0%), P -value = 1). During 10 years follow-up, the rate of iliac limb reintervention was significantly higher in BBT compared with IIAE+EE and IBD (12.3%, 1.8%, and 6.2%, P -value = 0.004). The incidence of buttock claudication was significantly greater in bilateral IIAE+EE group compared with unilateral IIAE+EE and no IIAE group (25%, 11%, and 2.5%, P -value < 0.004), similarly with the incidence of pelvic organ ischemia (15%, 1.2%, and 0%, P -value < 0.001) There was no statistical significance in overall 10-year survival rates between non-IBD and IBD groups (44.4% vs 46.3%, P -value = 1).

Conclusions: The early and late mortality were comparable between non-IBD and IBD groups. To avoid pelvic and buttock ischemic complications, IIA preservation strategy should be recommended. It is due to the higher rate of reintervention in BBT group, the IBD strategy might be preferred for AAIA.

Keywords: Abdominal Aortoiliac Aneurysm, EVAR, Iliac Branched Device, Bell-Bottom Technique, Internal Iliac Artery Embolization

EX-SMOKER WAS THE PROGNOSTIC FACTOR FOR AMPUTATION IN PAD IN SRINAGARIND HOSPITAL

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Background: Peripheral arterial disease (PAD) refers to partial or complete occlusion of the peripheral vessels of the upper and lower limbs. The prevalence of PAD is increasing in the future due to the rise in its major risk factors. This disease has high morbidity and mortality. Several factors have been reported (mostly from studies conducted in Western countries) to be associated with major amputation in PAD cases such as DM, HT, Renal disease and drugs.

We conducted a pragmatic study, looking at a 10-year period, aimed at understanding the prognostic factors related to amputation in PAD in a university hospital.

Objective: The outcome of this study was the prevalence of amputation in PAD patient, and its factor.

Methods: This was a retrospective study conducted at faculty of medicine in the Khon Kaen University (Thailand). All patients diagnosed with PAD that were treated between 2008 and 2018 were consecutively enrolled. The diagnosis of PAD was made by clinical presentations or ABI < 0.9. The outcome of this study was the prevalence of amputation in PAD patient, and its factor. Prognostic factors were determined using Logistic regression analysis.

Result: There were 223 PAD patients treated at the university hospital during the 10-year period of the study. The median age of all patients was 65 years (range 59-76 years). Of those, 221 (99.1%) were symptomatic with major tissue loss 81 (36.32%), minor tissue loss 56 (25.11%), ischemic rest pain 54 (24.22%) and claudication 30 (13.4%). A total of 68 patients (30.49%) was amputated. Ex-smoker was the only one significant factor associated with amputation.

Conclusion: Ex-smoker was the prognostic factor for amputation in PAD patient.

Keywords: Peripheral arterial disease, Lower limb amputation

FACTOR RELATED EARLY AND UNPLANNED PERCUTANEOUS TRANSHEPATIC BILIARY DRAINAGE EXCHANGE A RETROSPECTIVE STUDY

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Background: Patients often require more than one time procedure to these disorders and often need to repeat PTBD before the appointment. Many problems are followed after unplanned PTBD such as not enough hospital bed for admission, worsen of patients' symptom. In Rajavithi Hospital, there is not enough data to evaluate the cause of unplanned PTBD, this study's aim to find factors that may increase the risk of early and unplanned PTBD exchange.

Objectives: Percutaneous transhepatic biliary drainage (PTBD) is the common therapeutic procedure

for biliary obstruction in both benign and malignancy conditions.

Methods: A total of 544 PTBD procedures performed in 135 patients at the Interventional radiology department of our hospital between January 2019 to December 2020, were retrospectively evaluated. Baseline characteristic of patients and procedure were assessed. Univariate logistic regression was used to analyze risk factors for requiring unplanned repeat PTBD. Chi-square test or Fisher exact test was used to statistically analyze the results. The level of significance was set at $p < 0.05$.

Results: 101 patients underwent PTBD for malignancy condition (74.8%) and the rest received PTBD for benign condition (25.2%). 71 patients had an unplanned repeated PTBD before their appointment, 56 from 71 patients (55.4%) were diagnosed with malignancy condition. Most common indication was dislodgement (66/71 98.5%). Perihilar Cholangiocarcinoma is the main diagnosis in unplanned group (34/71 47.9%). All these factors included: patient's disease, stage of cancer, size, position, type, fixation of stent was not associated with significant risk of early PTBD exchange.

Conclusion: Although our study shows that no factor was statistically significant relate with risk of early PTBD exchange, patients present with perihilar cholangiocarcinoma tend to have much greater number of unplanned PTBD exchange.

FACTORS AFFECTING THE FREE PERITONEAL CANCER CELLS IN ADENOCARCINOMA OF STOMACH AND ESOPHAGOGASTRIC JUNCTION

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Background: Advance gastric cancer with positive peritoneal cytology M1(cy+) is the marker of metastatic disease with poor prognosis. However, there is no standardized preoperative investigation for prediction.

Objectives: This study was to identify risk factor for M1(cy+) in adenocarcinoma of stomach and esophagogastric junction (GC and AEG) as a primary outcome. The secondary outcome was overall survival and disease-free survival.

Methods: The study included 349 patients who was diagnosed with GC and AEG underwent curative surgery and had peritoneal fluid cytology report in Siriraj hospital. Univariate and multivariate analyses were done for factors associated with positive cytology. Kaplan-Meier analyses was performed for overall survival and disease-free survival.

Results: From January 2005 to December 2020, 349 patients were reviewed who underwent curative surgery and peritoneal washings; 32 (9.2%) had positive cytology; 188 (53.8%) had negative cytology and 129 (36.9%) had atypical cell cytology. Poorly differentiation, T4 staging, N3 staging and LN ratio > 0.4 were significantly associated with positive cytology. Multivariate analysis revealed that N3 stage and LN ratio > 0.4 were significant risk factor affected cytology. In subgroup analysis in patients age under 70 years found that AEG type II and III (OR 7.06, $p = 0.009$) and LN ratio > 0.4 (OR 14.68, $p = 0.024$) were associated with M1(cy+). 5-year overall survival of positive, atypical and negative cytology were 8.3%, 27.2% and 25.3% ($p < 0.001$). 3-year disease free survival were 0%, 17.8% and 17.4% ($p < 0.001$) respectively.

Conclusion: Advanced nodal metastasis and poorly differentiated histopathology were associated with positive cytology. Presence of peritoneal cancer cell was associated poor prognosis. Therefore, this study may guide to select patient for preoperative treatment to improve oncological outcome of M1(Cy+) GC and AEG.

IMPACT OF PREOPERATIVE ESOPHAGOGASTRODUODENOSCOPY IN PATIENTS UNDERGOING BARIATRIC SURGERY

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Background: Preoperative esophagogastroduode-

noscopy (EGD) in patients undergoing bariatric surgery can help surgeon detecting the abnormalities in the upper gastrointestinal (UGI) tract that may require a change in surgical plan. However, there is controversy on the need for EGD before bariatric surgery.

Objectives: We aimed to determine the prevalence of UGI abnormalities and to evaluate the predictive factors of abnormal findings that require a change in surgical plan or cause a delay in surgical treatment in patients undergoing bariatric surgery.

Methods: We retrospectively reviewed the medical records of patients undergoing EGD before bariatric surgery from January 2012 to July 2020. The EGD findings were classified into 4 groups based on their effects on management. Group 1 had normal finding. Group 2 had abnormal findings that did not require a change in surgical management. Group 3 had abnormal findings that required a change in the surgical plan or caused a delay in surgical treatment. Group 4 had contraindications to surgery. Predictive factors for the groups requiring a change in surgical plan or cause a delay in surgical treatment (Group 3&4) were analysed using univariate and multivariate analyses.

Results: A total of 461 patient records (63.8% females) were reviewed. Mean age was 35.1 ± 11.2 years and mean BMI was 47.7 ± 8.7 kg/m². The prevalence of endoscopic findings in Groups 1, 2, 3, and 4 were 42.5%, 35.6%, 21.9%, and 0%, respectively. The most common abnormal findings were non-erosive gastritis (31.2%) followed by *Helicobacter pylori* infection (18.7%), and hiatal hernia (10.2%). Male sex and NSAID use were significantly associated with the detection of Group 3&4 lesions either on univariate or multivariate analysis, while type 2 diabetes mellitus (T2DM) was a significant protective factor on multivariate analysis. Subgroup analysis in patient with age ≥ 40 years old, multivariate analysis revealed age, BMI and NSAID use were significantly associated with the detection of Group 3&4 lesions, while T2DM was still a significant protective factor.

Conclusions: There was a high prevalence of abnormal endoscopic findings in Thai patients undergoing bariatric surgery. Preoperative EGD is helpful to screen the UGI abnormalities, particularly in male and patients using NSAID.

Keywords: EGD, Bariatric surgery, Esophagogastroduodenoscopy, Preoperative EGD.

INCIDENCE AND PREDICTIVE FACTORS OF GALLSTONE DISEASES AFTER BARIATRIC SURGERY: A SINGLE-CENTER RETROSPECTIVE STUDY

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Background: Several reports showed high incidence of gallstone diseases after bariatric surgery. The amounts and rate of weight loss is known as the predictive factors for gallstone formation. However, the incidence and predictive factors in Asian populations have not been adequately studied.

Objective: We aimed to evaluate the incidence and predictive factors of gallstone diseases after bariatric surgery in the Thai population.

Methods: Patients who underwent laparoscopic sleeve gastrectomy (LSG) and laparoscopic Roux-en-Y gastric bypass (LRYGB); between 2012 and 2019, were retrospectively reviewed. All patients underwent routine preoperative imaging for gallstone diseases. Follow-up imaging for gallstone diseases was performed every year after surgery, or once the patients became symptomatic. Patients with preexisting gallstone, gallbladder polyp, the absence of postoperative imaging for gallstone diseases, previous cholecystectomy/ bariatric surgery, or taking gallstone-lowering prophylactic agent were excluded. Predictive factors for postoperative gallstone diseases were analyzed using univariate and multivariate analysis.

Results: A total of 243 patients (62.1 % females), who underwent LSG (70.8%) or LRYGB (29.2%), with a mean (SD) age of 36.4 (11.2) years were included for analysis. The incidence of postoperative gallstone diseases was 19.3 % (symptomatic 1.2% and asymptomatic 18.1%), with a median follow-up of 24.6 (range 6.1-98.4) months. Preoperative body mass index (Pre-BMI) was significantly associated with the development of postoperative gallstone diseases [OR (95% CI): 1.07 (1.02, 1.12), $p = 0.004$], while gender, age, comorbidities, type of procedure, percentage of total weight loss and rate of weight loss were not associated with postoperative

gallstone disease developments. Furthermore, patients with a BMI ≥ 50 kg/m² were 3 times more likely to develop postoperative gallstone diseases after bariatric surgery compared to those with a BMI < 50 kg/m² [OR (95% CI): 3 (1.26, 7.13), $p = 0.013$].

Conclusion: The incidence of gallstone diseases after bariatric surgery was relatively high. Pre-BMI was being only predictive factor in this study. Regular screening of gallstone should be considered after bariatric surgery, particularly in patients with high BMI. However, only a few patients developed symptomatic gallstone. Further studies should be conducted to determine the benefit of gallstone-lowering prophylactic agents on the reduction of postoperative gallstone diseases.

Keywords: Incidence, Factor, Obesity, Bariatric, Gallstone

INCIDENCE OF COLORECTAL POLYP AT 4-YEARS IN COLORECTAL CANCER PATIENTS AFTER CURATIVE SURGERY

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Background: In Thailand, colorectal cancer is the third and fourth most common cancer. Surgery is the main strategy of treatment and surveillance program is recommended to monitor the recurrence of the disease. Adenoma-carcinoma sequence is one of the important mechanisms of colorectal cancer. Colonoscopy is essential methods to detect colorectal neoplasm and neoplastic polyp. However, no standard global consensus exists for the details of a follow-up interval for each tool in a surveillance program.

Objective: To determine the incidence and predicting factors of new colorectal polyps at 4-years following curative surgery in colorectal cancer patients who had normal or non-advanced adenomatous polyp at 1-year post-operative colonoscopy.

Methods: Colorectal cancer patients who underwent curative resection at Songklanagarind Hospital by one colorectal surgeon from July 1, 2003 to December 31, 2015 were. A total of 347 patients who had negative results or non-advanced adenomatous polyp at the first-year received colonoscopy 3 years later.

Once a lesion was detected, a biopsy sample was collected. The incidence of polyp was investigated and the predictors associated with the occurrence of polyp were calculated by multivariate logistic regression analysis.

Results: Among 347 patients, 193 (56%) were male and 154 (44%) were female. The adenomatous polyp at second colonoscopy at 4 years after surgery was found in 129 patients (69%) of 187 lesions, with 2 cancer lesions (1%). Patients who had adenomatous polyp at the first postoperative colonoscopy had statistically significant adenomatous polyp detection at 3 years later more than those who had no polyp detection (60% vs 18%, $p < 0.001$). The predicting factors significantly associated with colorectal adenomatous polyp detection at 4-year post operation were age > 70 years (adjusted OR 4.6: 95% CI 1.58-13.41, $p = 0.005$) and hypertension (adjusted OR 1.75: 95% CI 1.05-2.96, $p = 0.038$). On the other hand, primary rectal cancer and right-side colon cancer were significantly associated with a lower incidence of colorectal polyp; adjusted OR 0.41: 95% CI 0.23-0.72, $p = 0.002$ and adjusted OR 0.38: 95% CI 0.17-0.84, $p = 0.017$, respectively.

Conclusions: Incidence of adenomatous polyp detection at 4-year postoperative colonoscopy was one-fourth; therefore, surveillance colonoscopy at this period was essential especially for patients who had adenomatous polyp detection at 1-year postoperative colonoscopy, > 70 years old, hypertension and left side colon.

Keywords: Colorectal cancer, Surveillance colonoscopy, Polyp, Predicting factor

INCIDENCE OF WEIGHT REGAIN FOLLOWING LAPAROSCOPIC SLEEVE GASTRECTOMY (LSG)

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Background: Laparoscopic sleeve gastrectomy (LSG) is the most popular bariatric procedure in treating morbid obesity patients worldwide. LSG is providing the good long term results including weight loss, the resolution of comorbidities and the quality-of-life improvement. Nevertheless, weight regain after LSG is the concern issue and still undetermined.

Objective: To determine the incidence of weight regain after LSG in Srinagarind Hospital.

Methods: Retrospective review of the patients who underwent LSG between July 2011 to January 2019. The patients were tracked two years after operation. Demographic data, lowest and highest weight were collected. The primary outcome was incidence of weight regain after LSG. The secondary outcome was to identify factors correlated to weight regain after LSG.

Results: A total of 112 patients underwent LSG during the study period which complete 2-year follow-up were 73 patients (65.18%). There were 48 female (66%) and 25 male (34%) patients, with median age of 37 years (range; 15-69). The median preoperative body weight and body mass index (BMI) were 109 kg (range; 70-233) and 41.79 kg/m², respectively. The mean excess weight loss (EWL) in 2 years was 76.53% (range; 13.90-83.34). Our study defined weight regain as an increase of $> 25\%$ EWL from nadir. The incidence of weight regain at 2 years after LSG was 13.70% ($n = 10$). Weight regain was higher in larger bougie size more than 38Fr with OR of 1.61 (95%CI 1.002-2.58). The other factors including initial weight, initial BMI, comorbidities were not significantly correlated with weight.

Conclusion: The short-term outcome of LSG has been promising in term of weight loss. The incidence of weight regain after LSG in our study was acceptable. However, the adequate long-term follow-up was needed to evaluate the result of this operation.

Keywords: Weight regain, Laparoscopic sleeve gastrectomy, Morbid obesity, Bariatric surgery

LAPAROSCOPIC CHOLECYSTECTOMY IN THE CRITICAL VIEW OF SAFETY ERA: A SINGLE CENTER ANALYSIS

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Background: The incidence of bile duct injury (BDI) after laparoscopic cholecystectomy is 0.4-1.5%. The critical view of safety (CVS) identification technique is a means to identify cystic duct and cystic artery. This technique can reduce the incidence of biliary injuries.

The three elements of CVS identification are to clearing the hepatocystic triangle, take the lower part of the gallbladder off from cystic plate and identify only two structures that enter the gallbladder. There is reliable evidence that CVS identification is effective in preventing biliary injury.

Objective: To determine the important of critical view of safety timeout technique in laparoscopic cholecystectomy.

Methods: Since November 2015 to November 2019, the data of patients submitted to laparoscopic cholecystectomy in Hatyai Hospital, were included. A critical view of safety (CVS) identification was performed for some patients underwent laparoscopic cholecystectomy. After identified CVS, we also performed CVS-timeout, that announced to colleagues about CVS information. Demographic characteristic of the patients, as well as intraoperative and postoperative complication were recorded.

Results: Data of 1041 patients were analyzed. The study population was categorized into two groups according to the evidence of BDI, present (Group A; $n = 14$) and absence (Group B; $n = 1027$). The non-CVS timeout was found in 50% of procedure in the group A, and 61.5% in the group B and evaluating the operative time of procedure was associated with significantly lower incidence of BDI. Surgical site infection (SSI) is the most postoperative complication, that was about 36 patients (3.45%). The others complication including postoperative collection, cholangitis, incisional hernia was found in few patients.

Conclusions: The CVS timeout technique in laparoscopic cholecystectomy was not associated significantly lower incidence of BDI.

Keywords: Critical view of safety, Laparoscopic cholecystectomy

NEGATIVE APPENDECTOMY RATE IN PATIENT DIAGNOSED WITH ACUTE APPENDICITIS IN SONGKLANAGARIND HOSPITAL DURING 2015 – 2019

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Background: The diagnosis of acute appendicitis has still challenged and often turns out to be the negative appendectomy in the operation. The disadvantages of negative appendectomy do not only waste time and increase the hospital cost unnecessarily but also increase the risk of the patient getting from the operation, anesthesia and post-operative complications.

Objective: This study aims to find the negative appendectomy rate in patients diagnosed with acute appendicitis in Songklanagarind Hospital during 2015-2019.

Methods: This study was a retrospective cohort study in the patients preoperatively diagnosed with acute appendicitis and underwent the appendectomy at Songklanagarind Hospital from January 2015 to December 2019. The negative appendectomy was defined as the final pathologic results confirmed normal, congestion or peri-appendicitis. The categorical data was compared. The logistic regression measured the relationship between dependent and one or more independent variables.

Results: The study population was 892 patients which was 54.3% in female. The five-year negative appendectomy rate was 8.6% ($n = 77$) which was 70% in female ($n = 54$). The factors associated with increasing the negative appendectomy rate were female (OR 2.23, $P = 0.003$), age-40 years old (OR 2.35, $P = 0.003$), no history of diarrhea (OR 2.42, $P = 0.017$). Whereas the factors related to decline the negative appendectomy rate were white blood cell count (WBC) $\geq 10,000$ (OR 0.39, $P = 0.016$), neutrophil (N) $\geq 75\%$ (OR 0.28, $P < 0.001$), positive appendicitis from ultrasonography of abdomen (OR 0.04, $P < 0.001$), and from computed tomography of abdomen (OR 0.07, $P < 0.001$)

Conclusion: The negative appendectomy rate was less than 10% in this study. Female, age 40-years old and history of diarrhea were related to increase the negative appendectomy. The factors that related to decline the negative appendectomy were leukocytosis with cells shift to the left, positive acute appendicitis from abdominal ultrasonography and CT scan. However, to request the further imaging studies to diagnose patients who suspected acute appendicitis depends on the risk and benefit of each patient and investigation.

Keywords: Acute appendicitis, Negative appendectomy, Alvarado score, Factors

OUTCOMES OF EARLY LAPAROSCOPIC CHOLECYSTECTOMY VERSUS DELAYED LAPAROSCOPIC CHOLECYSTECTOMY IN ACUTE CHOLECYSTITIS IN SRINAGARIND HOSPITAL

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Background: Early laparoscopic cholecystectomy (LC) is a modern trend treatment of acute cholecystitis. In Srinagarind Hospital has just followed Tokyo guideline 2018 with concern about complication, conversion and cost effectiveness. The aim of this study was to evaluate the safety, length of stay and overall hospital cost of early LC comparing with delayed LC in acute cholecystitis patients.

Methods: Between January 2012 to March 2021, we carried out a retrospective cohort study in Srinagarind Hospital by finding the inpatient department data. We included an acute cholecystitis patient with early LC (LC within 72 hours after diagnosis) and delayed LC (LC more than 72 hours after diagnosis) with randomly collected data in 61 patients in each group.

Results: The patient characteristic in 2 groups was no different in gender (male (60.66% VS 52.46%); $P = 0.361$), weight (65.6 ± 12.74 VS 65.91 ± 16.88 ; $P = 0.699$) and BMI (24.39 ± 4.33 VS 25.65 ± 6.06 ; $P = 0.376$). The severity of acute cholecystitis was no different in 2 groups [(mild (47.54%: 63.93%), moderate (29.51%: 18.03%), severe (22.95%: 18.03%); $P = 0.172$].

We found statistically significant differentiation between early and delayed LC in mean. Overall hospital cost ($76295.35 \pm 79,041.85$ VS $91,810.31 \pm 104,845.3$ (Thai Baht); $P = 0.007$) length of stayed (8.44 ± 6.66 VS 13.87 ± 5.25 day; $P < 0.001$) and number of ports [3 ports 40.98% ($n = 25$) VS 68.85% ($n = 42$) and 4 ports (59.02% ($n = 36$) VS 31.15% ($n = 19$) $P = 0.002$]. There was no statistically significant differentiation in complication rate (9.8% ($n = 6$) vs 4.9% ($n = 3$); $P = 0.491$), estimate blood loss (75.67 ± 108.73 VS 68.64 ± 176.43 ; $P = 0.095$), operative time (101.57 ± 36.86 VS 110.82 ± 49.20 minute; $P = 0.346$) and conversion rate (14.7% ($n = 9$) VS 18.0% ($n = 11$); $P = 0.807$).

Conclusions: Early LC was practicable and fea-

sible for acute cholecystitis in Srinagarind Hospital. There are safe, shorter length of stay, and lower overall hospital cost with no statistically different of complication rate, operative time and conversion rate. However, the early LC group required a greater number of port than in delayed LC group.

Keywords: Acute cholecystitis, Early laparoscopic cholecystectomy

PATENCY OF BRACHIAL VEIN TRANSPOSITION ARTERIOVENOUS FISTULAS FOR HEMODIALYSIS ACCESS IN RAJAVITHI HOSPITAL

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Background: Nowadays, end stage renal disease (ESRD) is one of the most problem that effect world population. Most of ESRD patients (about 65%) need to hemodialysis. Due to KDOQI guideline "Fistula first", most of ESRD patient must have hemodialysis with arteriovenous fistulas (AVF). In Rajavithi Hospital, we have Brachial artery-Basilic vein transposition AVF operation in the patient that are hostile vascular so this is the point the we want to study the primary patency of BVTs-AVFs.

Objective: Aim of this study are "to study the patency and complication of Brachial vein transposition arteriovenous fistulas for hemodialysis access in Rajavithi Hospital".

Methods: Research design is Retro-Pro prospective study from the data in July 2017 - July 2021 by examining the primary patency of Brachial vein transposition arteriovenous fistulas for hemodialysis access in Rajavithi Hospital. The study data include general information of patients, primary patency and complication of Brachial vein transposition arteriovenous fistulas.

Results: 51 patients underwent Brachial vein transposition arteriovenous fistulas. The primary patency at 3 months, 6 months, 12 months, 18 months and 24 months was analysis by Kaplan-Meier curve the result is 100%, 95%, 60%, 54% and 42% respectively. 14 patients (27%) had post-operative complication. 7 patients (50%) were thrombosed AVF, 3 patients (21%) were AVF stenosis, 2 patients (14%) were central vein stenosis, 1 patient (7%) was infected AVF and 1 patient (7%) was hematoma.

Conclusions: Brachial vein transposition arteriovenous fistulas is one suitable procedure for hostile vascular patients.

Keywords: Brachial vein transposition arteriovenous fistulas, Hemodialysis access, Arteriovenous fistulas, Patency

POSTOPERATIVE SURGICAL COMPLICATIONS AFTER KIDNEY TRANSPLANTATION: A 10-YEAR REVIEW

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Background: Kidney transplantation has been the standard of care in end-stage renal disease. However, surgical complications are still a source of morbidity and mortality.

Objective: To explore the incidence of 90-day postoperative surgical complications following kidney transplantation and their relationship to graft survival in our institution.

Methods: A ten-year retrospective cohort study of consecutive kidney transplant patients from January 2008 to December 2017 ended the follow-up period in December 2019. The incidence and type of postoperative surgical complications within 90 days were determined. Overall graft survival was analyzed using the Kaplan-Meier method. Cox proportional hazard was employed to determine the relationship between surgical complications and graft survival.

Results: Among the total 462 patients, the incidence of 90-day postoperative surgical complications was 17.32% [95% CI: 13.98-21.08%] (n = 80). Surgical complications were bleeding (48.75%), vascular complications (40.00%), urological complications (11.25%), wound complications (6.25%), lymphocele (1.25%). No mortality related to surgical complications was found. The median follow-up was 70.9 months with 37 graft losses observed. The mean graft survival was 133.33 (95% CI: 129.80-136.87) months. Graft survival rates at 1, 3, 5, 7, 10 years were 98.04%, 96.21%, 93.90%, 91.33%, 87.73%, respectively. No significant difference in graft survival between patient with and without complications was observed (HR 1.24 [95% CI: 0.56-2.71],

$p = 0.594$). The causes of graft loss were graft rejection (89.19%) and surgical causes (10.81%). Of those who underwent graft nephrectomy, 2 out of 3 cases resulted from surgical complications including renal venous thrombosis and ureteral necrosis.

Conclusions: Our postoperative surgical complications were comparable with the previously reported. Though not significantly associated with kidney graft survival, they were a major contributor to graft nephrectomy. Early diagnosis and management of surgical complications play an important role in post-kidney transplantation care.

Keywords: Kidney transplantation, Surgical complication, Graft survival

PREDICTION FOR BREAST CANCER IN BI-RADS CATEGORY 4 LESION CATEGORIZED BY AGE AND BREAST COMPOSITION OF WOMEN IN SONGKLANAGARIND HOSPITAL

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Background: Older age and dense breast are the important risk factors for breast cancer. The ACR BI-RADS lexicon 5th edition does not mention how patient age and breast density may affect the category assessment.

Objectives: To investigate whether patient age and breast density influence the positive predictive value (PPV) of mammographic and ultrasonographic findings categorized as BI-RADS category 4 and subcategories 4a, 4b, and 4c among female patients.

Methods: A retrospective study was conducted in Songklanagarind Hospital between January 1, 2016 and December 31, 2017 in female patients older than 18 years who had breast lesions categorized as BI-RADS category 4 and subcategories 4a, 4b, 4c. A total of 961 breast lesions consisted of 772 (80.33%) benign lesions and 189 (19.67%) malignant lesions. Categorization was done in each lesion based on age ranges of ≤ 35 years, > 35 to 60 years, and > 60 years, and breast density were categorized by mammographic breast composition into

“Dense breast” and “Non-dense breast”. The PPV for each BI-RADS category was calculated based on the pathological diagnoses and were compared using the chi-square test.

Results: The overall PPV in each subcategory was in the reference range. The PPV increased with increasing age: 4% vs. 22.63% vs. 36.67% for category 4 (p -value = 0.01); 0% vs. 5.81% vs. 6.88% for subcategory 4a (p -value = 0.002); 6.67% vs. 26.62% vs. 51.35% for subcategory 4b (p -value = 0.001); and 33.33% vs. 76.92% vs. 81.82% for subcategory 4c (p -value = 0.02). The breast density-related PPV was significantly higher in non-dense breast compared to dense breast: 48.78% vs 26.67% for subcategory 4b (p -value = 0.012); and 95% vs 71.42% for subcategory 4c (p -value = 0.034).

Conclusion: A significantly positive association was found between PPV and age in patients in BI-RADS subcategories 4a, 4b, and 4c. The dense breast lowering the effectiveness of mammograms.

Keywords: Age, BI-RADS category 4, Breast cancer, Breast composition, Prediction

PREDICTOR OF ANASTOMOTIC LEAKAGE AFTER COLORECTAL CANCER SURGERY IN HATYAI HOSPITAL

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Background: Anastomotic leakage remains a severe complication after abdominal surgery with considerable morbidity and mortality. The rate of anastomotic leakage varies in studies, but almost always, the incidence is higher in the colorectal resections.

Objective: The aim of this study was to evaluate the predictor for anastomotic leakage after colorectal cancer surgery with anastomosis in Hatyai Hospital.

Methods: This was a retrospective study of 618 colorectal cancer patients who colorectal surgery underwent anastomosis between January 2012 and April 2020. Preoperative data and surgery related variables were examined by univariate and multivariate analyses. The outcome of interest was clinical anastomosis leakage.

Results: The overall anastomosis leakage rate was 10.2 % (58/566). In univariate analysis, rectum cancer (P = 0.001), operative time > 180 min (P =

0.042), intraoperative blood loss > 300 ml (P = 0.033), anastomosis with staple (P = 0.041), albumin < 3 (P = 0.024) were significantly associated with anastomosis leakage. Multivariate analysis identified rectum cancer (odds ratio [OR] 4.01; 95 % confidence interval [CI] 1.25–12.89; P = 0.02), anastomosis with staple (OR 4.58; CI 1.22–17.20; P = 0.024), albumin < 3 (OR 4.62 CI 1.18–15.50; P = 0.033) as independent risk factors for anastomosis leakage

Conclusions: Anastomotic leakage remains a major issue in colorectal surgery. In this study, rectum cancer resection, anastomosis with stapler and hypoalbuminemia should be taken into account when analysing the association between leakage and predictive factors. This suggestion, full awareness of risk factors is essential for identifying high risk patients and properly select them for diverting stomas in order to mitigate the severe clinical consequences of anastomotic leakage.

Keywords: Anastomosis leakage, colonic surgery, rectal surgery

PRELIMINARY RESULTS OF A STUDY ON PREVALENCE OF BACTERIAL AND FUNGAL COLONIZATION ON GASTROSTOMY TUBE

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In the era of elderly society, the incidence of disease induces dysphagia such as neurogenic and GI malignant are increase. Percutaneous endoscopic gastrostomy (PEG) plays a major role for nutritional route access for these kinds of patients. The viability period of PEG still questionably, most of PEG were removed when its physically damages. The biologically index data still unknown. This prospective descriptive study is to compare organism colonization with time of two kind of PEG tube placement. The time that colonization reach virulence level will determine the appropriate PEG exchange time. This study of 59 cases divided in two kind of PEG tube such as retrievable 12 case (20.3%) and non-retrievable 47 cases (79.7%).

The PEG tube was removed when physically damaged or distorted or dysfunctions in various period. Removed PEG tube were cultured separately between intragastric and extragastric part. The organism colony were identified and collected. Average time of PEG removal were 432 days (14-1056 days) and 153.4 days (28-574 days), there are positive culture in 4 (33.3%) and 35 (74.5%) cases for retrievable and non-retrievable PEG respectively. Non-retrievable PEG found bacterial colonization up to 10^5 CFU/ml for 14 cases (29.8%) in average 140.5 days (84-174 days) while colonization in all retrievable type is not exceed the virulence level. The incidence rate of bacterial colonization is 0 per 100 day (95% CI 0-0.071) and 0.147 per 100 day (95% CI 0.081-0.247) for retrievable and non-retrievable PEG respectively ($p = 0.0057$). The outcome of this study shows possibility of bacterial colonization occur in all PEG type and increase to virulence level for non-retrievable significantly higher than retrievable type. This data analysis recommended time to exchange a new non-retrievable PEG should not exceed than 140 days and longer viability for retrievable type can be used until PEG tube damages or dysfunction.

Keywords: Bacterial colonization, PEG, Gastrostomy, Retrievable, Culture

PROGNOSTIC AND PREDICTIVE FACTORS TO DETERMINE 5-YEAR OVERALL SURVIVAL IN STAGE 2 AND 3 COLON CANCER AFTER CURATIVE SURGERY

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Background: The primary treatment of colon cancer stage 3 is surgical resection with adjuvant chemotherapy (CMT) routinely recommended to improve overall survival (OS) but the benefit of adjuvant CMT in stage 2 disease is controversial. Even though, adjuvant CMT is recommended in high-risk stage 2 patients, the 5-year OS not to change.

Objective: To evaluate the 5-year overall survival (OS) of stage 2 and 3 colon cancer patients who underwent curative surgery and to identify prognostic factors that affected the OS.

Methods: This retrospective-prospective study reviewed the medical records of 325 patients who were

diagnosed with colon cancer and underwent curative surgery at Songklanagarind Hospital by one colorectal surgeon between July 2003 and March 2020. Personal factors, clinical factors, and pathological factors were collected. Survival analysis was done and prognostic factors were identified.

Results: The 5-year OS of stage 2 and 3 colon cancer patients who underwent curative surgery was 85% and 74%, respectively. A substage analysis demonstrated 5-year OS rates of 100%, 89%, 81%, 78%, and 70% in stages 3A, 2A, 2B, 3B, and 2C, respectively. Statistically significant factors related to poor OS were age ≥ 65 years (hazard ratio [HR] 4.11, $p < 0.001$), preoperative plasma neutrophil-lymphocyte ratio > 5 (HR 2.25, $p = 0.025$), preoperative plasma D-dimer ≥ 1.3 mcg EFU/ml (HR 1.73, $p = 0.04$), tumor size ≥ 10 cm (HR 2.82, $p = 0.004$), high pT stage (HR 6.68, $p = 0.03$), mesenteric resection margin < 8 cm (HR 15.9, $p = 0.007$), regional lymph node metastasis (HR 2.72, $p = 0.004$), and lymph node ratio ≥ 0.35 (HR 2.06, $p = 0.04$). Compared with early stage 3 patients, the statistically significant factors in late stage 2 patients were high preoperative neutrophil-lymphocyte ratio and D-dimer, large tumor size, high pT stage, and short mesenteric resection margin.

Conclusion: Five-year OS in stage 2 colon cancer patients was higher than those in stage 3. However, preoperative neutrophil-lymphocyte ratio, D-dimer, tumor size, pT stage, and mesenteric resection margin were the prognostic factors to statistically significant result in a poor 5-year OS after curative resection in late-stage 2 colon cancer patients compared with early-stage 3 colon cancer patients.

Keywords: Colon cancer, Prognostic factor, Overall survival

PROSPECTIVE STUDY OF PHYSICAL CHANGE AFTER GASTRECTOMY FOR ADENOCARCINOMA OF STOMACH AND ESOPHAGOGASTRIC JUNCTION

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Background: Most patients who underwent radical gastrectomy experienced high degree of weight loss, and declined physical status. This study based on hypothesis that the patients who receive intensive pre- and post-operative care may result in lower body weight loss.

Objectives: To evaluate physical changes including body weight (BW), body mass index (BMI), % body fat (% BF), basal metabolic rate (BMR), muscle mass (MM), gait speed (GS) and handgrip strength (HGS) after gastric surgery compared between conventional care and intensive care at Siriraj Hospital.

Methods: Patients who underwent gastrectomy for adenocarcinoma of stomach (GC) and esophagogastric junction (AEG) during October 2018 to March 2021 were included. The physical outcomes compared between intensive care (ERAS) and conventional care (CC) were analyzed in all group analysis (all extension of surgery) and subgroup analysis (subtotal gastrectomy includes proximal and distal gastrectomy; total gastrectomy group includes total and extended gastrectomy).

Results: Sixty (31 ERAS, 29 CC) patients were included. ERAS has shorter % weight loss (% BWL) at 1st month in all group analysis (6% vs 9%, $p = 0.036$) and subgroup analysis of total gastrectomy group, (5% vs 9%, $p = 0.034$). There was no different % MM loss between ERAS and CC group at 1st month (5.3% vs 2.9%, $p = 0.411$), 3rd month (4.5% vs 7.2%, $p = 0.618$) and 6th month (6.5% vs 11.7%, $p = 0.45$). There was no different in GS change between groups in all group analysis. But in subgroup analysis, GS in total gastrectomy group recovered within 1 month (-0.13 vs 0.23, $p = 0.018$). In subgroup analysis, there was no different HGS change at 1st month (-0.002 vs 0.02, $p = 0.521$), 3rd month (0.11 vs -0.68, $p = 0.056$) and 6th month (0.05 vs -0.07, $p = 0.252$), there was no different BMR change at 1st month (65 vs 62, $p = 0.923$), 3rd month (91 vs 112, $p = 0.719$) and 6th month (236 vs 167, $p = 0.244$). % BF loss showed no different between groups in all group analysis. In subgroup analysis, % BF loss increase in ERAS at 6th month in total gastrectomy group (68% vs 27%, $p = 0.029$).

Conclusion: ERAS show benefit in lower percentage body weight loss and recovery gait speed in gastric and AEG cancer patient who underwent radical gastrectomy.

Keywords: Adenocarcinoma of stomach and

esophagogastric junction, Gastric surgery, Physical change, ERAS

REPORT OF INCIDENCE OF SEVERELY INJURED PATIENTS FROM TRAFFIC ACCIDENTS AT SRINAGARIND HOSPITAL

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Background: Road traffic injury in Thailand is rising every year and road traffic death is in the second place among all countries.

Objectives: To report the incidence of severe injury from road traffic injury in Srinagarind Hospital and identify factors in pre-hospital setting that may influent severe injury.

Methods: A retrospective study was carried out in Srinagarind Hospital over 1 June 2010 to 31 May 2016, included patients that have been at emergency room (ER) from road traffic accidents. Demographic information, time, type of accidents, type of vehicles, risky behavior such as alcohol drinking, mobile phone using or neglect to wear helmet nor seatbelt were recorded. Injury severity score (ISS) more than 15 was classified as severe injury (SI). Only outcome at ER were analyzed.

Results: Total 15,416 records were analyzed. There were 518 cases with SI, 9 were death at ER and 2,981 were admitted. Most patients were biker (13,432 (87.13%)), age below 25 years (8,443 (55.42%)) and male (8,120 (52.67%)). Major accidents occur during 4.00 PM to 11.59 PM (5,882 cases). SI was statistic significant associated with being male (OR = 3.66 [95% CI: 2.95-4.55]), increasing of age especially more than 65 years (OR = 3.93 [95% CI: 2.64-5.85]), accidents occurred during 00.00 to 7.59 AM (OR 1.99 [95% CI: 1.57-2.53]). Transfer time more than 180 minutes was also associated with SI (OR 2.32 [95% CI: 1.93-2.80]). Helmet and seatbelt using were protective factors from SI (OR 0.3, P -value < 0.001 and OR 0.49, P -value < 0.001 respectively).

Conclusion: Most severe cases were male and associated with increasing of age. Even though there was law of using protection during driving, only few would comply and affected with more SI. Nighttime and longer time before arrived hospital were also associated

with more SI which can be an emphasis on emergency trauma team at pre-hospital setting.

RISK FACTOR OF MORTALITY IN NECROTIZING FASCIITIS PATIENTS AT HATYAI HOSPITAL

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Background: Necrotizing fasciitis (NF) is aggressive skin and soft tissue infections characterized by necrosis of the fascia and subcutaneous tissue, accompanied by severe systemic toxicity, associated with higher mortality rate if delayed diagnosis and surgical intervention. Early diagnosis and treatment will decrease mortality rate.

Objective: Aim of this study to identify risk factor that increase mortality rate in patients with NF and developed clinical scoring for predicted mortality rate in NF patients.

Methods: Retrospective cohort study was performed in Hatyai Hospital from January 2015 to July 2019 medical records, microbiological tests and laboratory parameters of 296 NF patients were reviewed for the study. Multivariate with logistic regression analysis was used to explored for potential predictor, and internal validation was done with Cross-validation method.

Results: Total 296 patients were diagnosed with NF. The results showed that mortality rate and survive were 54(18.24%) and 242(81.76%) respectively. According to multivariable with logistic regression showed Chronic kidney disease (OR 6.68, 95% CI 1.90-23.55); pulse rate (OR 1.05, 95% CI 1.02-1.08); Fasting blood sugar (OR 1.01, 95% CI 1.00-1.01); treatment (OR 1.98, 95% CI 0.99-3.93) were risk factor of mortality in NF patient. The developed clinical score was comprised of Chronic kidney disease, pulse rate, Fasting blood sugar and treatment, the area under ROC curve was 0.824.

Conclusions: Prognosis factor of mortality in NF were Chronic kidney disease, pulse rate, Fasting blood sugar and treatment, patients who have these condition should perform closed monitoring and aggressive treatment to decrease mortality.

Keywords: Risk factor, Clinical predictor, NF, Mortality, Prognosis

SINGLE-INCISION LAPAROSCOPIC CHOLECYSTECTOMY VS THREE-PORT LAPAROSCOPIC CHOLECYSTECTOMY: A RETROSPECTIVE STUDY AT CHIANGRAI PRACHANUKROH HOSPITAL

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Background and Objectives: Laparoscopic cholecystectomy is the standard treatment for most gallbladder diseases. Single-incision laparoscopic surgery was introduced aiming to decrease the invasiveness of the procedures. The aim of this study was to compare the clinical outcomes of SILC with Three-port LC.

Methods: This was a retrospective chart review of 126 Thai patients with symptomatic cholecystolithiasis who were enrolled for laparoscopic cholecystectomy by a single surgeon at Chiang Rai Prachanukroh Hospital, Thailand from July 2016 to December 2019. 63 patients underwent single-incision laparoscopic cholecystectomy (SILC group); other 63 patients underwent three-port laparoscopic cholecystectomy group (LC). The primary endpoints were postoperative pain score (at 4 hours and 12 hours) and patient complications, while the secondary outcomes were operative time, estimated blood loss, opioid requirements, and duration of hospital stay.

Results: The result showed no differences between both groups regarding baseline characteristics. According to the visual analog pain scale, pain at 4 hours postoperatively was significantly lower in the SILC group (3.92 ± 1.68 vs 4.86 ± 1.63 , $p < 0.05$) but showed no difference at 12 hours postoperatively. The total morphine consumptions were not different between the two groups (median 3.0, IQR 6 in SILC vs median 3.0, IQR 4 in TILC, $P = 0.611$). Operative time was similar in both groups (45.9 ± 16.59 in SILC vs 51.48 ± 18.54 in TILC, $P = 0.077$). No statistically significant differences were found between both groups with regard to perioperative, postoperative complications, length of hospital stay, readmissions, and mortality.

Conclusion: Single-incision laparoscopic cholecystectomy (SILC) has shown to be a safe and feasible procedure with a low complications rate in selected patients with no difference in wound pain. It provides the patient an almost non-visible scar while preserving the optimal quality of surgery.

Keywords: Laparoscopic cholecystectomy, Single-port, Three-port, Post-operative pain, Safety

STRATEGIES AND OUTCOMES IN MANAGEMENT OF ABDOMINAL AORTO-ENTERIC FISTULA

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Background: Abdominal aortoenteric fistula (AEF) is a rare clinical entity. The goals of surgery are confirmed diagnosis, bleeding control, repair of bowel defect, eradication of infection, and revascularization. Many studies compared open aortic repair (OAR) with endovascular aortic repair (EVAR) in this condition. Aim of this study is to compare the early and late outcomes of AEF in EVAR and open enterorrhaphy (EVAR+OE), EVAR and, OAR.

Objective: To analyze the three strategic treatments for early and late outcomes in AEF.

Methods: Over 16-year period between 2006-2020, 22 patients (13 primary, 15 males, mean age 67.41 years) were included: 10 of EVAR+OE, 6 of EVAR, and 6 of OAR. Primary end point was 30-day mortality. Secondary end point included operative details and post-operative complications. Kaplan-Meier analysis was used to analyze 5-year overall survival and free time re-intervention.

Result: There were no significant differences among groups in baseline characteristics. The most common location of aneurysm was infrarenal (68.2%). Duodenum was the most common site for intestinal involvement (72.7%). OAR had the statistical significance in longer operative time ($p = 0.009$) and higher intraoperative blood loss compared with the other 2 groups ($p = 0.02$). The 30-day mortality was not statistically significant in all groups: 10% (1/10) of EVAR+OE, 16.7% (1/6) of EVAR and, 16.7% (1/6) of OAR ($p = 0.902$). In addition, there were no significant differences in the postoperative complications, intensive care unit and hospital stay. At 5 years follow-up, the overall survival rates in the EVAR+OE, EVAR, and OAR groups were 68.6%, 16.7%, and 83.3%, respectively ($P = 0.105$).

Also, the free time re-intervention among three groups was not statistically significant (90% of EVAR+OE, 66.7% of OAR, and 66.7% of EVAR, $p = 0.396$).

Conclusion: OAR is still the gold standard for AEF with good long-term outcome. Definite treatment with only EVAR might lead to high 30-day mortality and low survival rate at 5 years. EVAR+OE was acceptable postoperative mortality. Furthermore, EVAR+OE could achieve satisfactory the rates of survival and free-time reintervention compared with OAR.

SURVIVAL OUTCOME AND PROGNOSTIC FACTORS OF DISTAL CHOLANGIOCARCINOMA AFTER CURATIVE RESECTION IN NORTH-EAST OF THAILAND

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Background: Cholangiocarcinoma (CCA) had highest incidence in Northeast of Thailand. Perihilar and intrahepatic type CCA had poor prognosis even after curative resection. Survival of distal cholangiocarcinoma (dCCA) remain unclear. The aim of this study was to examine survival and prognostic factors of dCCA after curative surgery.

Methods: 57 patients who underwent pancreaticoduodenectomy between January 2009 and December 2020 for dCCA were included in this study. Survival was estimated using the Kaplan-Meier method. Demographic data, laboratory data, surgical procedure and histopathological data were recorded. Prognostic factors related to survival were analyses by bivariate and multivariable cox proportional hazard model.

Results: The mean age was 63 years and 30 (52.63%) of the patients were female. Jaundice was present at diagnosis in 68.42% of the patients. Post-operative morbidity was 40% including pancreatic fistula 11 (19.30%), wound infection 9 (14.04%) and bile leakage 3 (5.26%). Overall median survival time was 17 months and survival rate at 1, 3 and 5 years were 63.9%, 20.5%, and 17.9%, respectively. Independent prognostic factors were serum bilirubin > 5 mg/dl (HR 2.40, 95% CI 1.11-5.19, p -value = 0.03), pathological T3 (HR 3.32, 95% CI 1.23-8.93, p -value = 0.01), and lymph node metastasis (HR 3.21, 95% CI 1.16-8.86, p -value = 0.02).

Conclusion: Curative resection for dCCA was safe but survival outcome still poor. Adjuvant or neoadjuvant treatment in lymph node metastasis and T3 may improve patient's survival.

Keywords: Distal cholangiocarcinoma, Pancreaticoduodenectomy, Northeast of Thailand

THE EFFICACY OF ERAS IN EMERGENCY SURGERY FOR PERFORATED PEPTIC ULCER

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Objective: To determine the efficacy of Enhanced recovery after surgery (ERAS) toward a group of emergency patients with perforated peptic ulcers (PPU).

Methods: The retrospective observational study was examined between May 2017 and July 2020 at Surin hospital. The comparison between post-operative care of perforated peptic ulcers in high compliance ERAS group (ERAS adherences > 63.6% from selected 17 ERAS adherences) and low compliance ERAS group (ERAS adherences < 63.6%). The primary outcome was length of hospital stays and secondary outcomes were post-operative complications of perforated peptic ulcers.

Results: There were 292 patients assembled in this study that divided into two groups. There were 121 patients in the high compliance ERAS group and 171 patients in the low compliance ERAS group. Mean of length of hospital stays (LOS) was significantly shorter in the high compliance ERAS group (6.42 days, range 2-9) compared with the low compliance ERAS group (7.88 days, range 2-58), $P = 0.000$. Incidence of superficial surgical site infection and pneumonia of the high compliance ERAS group lower than the low compliance ERAS group significantly ($P = 0.016$ and $P = 0.008$).

Conclusion: The ERAS program can adapt for perforated peptic ulcer and decrease length of hospital stays, superficial surgical site infection and pneumonia.

Keywords: ERAS, ERAS in emergency, Perforated peptic ulcer, Upper gastrointestinal surgery

THE EFFICACY OF TOPICAL TRANEXAMIC ACID ON SEROMA AFTER MASTECTOMY

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Background: Post mastectomy seroma is a complication that result in delayed surgical wound healing and the next step specific treatment. Tranexamic acid (TXA) is proven to reduce postoperative blood loss and transfusion.

Objective: To evaluate the efficacy of topical TXA during the wound closure in participants undergoing mastectomy in reducing seroma formation.

Methods: This prospective, double-blind, randomized controlled trial, enrolled women 18-year-old or older with breast cancer, who were underwent mastectomy with or without axillary lymph node dissection at Naresuan University Hospital and Kamphaengphet Hospital between January 15th, 2020 to February 28th, 2021. Participants were randomized to topical TXA or normal saline (placebo) group. The primary outcome was the volume of seroma as measure by drain production within 24 hours. Secondary outcomes were total seroma, duration of drainage and serious complications of the use of topical TXA.

Results: A total of 94 women were randomized and included in this study (47 in the TXA and 47 in placebo group). TXA group reduced mean drain production within 24 hours (114.40 vs 151.09 ml; mean difference 36.68 (95% CI 12.21 to 61.15) ml, $p = 0.004$), reduced mean total drain production (529.89 vs 686.91 ml; mean difference 157.02 (95% CI 4.39 to 309.67) ml, $p = 0.044$), and reduced mean duration of drainage (9.66 vs 11.30 days; mean difference 1.64 (95% CI 0.19 to 3.09) days, $p = 0.027$). There was no significant difference in postoperative complications between TXA and placebo ($p > 0.05$).

Conclusion: The topical TXA has shown benefit in reducing seroma formation and safe.

Keywords: Topical tranexamic acid, Seroma formation, Mastectomy

THE STUDY OF BILIARY CANNULATION TECHNIQUE IN ERCP THAT SUITABLE FOR AMPULLA OF VATER CONFIGURATIONS

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Background: Endoscopic retrograde cholangiopancreatography is a procedure used to diagnosis and treatment of biliary system that requires

selective cannulation of the relevant ductal system. Numerous clinical trials to improve the success rate of biliary access in difficult biliary cannulation during ERCP. However, there are limited data on the biliary cannulation technique in ERCP that suitable for Ampulla of Vater configurations.

Objective: The aim of the study was biliary cannulation technique in ERCP that suitable for Ampulla of Vater configurations.

Methods: Between November 2019 and June 2021, this cross-sectional descriptive study enrolled 215 patients with naïve papillae at Hatyai Hospital. Ampulla of Vater configurations were divided into 8 types including Nipple, Behind fold, Turtle, Wavy, Intra-diverticular, Peri-vaterrian, Bilateral diverticulum and Subpyloric. We collected data of successful biliary cannulation technique that endoscopist used. The primary outcome was biliary cannulation technique that suitable for Ampulla of Vater configurations. The secondary outcomes were variation of Ampulla of Vater configurations and complications.

Results: A total of 215 patients, 139 (64.6%) had Turtle type (Guidewire 74.8%, Pre-cut 17.3%), 21 (9.8%) had Behind fold type (Guidewire 71.5%, Pre-cut 19%), 17 (7.9%) had Peri-vaterrian type (Guidewire 64.7%, Pre-cut 23.5%), 11 (5.1%) had Bilateral diverticulum type (Guidewire 45.5%, Double wire/Parallel pancreatic duct stent 36.4%), 10 (4.7%) had Wavy type (Guidewire 60%, Pre-cut 40%), 9 (4.2%) had Intra-diverticular type (Guidewire 44.4%, Ampulla reposition 33.3%), 6 (2.8%) had Nipple type (Guidewire 66.7%, Double wire/Parallel pancreatic duct stent 16.7%, Ampulla reposition 16.7%) and 2 (0.9%) had Subpyloric type (Guidewire 100%). The overall complication rate was 6% (13/215) (9 mild pancreatitis, 1 duodenal perforation, 3 mild cholangitis) ($\chi^2 = 0.97$).

Conclusion: Guidewire was the most technique that was successfully cannulated all type of Ampulla of Vater configurations. Turtle type was the most common Ampulla of Vater configurations in the study group. ERCP-related complications were not associated with biliary cannulation technique.

Keywords: Ampulla of Vater configurations, Biliary cannulation technique, Endoscopic retrograde cholangiopancreatography, ERCP-related complications.

TIME FROM ONSET TO OPERATION THAT ASSOCIATED WITH RUPTURED APPENDICITIS OR OTHER COMPLICATED APPENDICITIS AFTER CORRECTED WITH CONFOUNDING FACTORS

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Background: Appendicitis is one of the most frequently operative diseases that is found in the surgery department. Ruptured appendicitis is associated with higher morbidity compared with uncomplicated appendicitis such as surgical site infections or prolonged length of hospital stay and increased treatment costs. Delayed treatment might be associated with complicated appendicitis. Hence, selection and prioritization to put the patient on timely treatment is the key of best resource management for patient safety.

Objective: We hypothesized that timing of abdominal pain was associated with complicated appendicitis. The aim of this study was to investigate the predictors of complicated appendicitis. So, these factors can be used for patient selection and prioritization to treatment.

Methods: The studied sample was the patients who were diagnosed with acute appendicitis during March to August 2019 in Hatyai Hospital. The data were analyzed using descriptive statistics, survival analysis and logistic regression.

Results: Of 374 cases reviewed, 281 cases were eligible for analysis due to the completeness of data. Of these, 201 cases (71.53%) were non-complicated appendicitis, 80 cases (28.47%) were complicated appendicitis. The time from first pain to operation (mean $\pm$ SD) is lower in non-complicated appendicitis, compared with complicated appendicitis (25.72 ± 21.30 VS 68.90 ± 68.48 hours, respectively). The risk of complicated appendicitis was increased with increment of delayed treatment every 6, 12, 24 hours with the adjusted OR 1.20, 1.44, 2.07 respectively. Age was also an independent risk factor, with adjusted OR of 2.94 and 6.13 in a group of age 40-60 years and more than 60 years respectively. Additionally, body temperature was a strong predictor with adjusted OR of 3.19 and 12.82 in a group of 37.9-39.0°C and more than 39.0°C respectively.

Conclusion: Time, age and body temperature are the important risk factors of complicated appendicitis.

Keywords: Acute appendicitis, Complicated appendicitis, Time, Risk factors

USE LIVER FUNCTION TEST FOR PREDICTING COMMON BILE DUCT STONE IN ACUTE CHOLECYSTITIS

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Background: Liver functional tests due to cholecystitis might change by inflammatory process and changed in some value changed might help us to stone prediction in common bile ducts and decrease hazards of performing ERCP and other invasive procedures.

Objective: The study aimed to investigate the diagnostic value of liver function enzymes in patients with common bile duct stone that presented with acute cholecystitis in Kamphaeng Phet Hospital.

Methods: A retrospective study was performed on 230 patients with acute cholecystitis from October 2015 to June 2020 in Kamphaeng Phet. And then divided patients to 2 groups, 167 acute cholecystitis with common bile duct stone patients (experimental group), 63 acute cholecystitis without common bile duct stone

patients (control group) Hospital. Blood sample was extracted from each participant, and biochemical tests were performed for ALT, AST, ALP, TB and DB. Receiver operating characteristic (ROC) analysis was performed to evaluate the diagnostic value of each biochemical parameter for common bile duct stone.

Results: The results experimental group had markedly increased serum levels of ALT, AST, ALP, TB and DB than the control group. ROC analysis revealed that of the 6 biochemical parameters, all parameter had area under the curve (AUC) > 0.8. ALT and AST had low sensitivity (75.50%; 79.8%) and low specificity (74.6%; 71.4%) at the optimal cutoff value (≥ 50 U/L; ≥ 55 U/L; 95%). ALP and TB had high sensitivity (84.4%; 80.2%; 82.0%) and low specificity (74.6%; 76.2%) at the optimal cutoff value (≥ 120 U/L; ≥ 1.8 U/L; 95%) stones. ALP, But DB had high sensitivity and high specificity (82.0%; 82.5%) at the optimal cutoff value ≥ 0.9 U/L; 95%.

Conclusion: Logistic regression analysis revealed that ALT and AST were independent predictors of common bile duct (CBD) TB and DB might be recommended as diagnostic biomarkers for CBD stone. The liver function test could be screening method for diagnosis for CBD stone.

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THE DIAGNOSIS VALUE OF SERUM C-REACTIVE PROTEIN AND PLEURAL FLUID AMYLASE LEVEL FOR ANASTOMOTIC LEAKAGE AFTER ESOPHAGECTOMY

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Background: The anastomotic leakage after esophagectomy is significant cause of morbidity and mortality. Early detection and management are crucial to prevent death. Several screening modalities are available to detect anastomosis leakage but no standard of modalities.

Objective: This study evaluates the prognostic effectiveness of pleural fluid amylase levels in detect-

ing early anastomosis leakage after esophagectomy compared with serum c-reactive protein (CRP).

Methods: Between January 2018 and May 2021 46 esophagectomies were performed in our department. Pleural fluid amylase levels and serum CRP levels were collected in 32 of these patients on 1-6 postoperative days. Early anastomotic leakage was defined as occurring with the chest tubes in place and cervical surgical wound. We performed to compare the ability of pleural fluid amylase levels and serum CRP to detect anastomotic leakage and to determine the accuracy of cutoff values.

Results: Overall anastomotic leakage rate was 31% (10/32). The multivariate test showed a significant association between pleural fluid amylase level and anastomotic leakage ($p < 0.001$).

A cutoff of pleural fluid amylase level 349 IU/L on POD 3 (AUC 0.87, sensitive 76.7%, specific 95.5%) for a clinically significant leakage and accurately 92.7% of patients and cutoff of pleural fluid amylase level 880 IU/L on POD 5 (AUC 0.78, sensitive 50 %, specific 87.7%) for a clinically significant leakage and accurately 88.2% of patients No significant associate serum CRP with anastomosis leakage.

Conclusion: Increased postoperative levels of

pleural fluid amylase are associated with anastomotic leakage after minimally invasive esophagectomy. A pleural fluid amylase combined with reassuring clinical may be useful to exclude leakage. This may help to detect anastomotic leakage then effect to the surgeon's clinical decision-making and allow early feeding and hospital discharge.

Keywords: Anastomotic leakage, Esophagectomy, Amylase, C-reactive protein

Free Paper Pediatric Surgery

CLINICAL CHARACTERISTICS OF PEDIATRIC PATIENTS WITH CERVICAL LYMPHADENOPATHY WHO UNDERWENT SURGICAL BIOPSIES

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Background: Lymphadenopathy is common in children and is often a diagnostic challenge for clinicians. It may be one of the symptoms of many diseases including granulomatous diseases and malignancy. The cervical region is the most commonly involved area among peripheral lymphadenopathy. Surgical biopsy often provides a definitive diagnosis but may be unnecessary in some cases.

Objectives: The objective of this study was to retrospectively describe cases of pediatric patients with cervical lymphadenopathy who have undergone surgical biopsy and to determine clinical factors that can predict the likelihood of lymph node which need further management (LNFM) including granulomatous and malignant lymph node.

Methods: The data of 87 cases with unexplained cervical lymphadenopathy and underwent surgical biopsy was collected. Receiver operating characteristic analysis was performed to find out the parameter for size of the lymph node. Logistic regression was applied to determine independent predictors of LNFM, granulomatous lymph node, and malignant lymph node.

Results: On final diagnosis, 37 lesions (42.53%) were benign, 36 lesions (41.38%) were granulomatous,

and 14 lesions (16.09%) were malignant. The ROC analysis shows that size of the lymph node threshold that maximized sensitivity and specificity was 2 cm in order to predict LNFM group. Multivariate logistic regression model indicated that submandibular location (OR, 11.86; 95% CI, 2.54-55.38; p -value = 0.002), and abnormal CXR (OR, 20.72; 95% CI, 2.13-201.49; p -value = 0.009) were significant independent predictors of LNFM. Further subgroup analysis demonstrated that abnormal CXR (OR, 10.16; 95% CI, 1.48-69.92; p -value = 0.018) was significant independent predictor of malignant lymph node. In addition, redness (OR, 10.16; 95% CI, 1.48-69.92; p -value = 0.018), and submandibular location (OR, 14.64; 95% CI, 2.00-106.98; p -value = 0.008) were significant independent predictors of granulomatous lymph node.

Conclusions: Submandibular location and abnormal CXR are associated with LNFM. Abnormal CXR is associated with malignant lymph node. Overlying skin redness and submandibular location are associated with granulomatous lymph node. These data should be helpful to supplement clinical judgment in determining which enlarged cervical node is an LNFM.

Keywords: Cervical lymphadenopathy, Reactive lymphoid hyperplasia, Granulomatous, Lymphoma, Children

EARLY SURGICAL COMPLICATIONS FOLLOWING TRANSANALENDORECTAL PULLTHROUGH FOR HIRSCHSPRUNG'S DISEASE

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Background: Transanal endorectal pull-through (TERPT) is a standard procedure for Hirschsprung disease (HD) in the pediatric surgery center. Many studies had reported long-term complications such as HAEC, fecal incontinence, soling. This study was an interesting short-term outcome after surgery.

Objectives: Aim of this study was to examine early postoperative complications within 30-days after TERPT and to identify risk factors at perioperative, intraoperative, and postoperative characteristics, associated with the development of early surgical complications.

Methods: A retrospective chart review was performed on the patient with Hirschsprung disease who was treated with TERPT/ abdominal assisted TERPT at Siriraj Hospital from January 2009 to December 2019.

Results: 43 of 163 patients developed complications with thin 30 days after the operation, Abdominal assist TERPT has higher complications than TERPT ($n = 24$, 55.8% and $n = 19$, 44.2%). Anastomosis stricture ($n = 14$, 32.6%), Abscess at anastomosis ($n = 5$, 11.6%), GI obstruction ($n = 4$, 9.3%) occurred most frequently. Most common signs and symptoms who have complications after surgery were abdominal distension (46.5%) and vomiting (18.6%). The risk factor associated with early surgical complications was enteritis before surgery ($n = 13$, 30.2%, $P = 0.069$), Inpatient with enteritis should irrigated bowel 5 days before surgery. Although pack glycerin before surgery may decrease early complication ($n = 15$, 12.5% $P = 0.072$). Nutritional status, Colostomy before the operation, Volume of NSS irrigation were not associated with complications.

Conclusions: There is no significant risk factor associated with early surgical complications after TERPT. However, we know NSS 10 ml/Kg were the minimum volume of NSS for irrigating rectum and the shortest period rectal irrigation after enteritis were safely for surgery. Surgeons should be cautious in postoperative time, the patient who has abdominal distention may develop a complication.

Keywords: Transanal endorectal pullthrough, TERPT, Rectal irrigation, Enteritis, Transitional zone

FACTORS AFFECTING LONG-TERM PSYCHOSOCIAL OUTCOMES AFTER HYPOSPADIAS REPAIR

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Background: Congenital hypospadias is one of the most common genital malformations. Despite current progress in surgical techniques in hypospadias repair, their long-term psychosocial outcomes received little attention.

Objective: To evaluate long-term psychosocial outcomes after hypospadias repair and to analyze the root causes regarding satisfactory outcomes.

Methods: Patients who underwent hypospadias repair during childhood period were recruited. Regarding psychosocial outcomes, the patients were invited for evaluation by the modified SIGHT questionnaire (developed by previous German publication in pediatric urology) and the Strength and Difficulty questionnaire in Thai version form. Then demographic data of patients was collected. Data was analyzed by STATA program. Univariate analysis and multiple linear regression were used for statistical analysis.

Results: There were 38 hypospadias patients, median age =14 years (range 11-27) participating in the study. The patients underwent first hypospadias repair at median 3.5 years of age (range 1-14). The types of hypospadias were glandular type (1/38), corona type (5/38), midshaft type (10/38) and penoscrotal type (22/38). The overall average score of satisfactory psychosocial outcomes was 25.31 ± 5.86 (range 14-37, maximal score =39). Using simple linear regression analysis, factors affecting psychosocial outcomes ($p < 0.05$), were older age at first hypospadias surgery, mild type of hypospadias, technique of hypospadias repair, current urethro-cutaneous fistula, conduct problems, and abnormal peer difficulty problems.

However, when applying multiple linear regression analysis, only 3 factors were significantly associated with psychosocial outcomes; severe type of hypospadias when compared with corona and mid-shaft type ($r = 7.94$ and 5.16 , $p = 0.001$ and 0.005 , respectively), current urethro-cutaneous fistula ($r = -4.38$, $p = 0.02$) and high peer difficulty problems, ($r = -5.88$, $p = 0.04$).

Conclusion: From the study, factors which affected long-term decreasing psychosocial satisfactory outcomes were penoscrotal hypospadias, current urethro-cutaneous fistula, and high peer difficulty problems. However, further studies are needed to elucidate causes of long-term satisfactory psychosocial outcome after hypospadias repair.

Keywords: Hypospadias, Long term, Psychosocial, Outcome, Urethro-cutaneous fistula

OUTCOMES OF EARLY SURVEILLANCE ESOPHAGOGASTRODUODENOSCOPY FOR ESOPHAGEAL VARICES AT THE AGE OF 1-YEAR IN BILIARY ATRESIA PATIENTS

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Background: Portal hypertension is a common consequence of progressive liver cirrhosis secondary to biliary atresia (BA) patient. Bleeding from ruptured esophagogastric varices (EV) is a catastrophic complication which relates to a high mortality rate. Surveillance esophagogastroduodenoscopy (EGD) and primary prophylaxis play a key role for early management of EV. Since 2012, our institution conducted an early surveillance EGD protocol in all 1-year-old BA patients.

Objectives: The aim is to determine the outcomes of patients, who underwent surveillance EGD in terms of EV bleeding rate, mortality rate, and procedure-related complications, compared to those of patients who did not have surveillance EGD.

Methods: A retrospective chart review was performed for all BA patients, aged between 1 and 18 years old, who visited Division of Pediatric Surgery, Siriraj Hospital during 2008-2019.

Results: One hundred and eight BA patients were included. Protocolled surveillance EGD starting at 9-18

months were conducted in 42 patients. Non-protocol EGD was performed in 54 patients, which consisted of 36 surveillances and 18 therapeutic purposes.

All of protocolled surveillance EGD were performed under general anesthesia. EV requiring primary prophylaxis were identified in 9 cases (22%). Among these, prompt endoscopic sclerotherapy was administered. GIH requiring blood transfusion was found later in 21.4% (21.4% VS 33.3%; $P = 0.18$), however most of them recovered soon. There was no mortality related to GIH in protocol group.

Post-procedural ICU admission was required in 2 patients among protocol group. (4.8% VS 16.7%; $P = 0.1$) One was for closed monitoring, another one was due to her pulmonary infection. There was no early complications related to procedure. Nevertheless, 8 GIH-related ICU admissions and 1 serious GIH requiring surgery were identified among non-protocol patients.

Late Kasai's operation (> 3 months) and low albumin level (< 3.5 g/dL) were identified as significant factors for presence of EV requiring treatment (OR = 4.4, $P = 0.036$; OR = 4.0, $P = 0.04$ respectively).

Conclusion: Early surveillance EGD protocol could identify and provide primary prophylaxis for EV in almost one-fourth of BA patients. The benefit of early detection of patients with EV requiring endoscopic treatment may outbalance the risk related to the procedure.

PREDICTIVE RISK FACTORS FOR POST-OPERATIVE ENTEROCOLITIS IN HIRSCHSPRUNG'S PATIENTS

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Background: Hirschsprung's associated enterocolitis (HAEC) remains potentially life-threatening complication even after surgically treated by definite pullthrough procedure.

Objective: This study aimed to identify risk factors for the development of post-pullthrough HAEC.

Methods: We retrospectively reviewed patients with Hirschsprung's disease who underwent pullthrough procedure from 2007 through 2018 at

our institute. HAEC was diagnosed by clinical record of HAEC. Patients were categorized into 2 groups; 1) Control group who had no HAEC episode after pullthrough, 2) Post-pullthrough HAEC group. Risk factors of post-operative HAEC were then examined. Data were analyzed using simple logistic regression for univariate analysis. P -value < 0.05 was considered statistical significance.

Results: There were 91 patients of Hirschsprung's patients underwent pullthrough procedure. The median of age at diagnosis of Hirschsprung's disease was 112 days. The median of age at pullthrough procedure was 364 days. The incidence of post-pullthrough HAEC was 26% (24/91). The risk factors of post-pullthrough HAEC included pre-operative HAEC (OR = 5.78, 95% CI: 2.11-15.81; $P = 0.001$) and post-operative anastomosis stricture (OR = 8.13, 95% CI: 1.36-48.66; $P = 0.022$).

Conclusion: Our study demonstrates that pre-operative HAEC and post-operative anastomosis stricture are risk factors of post-pullthrough HAEC in Hirschsprung's disease. Hirschsprung's patients with these factors are recommended to be closely monitored for early detection and treatment of post-pullthrough HAEC.

Keywords: Hirschsprung's disease, Enterocolitis, Risk factors

PREVALENCE AND FACTORS ASSOCIATED WITH POST OPERATIVE STRICTURE IN ANORECTAL MALFORMATION

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Background: Anal stricture is one of serious complications of anorectal surgery, it's depending on the nature of the disease and type of operation. Postoperative dilatation is prescribed to avoid anal stricture. If stricture still occur, the currently described treatment of anal stricture is surgical correction.

Objectives: The purpose of this study was to find the prevalence and factors associated with anal stricture after postoperative surgery. Secondary objective was to compare about type of ARM, operative type, complica-

tions and postoperative anal dilatation between stricture and non-stricture group.

Methods: Medical records of 204 patients with anorectal malformation who underwent surgical treatments in the Siriraj hospital January 2003 to December 2019 were reviewed. Data were collected including demographic data, type of ARM, operative records, anal dilatation practice, complications and redosurgery.

Results: 204 patients were identified. 128 (62.7%) were male. Types of ARM were as follows; without fistula (31), perineal fistula (49), vestibular fistula (34), rectobulbar fistula (26), rectoprostatic fistula (30), rectobladder neck fistula (17), cloaca (16) and rectal atresia (1).

In total, the stricture was reported about 19.6% (40/204). Post operative stricture that required resurgery were more common in rectobladder neck ($P = < 0.001$). Stricture incidence was differed according to operative type. PSARP was the most commonly performed procedure, with 17.65% developing stricture. 55.56% of abd-assist PSARP patients and 50% of children who had PSARVUP developed a stricture. Stricture also occurred in 16.22% of anal transposition patient and 25% in lap-assist PSARP respectively. Abd-assist PSARP and PSARVUP increase in stricture formation rate ($P < 0.001$, $P = 0.009$). Common complication that may lead to anal stricture include wound infection, dehiscence, retraction, and colonic necrosis.

Postoperatively, 160 underwent routine dilatation by parents which develop stricture (28/204). Routine anal dilatation by parent and dilate under GA seem to decrease rate of stricture, but no significance in statistic ($P = 0.583$). The duration of dilatation do not significantly reduced stricture formation ($P = 0.123$). The redo operation after anal stricture are anoplasty (11.2%), PSARP (3.4%), abd-assist PSARP (1.9%) and lap-assist PSARP (2.9%).

Conclusions: The prevalence of anal stricture was reported 19.6%. Factors associated anal stricture include wound infection, dehiscence, retraction, and colonic necrosis. Type of malformation and operative procedure are associated with rate of anal stricture which were common in high type malformation. There were no significance difference in stricture rate between case which were dilate and not dilated.

Keywords: Anorectal malformation, Anal stricture, PSARP, Redosurgery, Anal dilatation

RADIOLOGICAL PARAMETERS DETERMINING SURGICAL OUTCOMES IN PEDIATRIC HEPATOBLASTOMA

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Objective: Hepatoblastoma is the most common hepatic epithelial cancers in childhood. To evaluate survival outcomes after major hepatic resections for hepatoblastoma and analyse for radiological parameters associating with poorer survival as they may suggest additional treatment or more intensive follow-up.

Methods: Cases of histologically proven hepatoblastoma who were operated on at Songklanagarind Hospital during the period from May 2004 to April 2021 were retrospectively review. Focus was on sequential radiological findings and survival outcomes.

Results: During the study period, 42 cases of hepatoblastoma were operated on in our institute. Excluding 3 cases with incomplete radiological materials, 39 (13 females and 26 males) were included in the analysis. Median age at diagnosis was 19.5 months (interquartile range 10.8 - 38.4 months). Of 39 cases, 17 (43.6%) were in PRETEXT 3-4 when 20 (51.3%) were in PRETEXT 1-2 and 2 had not enough data for staging. Except for 2 cases in PRETEXT 1, all received preoperative chemotherapy according to the THAI-POG regimen. A majority of cases (30 cases, 76.9%) underwent extended right hepatic resection. Median follow-up period was 51.4 months (IQR 10.5 - 95.0 months). Two- and five-year overall survival were 80.4% and 73.6%, respectively. Post-operative alfa-fetoprotein (AFP) level was a strong independent parameter associated with survival. AFP more than 5,000 U/L was associated with poorer survival at the Odds ratio 11.2 (95% CI 2.2 - 55.8). On log-rank analysis, radiological parameters that were associated with poorer survival included presence of metastasis, post-chemotherapy tumor diameter and presence of residual tumor after surgery. Of these, presence of residual tumor was the only independent factor determining worse outcome as none of those with residual

tumor survived longer than the first post-operative year, despite of intensive adjuvant chemotherapy. In non-metastatic hepatoblastoma cases without residual tumor after surgery, survival probability was 86.1% (95% CI 67.1 - 94.6%).

Conclusion: In non-metastatic hepatoblastoma, curative outcome is expectable when there was no residual tumor shown in post-operative imaging and the patient receives standard adjuvant treatment. Post-operative AFP higher than 5,000 ng/dL may indicate poorer outlook.

Keywords: Hepatoblastoma, Survival outcome, Radiology

SURGERY FOR PRIMARY LIVER TUMORS IN CHILDREN: A RETROSPECTIVE STUDY OF CONSECUTIVE 76 CASES

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Background: Primary liver tumors in children are rare. Multidisciplinary approach was used including surgery.

Objective: The objective of this study was to retrospectively review cases of primary liver tumors in children undergoing surgical resection.

Methods: Children (0-15 years old) undergoing surgery for primary liver tumors between 2006 and 2019 were retrospectively studied from 2 University Hospitals. Demographic data, types of procedures, operative time, pathology and post-operative complications were described. Data are expressed as mean $\pm$ SD.

Results: There were 76 children (M/F = 39/37), undergoing resection for primary liver tumors. Their average age was 27.9 ± 32.0 months and average weight was 11.7 ± 6.7 kgs. The most common presenting symptoms were asymptomatic abdominal mass. Ultrasonography, CT scan or MRI was used to confirm diagnosis and plan the surgery. The tumors were assessed to be initially unresectable in 57 of 76 (75%) patients who received preoperative chemotherapy and became resectable later.

The type of surgery included 51 lobectomies (67.1%), 9 extended hepatic lobectomies (11.8%), 7 multiple segmentectomies (9.2%), 6 segmentectomies (7.9%), and 3 wedge resections (4.0%). The mean operative time was 204.1 ± 82.1 minutes. The mean intraoperative blood loss was 274.1 ± 440.4 ml. The mean ICU stay was 2.1 ± 3.1 days. There was no statistical difference between 2 hospitals in terms of age, weight, types of procedure, intra-operative blood loss, and ICU stay ($P > 0.05$). Histopathology revealed 63 hepatoblastomas (82.9%), 4 mesenchymal hamartomas and one of endodermal sinus tumor, mature teratoma, immature teratoma, adenoma, hepatoma, undifferentiated embryonal sarcoma, focal nodular hyperplasia, glomus tumor, and undetermined benign liver tumor. The most common intraoperative complication was massive bleeding in 12 cases, with

cardiac arrest in one case. Post-operative complication was found in 16 cases (21.05%) including chylous ascites, atelectasis, intra-abdominal collection, surgical site collection, C-line infection, ileus, gut obstruction, bleeding and bile leakage. Re-operation was required to correct complications in 3 patients. There was no mortality in this series. Recurrent hepatoblastoma occurred in 6 cases within 120 days.

Conclusions: The most common primary liver tumor in children requiring surgical therapy is hepatoblastoma. Abdominal mass is a common symptom. Serious complications occurred in 20% of patients with a small chance of re-operation.

Keywords: Liver tumors, Hepatoblastoma, Children