The THAI Journal of SURGERY 2018; 39:144-164.
Official Publication of the Royal College of Surgeons of Thailand

Abstracts of the 43rd Annual Scientific Congress of the Royal College of Surgeons of Thailand, 27-30 July 2018, Ambassador City Jomtien Hotel, Pattaya, Cholburi, Thailand (Part 2)

ACS BASIC SCIENCE

A PROSPECTIVE RANDOMIZED TRIAL TO COMPARE TIME TO COMPLETE LAPAROSCOPIC SKILL TEST BETWEEN 3D IMAGING SYSTEM AND ULTRA-HIGH DEFINITION (4K) LAPAROSCOPIC SYSTEM

Komol Chaivanijchaya MD, Worawit Kattipatanapong MD, Ithiphon Viratanapanu, Sikarin Sornphiphatphong MD, Krit Kitisin MD, Suppa-ut Pungpapong MD, Chadin Tharavej MD, Patpong Navicharern MD, Suthep Udomsawaengsup MD
Department of surgery, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

Background: 3D (Three dimensional) imaging system can improve depth perception of surgical field and have many studies have shown that can improve inanimate laparoscopic skill compared with 2D system. Development of 4K (Ultra high definition) imaging system, the advantage includes more detailed, color-correct images and greater depth perception. We compared the effect of 4K imaging system to time for complete laparoscopic skill test over 3D imaging system

Method: Sixth year medical student and first year resident were assign in to two groups (3D first and 4K first) to perform 3 laparoscopic skill test (ring transfer, pattern cutting, suture/knotting) of both system. Time to complete all tasks and each tasks were measured and number of mistake were noted in both groups. All participants completed questionnaires about inconveniences that was occurred when performed skill test.

Result: Time to complete all tasks in 3D imaging system was shorter than 4K imaging system (661 seconds vs. 746.88 seconds, $p<0.001$). If we considered time to complete each task, the result showed shorter time in 3D imaging system than 4K. Time to complete task 1 in 3D system and 4K system were 101.42 +/- 22 seconds and 118.79 +/- 35 seconds respectively ($p<0.001$), for task 2 time to complete task in 3D system and 4k system were 304.58 +/- 49 seconds and 330.21 +/- 67 seconds respectively ($p<0.001$). Time to complete task 3 were 255 +/- 64 seconds and 297 +/- 90 seconds respectively ($p=0.02$)

Conclusion: The 3D vision systems significantly improved speed and accuracy when compared to the 4K vision system based on shorter performance time in non experience trainees.

ICS INVENTER AWARD

DEVELOPMENT OF MICRO COMPUTED TOMOGRAPHY (MCT) SCANNER FOR LOCALIZATION LESION AND ASSESSMENT OF THE MARGIN WIDTH OF RESECTED BREAST SPECIMEN IN THE OPERATING ROOM

Puttisak Puttawibul*, Somrit Mahattanobol*, Piyanoot Woodtichartpreecha*, Suphawat Laohawiriyakamol*, Pairash Thajchayapong†, Kriskrai Sitthiseripratip†, Saowapak Thongvigitmanee†, Pasu Sirisalee†, Walita Narkbuakaew†, Sorapong Aootaphao†, Chalinee Thanasubsombat†, Kongyot Wangkaoom†, Atthasak Kiang-ia†, Thossapon Chunkiri† Danu Prommin†, Parinya Junhunee†
* Faculty of Medicine, Prince of Songkla University, Songkhla, Thailand
† National Science and Technology Development Agency, Thailand (NSTDA)

Background: After the non-palpable microcalcification in breast tissue detected by mammogram was removed. The resected specimen must be examined by the x-ray in order to define that the calcification is inside the specimen or not. The x-ray imaging was routinely done at the mammogram x-ray machine or in the specific desired x-ray machine. The imaging process mostly be done at the outside operating room. And the image was achieved in 2D (2 dimension) plane. The location of calcification in the 2D image is vary depend on the direction of specimen that anchor on the film. The calcification that locate at the margin area is the indicator of incomplete resection.

Objective: The objective is to develop the micro CT scanner machine and software dedicate for localization of calcification in the resected breast tissue specimen in 3 dimensional images. The machine is portable and can be used in the operating room.

Materials & Methods: The system design is to 360 degree scan the specimen on the rotating table between the x-ray source and the detector sensor. The scan is the cone beam technique. The developing prototype machine was the collaboration between Prince of Songklanagarind University and NSTDA (National Science and Technology Development Agency, Thailand). The micro CT scan (MiniiScan®) was designed to be used as mobile machine and can be used in the operating room. The overall scan time and the image reconstruction is about 5-10 minutes. The machine is test for the safety by the PTECT of Thailand.

Results: This paper reports the preliminary result of 3D reconstruction of the resected breast tissue specimen by using the MiniiScan®. The scan of the specimen intraoperation in 31 patients is under evaluation form June 2016 to January 2018. The scan tome was 10.4 minutes. The preliminary report of the image quality is comparable to the conventional x-ray specimen done by the mammogram machine but the waiting time was 27.9 minutes in the conventional technique.

Conclusion: The prototype of the intraoperative MiniiScan® scan is test for quality of image and waiting time for report. The paramedic personal can operate the machine at the operating room instead of the conventional x-ray done at the mammogram machine outside the operating theater.

PISITH VISESHAKUL AWARD

OUTCOMES OF NON-OPERATIVE MANAGEMENT OF SPLENIC INJURY: RETROSPECTIVE COHORT FROM A LEVEL 1 TRAUMA CENTER

Naruthep Nuchaikaew MD[1], Osaree Akaraborworn MD, MSc[2], Burapat Sangthong MD[2], Komet Thongkhao MD[2], Teeravut Tubtawee MD[3]

[1] Department of Surgery, Faculty of Medicine, Prince of Songkla University, Hat Yai, Songkhla, Thailand

[2] Division of Trauma Surgery, Department of Surgery, Faculty of medicine, Prince of Songkla University, Hat Yai, Songkhla, Thailand

[3] Department of Radiology, Faculty of Medicine, Prince of Songkla University, Hat Yai, Songkhla, Thailand

Background: Non-operative management (NOM) of splenic injury is standard management for hemodynamically stable patients. However, it may be a challenge in developing countries with limited intensive care resources. This study aimed to review the outcomes of NOM of splenic injury in a level 1 trauma center in Thailand.

Methods: This was a retrospective review from a prospectively collected trauma registry. The study enrolled patients who had splenic injury and underwent NOM from 2009 to 2016. Failure of NOM was defined as needed an operation on the spleen after NOM. The outcomes of NOM were described and the predictors of failure of NOM were identified.

Results: Seventy-two splenic injury patients were included in the study. Motorcycle crash was the most common mechanism of injury (60%). The average Injury Severity Score was 20. Sixty-two patients (86%) were successfully treated as NOM. Six patients underwent embolization and one of them required operative management. The total lengths of stay in successful NOM and failure of NOM were equal, respectively. From a univariate analysis, hemoperitoneum ≥ 4 regions (odds ratio [OR] 3.96, 95% CI 0.79-25.53; P= 0.05) and blood transfusion >2 units in 24 hours (odds ratio [OR] 20, 95% CI 2.15-242; P= 0.003) were significantly associated with failure of NOM. The most common complication after NOM was splenic infarction.

Conclusions: NOM of splenic injury can be done successfully in a high level trauma center in a southern Thailand. The amount of hemoperitoneum and unit of blood transfusion in 24 hours was a significant predictor of failed NOM.

PREDICTION OF MASSIVE TRANSFUSION IN TRAUMA PATIENTS IN THE SICUS (THAI-SICU STUDY)

Osaree Akaraborworn MD, MSc, Sunisa Chatmongkolchart MD†, Chanatthee Kitsiripant MD†*

* Division of Trauma Surgery, Department of Surgery, Faculty of medicine, Prince of Songkla University, Hat Yai, Songkhla, Thailand

† Department of Anesthesiology, Faculty of Medicine, Prince of Songkla University, Hat Yai, Songkhla, Thailand

Background: Resuscitation in the SICUs is crucial for trauma resuscitation. Blood transfusion is needed for restoration of the physiology. This study had the objective of finding the predictors of massive transfusion in the SICUs in trauma patients and aimed to use those predictors to help clinicians prepare blood products for patients in a timely manner.

Methods: This was an analysis of a prospective cohort study (THAI-SICU Study) conducted in the nine university-based SIUCs in Thailand. The study included only patients admitted in the SICUs due to trauma mechanisms. Burn patients were excluded. Massive transfusion was defined as receipt of ≥ 10 units of packed red blood cells on the first day of admission. Demographic data and physiologic data were analyzed to identify the predicting factors. Multivariable regression analysis was performed for a final model.

Results: Three hundred and seventy patients met the eligibility criteria. Sixteen patients (5%) required massive transfusion in the SICUs. The factors that significantly predicted massive transfusion were an initial SOFA ≥ 9(RD 0.13, 95% CI 0.03 to 0.22, p=0.01), intra-operative blood loss ≥ 4900 mL (RD 0.33, 95% CI 0.04 to 0.62, p=0.02), and intra-operative blood transfusion ≥ 10 U (RD 0.45, 95% CI 0.06 to 0.84, p=0.02). Patients with all 3 factors had a 97.6% probability of a massive transfusion in the SICUs.

Conclusions: Massive blood transfusion in the SICUs occurred in 5%. An initial SOFA, intra-operative blood loss, and intra-operative blood transfusion were the significant factors to predict massive transfusion in the SICUs.

THE DISPARITY OF MICROORGANISMS IN BLAST WOUND INFECTION

Parin Boonthum, Burapat Sangthong†*

* Department of Surgery, Faculty of Medicine,

† Prince of Songkla University, Hat Yai, Songkhla, Thailand

Background: The International Committee of the Red Cross (ICRC) antibiotic protocol had suggested that Penicillin with or without Metronidazole should be used as empirical antibiotics. This protocol was aimed to cover mostly gram positive and anaerobic bacteria whereas recent studies suggested that gram negative bacteria were the predominant organisms in blast wound infection.

Objectives: The aims of this study are classified microorganisms of wound infection in blast-related traumatic patients in PSU hospital and to identify incidence, onset, risk factors and septic complications of wound infection on blast-related traumatic patients in PSU hospital.

Materials and Methods: Data were collected on blast-related trauma patients who were registered on trauma registry database at Songklanagarind hospital between January 1, 2009, and December 31, 2015. Data collection was performed by reviewing medical records of registered trauma patients. An initial descriptive analysis was performed for every variable. Numerical variables were presented as mean ± SD or median (IQR) respectively. Categorical variables were presented as frequencies or percentage. Logistic regression was used for analyzing data set to identify risk factors of blast wound infection.

Results: Microorganisms that caused wound infections in blast-related trauma patients of a total of 51 wound infections, gram-negative bacteria were the most common isolated overall 82%, gram-positive bacteria and fungal infection were isolated 31% and 4% respectively. Mixed organisms accounted for 20% of all blast wound infection. Pseudomonas spp., Acinetobacter spp., and Escherichia coli are predominant gram-negative bacteria that were isolated from blast wound infection. There are some multidrug-resistant microorganism such as gram-negative bacteria with ESBL positive and MDR Acinetobacter spp. among blast-related trauma patients who had wound infection. While Candida spp. is the most common organism that caused fungal infection. For potential risk factors, traumatic amputation and ICU admittance seemed to significantly increase risk of wound infection in blast-related trauma patient.

Conclusion: In conclusion, this study showed the predominant microorganism isolated from infected wound of blast-related trauma patient was gram-negative bacteria. Acinetobacter spp., Pseudomonas spp. and Escherichia coli were the most common gram-negative bacteria respectively. Patients who have traumatic amputation and/or ICU admittance have higher risk of wound infection.

POSTER COMPETITON

FLUORESCENT IMAGING WITH INDOCYANINE GREEN FOR INCREASE IDENTIFICATION RATE OF SENTINEL LYMPH NODE IN BREAST CANCER SURGERY: NEW EXPERIENCE IN THAILAND

Suphawat Laohawiriyakamol, Puttisak Puttawibul, Piyanun Wangkulangkul

Department of Surgery, Faculty of Medicine, Prince of Songkla University, Hatyai, Songkhla 90110, Thailand

Background: The radioisotope and blue dye has been used for identify sentinel lymph nodes (SLNs) for axillary staging in breast cancer. Fluorescent imaging with Indocyanine Green (ICG) is a recently developed modality for lymphatic mapping of SLNs and is a relatively new procedure in Thailand.

Objective: To estimate the identification rate of SLNs for the ICG method, compare with those of the radioisotope and blue dye methods, and to report the complication associated with the ICG technique.

Materials & Methods: Fifty-five women with early breast cancer had a periareolar injection of ICG, radioisotope and blue dye for detect SLNs. Identification rate of all methods were compared.

Results: ICG imaging identified SLNs in 54 of 55 patients (98% identification rate). Radioisotope and blue dye identified SLNs in 50 and 48 patients respectively. The mean number of SLNs identified by ICG technique was 3.1 nodes. There was no perioperative complication from ICG in all patients.

Conclusion: Fluorescent imaging using Indocyanine Green (ICG) is safe and is associated with a higher identification rate as compared with those of radioisotope and blue dye methods.

INTRAOPERATIVE 3D MINIISCAN® TO DETERMINE ADEQUATE MARGINS OF BREAST SPECIMEN WITH ABNORMINAL MICROCALCIFICATIONS BEFORE HISTOPATHOLOGICAL EXAMINATION

Suphawat Laohawiriyakamol, Puttisak Puttawibul, Piyanan Wangkulangkul

Department of Surgery, Faculty of Medicine, Prince of Songkla University, Hatyai, Songkhla, Thailand

Background: Breast calcification is an important feature in the radiological assessment of breast lesions. Abnormal calcifications classified as BIRADS 4 or 5 are indicated for tissue diagnosis. In practice, guided-wires are often used to localize these lesions. Various modalities are used to assess the adequacy of surgical resection to minimize pathological positive margin and reoperation rates. Currently most institutions used conventional specimen mammography. MiniiScan® is a new method of intraoperative specimen radiography for margin evaluation following breast lesion excision. The concept of MiniiScan® is similar to that of computerized tomography, but specimen is rotated on the plate instead of using circular rotating frame with an x-ray tube mounted on 1 side and a detector on the opposite side as in conventional CT scans. Reconstruction into 3 dimensional images is easily done in a short time. The MiniiScan® device was developed jointly by Songklanagarind hospital and the National Science and Technology Development Agency, Thailand.

Objectives: To compare the MiniiScan® imaging with conventional specimen mammography in terms of specimen margin positivity rates, as well as the operative time.

Materials & Methods: A medical records review of patients with abnormal calcification (BI-RADS 4 or 5) who underwent wire-localize excision from 1 June 2016 to 31 January 2018 at Prince of Songkla University was done.

Results: There were 31 patients in the study. The mean age was 56.8 years. Abnormal calcifications were classified as BI-RADS 4b in 52% of patient. The average specimen imaging times was 27.9 minutes and 10.4 minutes in the conventional specimen mammography and MiniiScan® (group, respectively. There are 9 patients with DCIS and all specimens were determined to have free margin by both radiologic methods. Final pathological results revealed negative margin all 9 specimen.

Conclusion: MiniiScan® reduces the operative time required for wire-guided tissue biopsy for abnormal calcifications and is readily integrated into routine care.

NOCTURIA AND EFFECT TO QUALITY OF LIFE

Pokket Sirisreetreerux, Wachira Kochakarn*, Wit Viseshsindh*, Threechada Boonchan†*

* Division of Urology Surgery, Department of Surgery, Faculty of medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand

† Section for Clinical Epidemiology and Biostatistics, Faculty of Medicine Ramathibodi Hospita (PhD student), Mahidol University, Bangkok, Thailand

Background: Nocturia quality of life questionnaires (N-QoL) has been developed and used worldwide.

Objectives: This study aim to explore the impact of nocturia on QoL in Thai patients, and to examine the association between Thai-translated N-QoL and urination at night.

Materials and Methods: The cross-sectional study was conducted on nocturia patients at Ramathibodi Hospital, Thailand. Uni- and Multivariate analyses were used to explore association among urination at night, patient's characteristics, and N-QoL scores.

Results: One hundred fifty-five nocturia patients (81% of whom was male, with mean age ± SD of 68 ± 9 years) were surveyed. The translated questionnaire met the reliability standard for internal consistency with Cronbach's α of 0.884. In terms of the domain Sleep/Energy, more than half of the patients reported the associations between nocturia low energy (55%), inadequate sleep at night (67%) which required napping during the day (72%). Most patients (87%) reported that nocturia was not the cause of fluid restriction. In terms of the domain Bother/Concern, more than half of patients were worried over condition worsening (57%). Approximately 70% of patients reported that nocturia bothered their life. Nocturia of more than twice per night was considered bothersome (p 0.022, sensitivity 71%). The average overall N-QoL score (± SD) (100 indicating the best conditions) was 79 (16) and had significant relationship with overall QoL (p <0.001). Increasing of number of urination per night and urinary continence significantly decreased overall N-QoL scores (p 0.002 and p 0.035, respectively). Number of urination, urinary incontinence, and/or time to first urination significantly predicted the impact levels in 9 od 12 N-QoL question.

Conclusions: Nocturia had significant impact on QoL. The number of urination at night could predict for overall N-QoL scores but did not relateto several questions in the N-QoL questionaires. Nocturia more than 2 per night should be given more attention.

TEN CASES REPORT OF TRANSORAL ENDOSCOPIC THYROIDECTOMY VESTIBULAR APPROACHED (TOETVA) AFTER PREVIOUS TOETVA SURGERY

Tanyanan Jamikorn, Thanadeth Vongjarukorn, Khwannara Ketwong, Pornpeera Jitpratoom, Angkoon Anuwong

Minimally Invasive and Endocrine Surgery Division, Surgery Department, Police General Hospital, Bangkok, Thailand

Background: Transoral Endoscopic Thyroidectomy Vestibular Approach (TOETVA) is an upcoming surgical technique. In some cases we need reoperation for completion thyroidectomy. Nowadays, there is no report about redo TOETVA cases yet. From March 2014 to June 2017 in Police General Hospital a total of 680 patients underwent TOETVA using 3 laparoscopic ports inserted at the oral vestibule. Ten patients underwent redo TOETVA completion thyroidectomy. Six cases was performed TOETVA within two weeks. Other four cases was performed TOETVA after 6 months after TOETVA lobectomy. All procedures were done with the same TOETVA technique but there are some points that we must be concerned while operation.

Operative procedure step by step, the patient position is supine with neck hyperextended. At first incision mucosa at distal 1/3 of mucosa lower lip then hydro dissection was done by using NSS 500 ml mix with adrenaline1ampule. Total uses of Saline 30-50ml to created subplatysmalplane. Then blunt dissected subplatysmal plane by using dissector direction at midline and two lateral side. Then 10 mm port was insert at midline lower lip then hanging suture with silk (2-0) at 1finger breadth below end of the port. Then make a small incision at lateral end of lower lip for inserting 5mm port both side. Then created subplatysmal space by sharp dissection using energy sealing device such as harmonic. In this procedure some case had adhesion from previous surgery. So this step should be careful not to dissected too shallow, Always dissected below platysma .Then opened strap muscle jn midline by hook monopolar. Then separated strap muscle from thyroid gland. At superior pole, dissected Joll's space to identify superior thyroid vessel. Then lateral hanging suture most part of strap muscle at the level of cricoid cartilate by silk (2-0). Then ligation superior thyroid vessels, identified and protect superior laryngeal nerve, superior parathyroid gland. Then lateral dissected was done by grabbing thyroid then rotate thyoid gland to medial. Then dissected tissue separates inferior parathyroid .Then ligation Inferior thyroid vessels and then dissected tissue to identify recurrence laryngeal nerve separated nerve from thyroid tissue and berry ligament. Then dissected the rest of thyroid tissue from trachea. Finally central node dissection was done. All cases didn't placed drain.

Results: All cases were no conversion to opened thyroidectomy, no intraoperative complications such as bleeding, no neck skin flap burn, and recurrent laryngeal nerve injury. We can identify parathyroid glands and protect all of them. All patients have no post operative complication such as hoarseness, post operative hematoma, airways compression, hypocalcemia and neck skin flap necrosis.

Conclusion: Redo TOETVA can perform within 2 weeks or after 6 months after surgery. Careful dissection

must be concerned due to adhesion and to prevent complications.

THE NON-RECURRENT LARYNGEAL NERVE AND THE TRANSORAL ENDOSCOPIC THYROIDECTOMY VESTIBULAR APPROACH (TOETVA)

Pakpoom Tirawattanakul, Khwannara Ketwong, Thanadeth Vongjarukorn, Pornpeera Jitpratoom, Angkoon Anuwong
Minimally Invasive and Endocrine Surgery, Surgery Department, Police General Hospital, Bangkok, Thailand

Introduction: The non-recurrent laryngeal nerve (NRLN) is a rare anatomic variation which is reported 0.3 to 0.8% of subject on the right side and 0.004% on the left. Nerve injury results in significant morbidity. NRLN has been reported and discussed in terms of technique used to identify and avoid injury in open thyroidectomy surgery.

Transoral endoscopic thyroidectomy vestibular approach (TOETVA) is a feasible and novel approach to thyroid surgery, with excellent cosmetic results. We reported 2 cases of NRLN found during TOETVA and discussed nerve identification techniques in TOETVA.

Patients and Methods: We performed 680 procedures using TOETVA from March 2014 to July 2017 at Police General Hospital, Bangkok, Thailand. The right NRLN was found in two patients. One is multinodular goiter and another with Graves' disease. Clinical data was recorded. Informed consent was obtained.

The first patient was a 35-year-old woman who presented with multinodular goiter for 4 years. Neck ultrasonography revealed multinodular goiter, with nodules ranging from 3 to 5 cm in size. FNA of dominant nodules was classified as Bethesda II. Total tyroidectomy via TOETVA was performed. A Type 2A right NRLN was found intraoperatively and very carefully preserved. There were no any complications such as hoarseness, hematoma, or hypocalcemia postoperatively.

The second patient was a 40-year-old woman presented with Graves' disease, who had failed medical treatment. Neck ultrasonography showed diffuse thyroid goiter with 6 cm in the largest diameter. The patient underwent total thyroidectomy via TOETVA. A type 2A right NRLN was found which we preserved safely. The postoperative period was uneventful

Discussion: The NRLN branches from cervical vagus nerve without looping around subclavian artery on the right side or ligament arteriosum on the left. There are three types of the NRLN: Type 1, 2A, and 2B. Our patients both had a type 2A NRLN, a classic type which is also commonly described in other reports.

TOETVA is an alternative novel technique for thyroid surgery which requires only conventional laparoscopic instruments. It avoids incisional scars and can be performed as safely as open thyroidectomy. Currently, our team has performed 680 procedures as of July 2017 - the largest number in the world.

We used meticulous capsular dissection technique, always aware that NRLN may be present. The prevalence of the NRLN in our series (0.3%) was in the same range as those of other reports (0.3 to 0.8%). Intraoperative nerve monitoring (IONM) may be used to help identify NRLN. Absence of signal at the right distal vagus nerve is an indicator of the presence of NRLN.

Conclusion: Careful dissection and awareness of NRLN are important for both endoscopic and open thyroid surgery. Intraoperative nerve monitoring under endoscopic visualization may better identify the RLN.

TRANSVERSUS ABDOMINIS RELEASE (TAR) VS ANTERIOR COMPONENT SEPARATION (ACS) TECHNIQUES: FLAP ADVANCEMENT COMPARISON IN THE SOFT CADAVERIC

Worawit Kattipatanapong MD, Ithiphon Viratanapanu, Sikarin Sornphiphatphong MD, Komol Chaivanijchaya MD, Krit Kitisin MD, Suppa-ut Pungpapong MD, Chadin Tharavej MD, Patpong Navicharern MD, Suthep Udomsawaengsup MD
Department of Surgery, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

Background: Complex incisional hernia is one of the challenges in treatment. Component separation was introduced in 1990 to treat complex incisional hernia. During that time, anterior component separation (ACS) was performed but there were complications from skin flap necrosis due to extensive dissection. Transversus abdominis release (TAR) was introduced in 2012 to prevent skin flap necrosis and preserved neurovascular bundle. We compare between ACS and TAR in terms oflength of flap advancement in soft cadaveric model.

Method: Six soft cadavers were opened in midline from xyphoid to pubic symphysis. On the right side, we performed anterior component separation by skin flap dissection and then external oblique muscle from subcostal to inguinal ligament was divided. Dissection proceeded between external oblique muscle and internal oblique muscle. On the left side of the abdominal wall, we performed transversus abdominis release by opening posterior rectus

sheath and opening linear semilunaris.After thatwe identified transversus abdominis muscle, divided transversus abdominis muscle and undermined between transversus abdominis muscle and transversalis fascia. We measuredthe length of flap advancement from midline of both procedures at subcostal margin, umbilical and anterior superior iliac spine (ASIS) respectively, and used t-test to compare between the two groups.

Result: The average length of flap advancement in TAR; subcostal margin = 30.00 mm, Umbilicus = 41.67 mm, and ASIS = 25.00 mm. The average length of flap advancement in ACS is 18.33, 23.33, and 15.50 respectively. All average length of flap advancement in TAR had statistical significance compared with ACS.

Conclusion: In soft cadaver, TAR's length of flap advancementis more than ACS with statistical significance.

POSTER NON-COMPETITION

A COMPARISON OF NEXUS CT AND FILM CHEST PLUS ABDOMINAL CT FOR IDENTIFYING THORACIC BLUNT TRAUMA

Thana Boonsinsukh, Tarek S. Razek†*

* Department of Surgery, Faculty of Medicine, Srinakharinwirot University, Ongkharak, Nakhon Nayok, Thailand

† Department of Surgery, McGill University Health Centre, Montreal, Quebec, Canada.

Background: Nexus CT and CXR plus ACT were good decisive instruments for decreasing the use of unnecessary trauma thoracic CT but there was no clear information on selection preference.

Objective: To compare of NEXUS CT and CXR plus ACT for identifying thoracic blunt trauma.

Method: A retrospective analysis of the trauma registry at the Montreal General Hospital from April 1, 2014, to March 31, 2016 was performed. The inclusion criteria were older than 15 years, GCS > 12, blunt trauma injuries, admission in hospital and receiving CXR, TCT, and ACT.

Result: A total of 671 patients enrolled into the study. The median age was 57 years. 67.2% were male. Most trauma mechanism was falls (49.5%). 360 patients had total thoracic injuries and 143 had a major thoracic injury. Nexus chest CT-All for all thoracic injury'ssensitivity was 94.4% (95% CI 91.6-96.6) and specificity was 52.7% (95% CI 47.0-58.4). Nexus chest CT-Major had sensitivity and specificity for major thoracic injury of 97.2% (95% CI 93.0-99.2) and 45.4% (95% CI 41.3-50.0), respectively. CXR+ACT had sensitivities for all thoracic injury and for major thoracic injury of 65.6% (95% CI 60.4-70.5) and 94.4% (95% CI 89.3-97.6). CXR + ACT had specificities for all thoracic injury and for major thoracic injury of 99.7% (95% CI 98.2-99.9) and 80.7% (95% CI77.1-84.0).

Conclusions: Nexus chest CT-All has higher sensitivity to detect all thoracic injuries than CXR plus ACT. However, it seems that Nexus chest CT-Major has similar sensitivity to CXR plus ACT in detection of major thoracic injuries. The reductions of unnecessary TCT in major injury were 36.5% with Nexus CT-Major and 64.7% with CXR plus ACT. Therefore, Nexus chest CT and CXR plus ACT could be the option for the initial thoracic injuries evaluation in adult blunt trauma patients with GSC > 12.

ENDOSCOPIC SUBMUCOSAL DISSECTION FOR EARLY GI CANCER USING ENDOSCOPY WITH FICE SYSTEM

Hathaiwan Moungthard, Chayanit Sirisai, Worapong Anuponganant, Saipan Khunpugdee, Rawisak Chanwat*

Department of Surgery, National Cancer Institute, Bangkok, Thailand

Background: Endoscopic Submucosal Dissection (ESD) has been proven to be effective procedure for therapeutic method for early gastrointestinal (GI) cancer due to able to obtain en-bloc resection.The study was aimed to investigate the lesions and outcomes of ESD cases in National Cancer Institute, Bangkok.

Methods: The retrospective study was carried out from November 2015 to May 2018 to include 16 patients, who underwent ESD for GI neoplasm at department of surgery, National Cancer Institute, Bangkok, Thailand. We investigated the following variables; patient characteristics, tumor location, tumor size, pathological and histological features, recurrence and short term survival outcome.

Results: From 16 ESD cases, 3 cases were diagnosed of early stage esophageal, gastric and colonic cancer. Short-term outcomes showed no tumor recurrence and distant metastasis 3 year. One patient with early gastric cancer underwent laparoscopic gastric surgery due to unfavorable margin.

Conclusion: Endoscopic Submucosal Dissection is safe and provides favorable outcome for early GI cancers.

IN PATIENTS UNDERGOING ARTERIOVENOUS ACCESS CREATION, PATIENTS WITH HISTORY OF PREVIOUS CENTRAL VEIN CANNULATION HAD LOWER QUALITY OF LIFE THAN THOSE WITHOUT IN 9 MONTHS FOLLOW UP

*Ginthasuphang Wangsapthawi[1], Termpong Reanpang[1], Chanawit Sitthisombat[2], Supachoke Maspakorn[2], Sasinat Pongtam[1], Suwinai Saengyo[1], Kanyanat Ummee[3], Kittipan Rerkasem[1,3]**

[1] Department of Surgery, Faculty of Medicine, Chiang Mai University, Maharaj Nakorn Chiang Mai Hospital, Chiang Mai, Thailand

[2] Department of Surgery, Chiang Rai, Prachanukroh Hospital, Chiang Rai, Thailand

[3] NCD Center of Excellence, Research Institute of Health Science, Chiang Mai University, Chiang Mai, Thailand

Background: Based on the K-DOQI guideline, arteriovenous access (AVA) creation in patients with end staged renal disease without prior hemodialysis through central line during moderate chronic kidney disease (CKD) stage is an ideal condition. But in our real life practice, most patients had experience central venous catheter (CVC) beforehand. Patients and physicians might not agree with that guideline, so they would prefer to delay AVA creation only during extremely severe CKD stage when patients need emergency CVC insertion.

Objectives: This study aimed to evaluate quality of life, AVA maturation and complication in patient after AVA creation between patients with and without history of CVC cannulation. The result might support or against with K-DOQI guideline.

Methods: This study compared the maturation rate, AVA stenosis, quality of life (SF-36) and complication of AVA in patients undergoing AVA creation between patients without any history of CVC (group A) and patients with history of CVC (group B). We compared these parameters at 3, 6, and 9 months follow-up. This study was supported by Health Systems Research Institute of Thailand

Results: There were 100 patients in group A and 101 patients in group B. Comparing with patients in group B in 3, 6 and 9 months follow-up, group A did not have any significantly difference in maturation rate and AVA stenosis rate. However, the AVA complication rate seems to be lower in group A than those in group B (P=0.10) The AVA complication rate of group A in 3, 6and 9 months were 3.0, 8.7 and 10.9% respectively, whereas those of group B were 8.9, 12.5 and 14.5% respectively. The quality of life (SF-36) in several parts namely health transition item, body pain, general heath perceptions and social functioning were significantly increased in group A than those in group B.

Conclusion: The ESRD patients undergoing AVA with or without central vein cannulation did not have any significant difference in major outcome in the first 9-month follow-up but the quality of life seems to be better in patients without CVC before AVA creation. More data and longer follow up is needed before any solid conclusion can be drawn.

LONG-TERM ONCOLOGICAL OUTCOME OF MINIMAL INVASIVE SURGERY IN LOCALLY ADVANCED GASTRIC CANCER PATIENTS: SINGLE SURGEON'S EXPERIENCE AT NCI, THAILAND

Saipan Khunpugdee

Gastrointestinal Surgical Oncology, Surgical Oncological Division, National Cancer Institute of Thailand

Background: Radical Gastrectomy with D2 lymph node dissection has accepted as the standard surgical procedure for most patients with operable gastric cancer (GC). Even after R0 resection, the long-term patients remain poor. Minimal invasive surgery (MIS) for advanced GC has become increasingly perform but the oncological outcome compare with conventional open surgery is in doubt. The enhanced surgical techniques and more experience surgeon may improve outcomes for patients with curatively resected gastrointestinal cancer.

Objective: To evaluate the role of MIS for advanced GC in terms of long-term oncological control and safety for the patients suitable for curative resection.

Methods: Twenty-eight gastric cancer patients with stage Ia-IIIc who underwent laparoscopic radical gastrectomy with curative intent in National cancer institute, Thailand between October 2010 and April 2018 by the same surgeon were retrospective studied. Clinicopathological features were analyzed. Peri-operative complications included those directly associated with surgery, such as hemorrhage, wound dehiscence, anastomotic leak, pancreatic fistula, lymphatic fistula and abdominal or wound infection.

Results: Neither postoperative mortality nor complications occurred in all patients. Seven in fourteen male patients (50%) were stage III diseases where as eleven in fourteen female patients (78.6%) were stage III. Tumor's greatest diameter were 0.8-7.5 cm, mean 4.2 cm with T4 in 10 cases (71.4%) in male patients whereas tumor in female patients were 1.5-10 cm, mean 5.6 cm (excluding Linitis Plastic case) with T4 in 10 cases (71.4%). Lymph node dissections in male patients yielded 8-61 nodes (mean 29)

with metastasis 0-25 nodes (mean 4.5 or N2) and in female patients were 15-61 nodes (mean 31) with metastasis 0-36 nodes (mean 11.9 or N3). Up to April 2018, 13 of 28 patients (7 males/6 females) still survive with relapse-free in 12 cases (6 males/6 females), 3 of them (1 male/2 female) had disease free survival more than 5 years.

Conclusion: As feasibility and safety shown by getting 5-years survival rate (5-YSR) and the overall survival rate (OSR) without morbidity and mortality in the series suggest two important factors, the enhanced surgical technique as MIS and the experience surgeon play role.

NOVEL TECHNIQUE OF OPEN TRANSVESICAL EXCISION OF OBSTRUCTIVE URETEROVESICAL JUNCTION AND DIRECT URETERIC RE-IMPLANTATION

M Che Yaacob, S Tan†, Aruljoethy S†, CCM Lei2, AR John†*

* Paediatric Surgery unit, University Malaya Medical Centre.

† Department of Paediatric Surgery, Sarawak General Hospital, Kuching.

Background: Management of Primary Obstructive Megaureter (POM) is a dilemma faced by paediatric surgeons. Surgical management options for patients under 1 year old varies from endo-ureterectomy, cutaneous ureterostomy and refluxing ureteral reimplantation. Classical ureteric reimplantation can be very challenging due to the size discrepancy between grossly dilated ureter and small bladder. Modified ureteral orthotopic reimplantation is proposed by Wei Liu et al as one technique of refluxing reimplantation. This technique consists of transecting the ureter proximal to the obstruction and performing orthotopic reimplantation, with distal ureter freely protruding into the bladder.

Case presentation: Our patient was born term with antenatally diagnosed varicella zoster infection at 11 weeks' gestation. Detailed scan done at 19 weeks' gestation was unremarkable. Patient was initially well till day 5 of life where he developed sudden onsetrespiratory distress, metabolic acidosis, generalize doedema and decreased urine output. Biochemistry revealed rising urea, hyperkalemia and hyponatremia. Ultrasound showed small echogenic right kidney with multiple non-communicating cyst suggestive of multicystic dysplastic kidney and a moderately hydronephrotic left kidney with hydroureter along its entire length. Micturating cystourethrogram showed no reflux. Serum creatinine was high requiring peritoneal dialysis and a left nephrostomy was inserted as a bridging measure.A decision was later made for open left ureteric reimplantation using the modified ureteral orthotopic reimplantation technique described above. Open transvesical approach was used to dissect the left ureterovesical junction then 4.5 cm segment of the narrowed distal ureter was transected. The distal transected end of ureter was then mobilised allowing for an intentional 0.5 cm protrusion into the bladder prior to anchoring to bladder mucosa. Postoperative review at 6 weeks showed complete resolution of left sided hydronephrosis on ultrasound and serum creatinine had normalised.

Conclusion: Open intravesical orthotopic direct re-implantation in infancy is a good surgical option for management of primary obstructive megaureter.

OCCULT INJURY IN GERIATRIC PATIENTS WITH FALL FROM OWN HEIGHT: DETECTION WITH PAN-SCAN SCREENING

Thana Boonsinsukh, Jeremy R. Grushka†, Tarek S. Razek†*

* Department of Surgery, Faculty of Medicine, Srinakharinwirot University, Ongkharak, Nakhon Nayok, Thailand

† Department of Surgery, McGill University Health Centre, Montreal, Quebec, Canada.

Background: The routine use of PAN-SCAN might be useful in patients with high-energy mechanisms of injury. However, it was unclear whether this screening tool would be beneficial in patients with low-energy mechanisms such as fall from own height (FFOH).

Objectives: To determine the proportion of occult injury from the initial examination for evaluating the usefulness of PAN-SCAN screening in geriatric patients with FFOH.

Method: A retrospective analysis of the trauma registry at the Montreal General Hospital, level I trauma center, from April 1st, 2014, to March 31st, 2016 was performed. We enrolled patients using the following inclusion criteria; age more than 65 years, admitted with FFOH and received PAN-SCAN. Primary outcomes were any head, neck or torso injuries detected by initial examination compared with PAN-SCAN. Secondary outcome was incidental finding from PAN-SCAN.

Result: A total of 130 patients enrolled into the study. The median age was 83 years. 50% were male. Their injury severity score was 11. The most common injury was thoracic injury and the second was head injury. 23.8% required surgical intervention or other procedures. Mortality rate was 15.4%. The use of initial examination revealed occult injuries, mostly occurred in thoracic (4.5%) and head (3.8%). All of patients with occult injury did not require surgical intervention or other procedures except one patient with occult head injury who required surgery.

57.7% of all patients had incidental findings. The most incidental findings were gallstones and benign liver cyst or mass. 6 patients (4.6%) were found malignant tumor and required surgery.

Conclusions: Although most additional injuries detected by PAN-SCAN did not require surgical intervention or other procedures, they required admission, closely monitor and intensive follow-up. Moreover, PAN-SCAN provides a benefit by diagnosing incidental non-trauma associated medical diseases which some required urgent therapy. Therefore, routine PAN-SCAN might be useful in geriatric patients with FFOH until better clinical decision rules are available.

THE EARLY OUTCOMES OF HEPATECTOMY FOR HEPATOBILIARY CANCERS IN SAKONNAKHON HOSPITAL

Nisit Tongsiri

Department of Surgery, SakonNakhon Hospital, Sakon Nakhon, Thailand.

Background: Sakon Nakhon Hospital is a novice referral hepatobiliary center in the Northeast of Thailand. Hepatectomy is a curative treatment for hepatobiliary cancers. Nevertheless, the operation carries significant rate of mortality and complications; especially, from blood loss, posthepatectomy liver failure, and anastomosis bile leakage.

Objectives: To gather information of early outcomes of hepatic resections in Sakon Nakhon Hospital.

Materials and Methods: Descriptive retrospective data were collected from medical records of 54 hepatic resections performed during August 2015 - October 2017 at Sakon Nakhon Hospital. Outcome measures included demographic data, diagnoses, morbidity, mortality rates, intra-operative blood loss, and intra-operative blood transfusion.

Results: Hepatic resections with curative intent were performed in 54 patients, there were 27 males and 27 females with the mean age of 55 years (41-88 years). The histopathology findings were cholangiocarcinoma in 28 cases (51.9%), hepatoma in 12 cases (22.2%), colorectal liver metastasis in 9 cases (16.7%), and carcinoma of gallbladder in 5 cases (9.3%). Liver resection included 5 right extended hepatic resections (9.3%), 17 right hepatic resections (31.5%), 7 left hepatic resections (13%), 1 right anterior sectionectomy (1.9%), 6 left lateral segment resections (11.1%), 2 right posterior sector resections (3.7%), and 16 resections of hepatic segments (29.6%). Perioperative mortality occurred in 2 cases (3.7%), the cause of death in these patients was post hepatectomy liver failure. There were 29 procedural related complications (48.1%). Complications were bile leakage in 12 cases (22.2%), post hepatectomy liver failure in 6 cases (11.1%), acute kidney injury in 4 cases (7.4%), bleeding in 2 cases (3.7%), superficial surgical site infection in 2 cases (3.7%), pulmonary embolism in 1 case (1.9%), portal vein thrombosis 1 case (1.9%), and pleural effusion in 1 case (1.9%).

Conclusions: Hepatectomy for hepatobiliary malignancies at Sakon Nakhon Hospital has acceptable motality rate. However, morbidity rate is high in comparison with previous studies. Nevertheless the majority of complications could be managed with non-operative treatments.

RESIDENT CONTEST AWARD

3D BURN RESUSCITATION MOBILE APPLICATION: A MORE PRECISE AND EASIER TOOL TO CALCULATE BURN SURFACE AREA

*Thanyanan Panich[1], Tanasit Kangkorn[2], Chayamote Chayangsu[2], Puttan Wongtriratanachai[3], Apichai Angspatt[1]**

[1] Division of Plastic and Reconstructive Surgery, Department of Surgery, Faculty of medicine, Chulalongkorn University, Bangkok, 10330, Thailand

[2] Division of Plastic and Reconstructive Surgery, Department of Surgery, Chonburi Hospital, Chonburi, Thailand

[3] Division of Plastic and Reconstructive Surgery, Department of Surgery, Chiangmai University, Chiangmai, Thailand

Introduction: Burn area calculation is essential for estimation of severity and assessment of fluid resuscitation in burn patients. Inadequate or over resuscitation can lead to increasing morbidity and mortality in burn patients. A 3D Burn resuscitation mobile application has been developed to make it more precise and easier to calculate the burn surface area for physicians who are not burn specialists. The aim of our study is to validate the precision of burn surface area calculation using this application and other conventional methods both by physicians who are not burn specialists and burn specialists themselves.

Method: A prospective study was performed in burn patients from January 2017 to January 2018 at 3 burn

centers in Thailand including King Chulalongkorn Memorial hospital (KCMH), Chonburi hospital (CBH), and Chiangmai University hospital (CMH). Burn surface area was calculated by emergency physicians (EP) using both Rule of nine method and 3D Burn resuscitation mobile application. After all patients were admitted to each burn center both Lund and Browder chart (LB) and 3D Burn resuscitation mobile application were used to re-calculated the burn surface area of each patients by burn specialist. All data were analyzed using SPSS version 23.0.

Results: Overall 53 patients were recruited in this study, 18 in KCMH, 23 in CBH, and 12 in CMH. Mean age of patients was 42.5(17-94) years old. Sixty-eight percent were male patients (36/53). Burn surface area calculated by EP using Rule of nine method was significantly different from burn surface area calculated by the application using by same physicians (p<0.01). Burn surface area calculated by this application was not significantly different when using by EP or burn specialist (p= 0.54).

Conclusion: 3D Burn resuscitation mobile application is a more precise and easier tool to calculate the burn surface area for physicians who are not burn specialists comparing to Rule of Nine method. There is no difference in burn surface area calculating using this application between EP and burn specialist.

A 15-YEAR CURE RATE FOLLOWING PARATHYROIDECTOMY IN PATIENTS DIAGNOSED WITH PRIMARY HYPERPARATHYROIDISM IN SONGKLANAGARIND HOSPITAL

Pattamapond Limpanopas, Rattana Leelawattana†, Srila Samphao**

* Department of Surgery, Faculty of Medicine, Prince of Songkla University, Hat Yai, Songkhla, Thailand

† Division of Endocrinology and Metabolism,Department of medicine, Faculty of Medicine, Prince of Songkla University, Hat Yai, Songkhla, Thailand

Background: Primary hyperparathyroidism demonstrates as a rare condition in Thailand. Under-diagnosis and delayed detection are major causes. Parathyroidectomy is a definitive treatment. However, cure rate, complications and factor-related complications remain unknown.

Objectives: We aimed to evaluate the cure rate following parathyroidectomy and identify factors associated with recurrent hyperparathyroidism. We also aimed to establish the guideline for screening primary hyperparathyroidism and routine follow-up following parathyroidectomy.

Methods: A cross-sectional study and retrospective cohort review identified 54 patients with primary hyperparathyroidism who underwent parathyroidectomy from January 2002 to December 2016 in Songklanagarind hospital. The demographic data, clinical features, laboratory and investigations, preoperative localizations, operative procedures, postoperative complications, pathological reports, and cure rate following parathyroidectomy were collected and analyzed.

Results: The median age at diagnosis was 55 years (range 46.5-67). Twenty-six patients presented with skeletal symptoms (48%). The most common pathology was parathyroid adenoma (75%). Most of cases (80%) used US neck and 99 mTc-sestamibi scan as preoperative localization. The median follow-up time was 50 months. The cure rate following parathyroidectomy was 96%. All of recurrent diseases were parathyroid carcinoma.

The parathyroid hormone (PTH), corrected calcium and alkaline phosphatase were decrease after parathyroidectomy while serum creatinine and blood pressure were not change from baseline. Hungry bone syndrome (24%) was the most common postoperative complication. Factors associated with hungry bone syndrome included (74% dropped of intraoperative PTH (IOPTH) (sensitivity 86%, specificity 63%), ALP (338 U/L (sensitivity 66%, specificity 93%) and baseline PTH (262 ng/ml (sensitivity 85%, specificity 60%).

Conclusions: High cure rate following parathyroidectomy highlights the important of early detection and identifying patients with primary hyperparathyroidism in Thailand. Those with hypercalcemia and skeletal symptoms should be checked PTH level for screening. The cut point of PTH and ALP for indicating postoperative complications may not reliable due to small number of patients. Larger studies are required.

BACTERIAL STUDY OF BURN BLISTER FLUID AT MAHARAJ NAKORN CHIANG MAI HOSPITAL, A PROSPECTIVE COHORT STUDY

Nubdao Jongpairojcosit, Puttan Wongtriratanachai

Division of Plastic and reconstructive surgery, Department of Surgery, Faculty of Medicine, Chiang Mai University, Thailand

Background: Burn blisters occurred partial-thicknessburn from mechanism that increased capillary permeability leading to edema formation between epidermis and dermis. Blister fluid contains substance from inflammatory process that impaired Pseudomonas,

auruginosa opsonization and suppressed blastogenic response, also low levels of immunoglobulins. All factors inhibit wound healing burn infection depend on microbacterial factors such as type and number of organism, toxin and enzyme production. A very few study about burn blister fluid. There was study from Wu that show the positive culture in burn blister fluid 16.4%.

Objectives: Incident of patient with culture positive from burn blister fluid in Maharaj Nakorn Chiang Mai Hospital and to find the predictive factors of culture positive-burn blister

Methods: 30 patients visited Maharaj Nakorn Chiang Mai Hospital with unbroken burn blisters among August 2017 to November 2017. The patients and burn wound characteristic were collected. Burn Blister fluid was obtained by meticulous sterile technique was performed in each case.Burn blister fluid was cultured on blood agar plates for at least 48 hrs.

Results: Of the 30 patients, mean age of the patients was 30.6 years (range 1 to 86 years), the mean time from injury to aspiration was 29.4 hrs. (range from 0.5 to 218 hrs.), The mean of total body surface area of burn was 14.4% (range from 0.5 to 45.73%) 6 (20%) showed positive culture results for bacterial microorganisms. Coagulase-negative Staphylococcus was the most common isolated microorganism, accounted for 83.3%. Scald burn was the most common cause in culture positive patients (66.6%). There was no statistically significant prognostic factor for burn blister infection found.

Conclusion: Unbroken blister fluid was positive for bacterial culture in 6 patients (20%). The microorganism isolated from culture included gram positive culture positive and gram negative bacteria without anaerobic bacteria. The prognostic factors correlated to positive culture result cannot be demonstrated. This study suggested that the culture from burn blister fluid should be done immediately in patient with burn blister fluid to define the sterilization of the burn wound.

CHARACTERISTIC OF WELLS SCORE AND ASSOCIATED FACTORS OF ACUTE PULMONARY EMBOLISM IN SURGICAL-BASED INPATIENTS WITH ACUTE DVT

Sarayuth Booncha MD, Osaree Akaraborworn MD, MSc
Department of Surgery, Faculty of Medicine, Prince of Songkla University, Hat Yai, Songkhla, Thailand

Background: Wells score is not only a popular tool that effectively predicted acute deep vein thrombosis (DVT), but also simple for real practices. However, Wells score has not yet been proved to be used safely and effectively for inpatient setting (IPD).

Objectives: To evaluate the characteristic of Wells score and associated factors of acute pulmonary embolism (PE) in surgical-base in patients with acute DVT of Songklanagarind hospital.

Material and Methods: Acute DVT inpatients in departments of surgery, obstetrics-gynecology, and orthopedics from 2010 to 2016 were extracted from medical record and retrospectively reviewed. The Wells score was calculated for risk stratification in terms of low, moderate, and high probability. Inpatients with each risk probability were analyzed to evaluate their quantity. Finally, the associated factors of acute PE were assessed.

Result: There were 278 inpatients diagnosed acute DVT during hospitalization in surgery (n=142), obstetrics-gynecology (n=101), and orthopedics (n=35) wards. The numbers of imaging-confirmed acute DVT patients with a low risk probability were 3 (2.1%), 1 (1%), and 0 (0%) respectively (P=0.792). The number of moderate risk probability were 70 (49.3%), 53 (52.5%), and 18 (51.4%), respectively (P=0.884). The number of high risk probability were 69 (48.6%), 47 (46.5%), and 17 (48.6%), respectively (P=0.947). We identified factors that significantly different between the three specialties. The first one was patients who had paralysis, paresis, or recent plaster immobilization of the lower extremities (P<0.001). Second was patients who were recently bedridden or underwent a major surgical procedure (P<0.001). Third and fourth were patients who had leg edema and active cancer, respectively (P<0.001). Regarding the surgery service, the patients with acute PE experienced higher rate of acute bilateral DVT than patients who did not have 28% and 8%, respectively (P=0.025).

Conclusions: The low-risk probability determined by Wells score may be used to differentiate the presence of acute DVT in IPD setting. The acute bilateral DVT was more significantly associated with acute PE in the surgery service.

COMPARISON BETWEEN THE EFFICACY OF 5% IMIQUIMOD CREAM AND INTRALESIONAL TRIAMCINOLONE ACETONIDE IN THE PREVENTION OF RECURRENCE OF EXCISED KELOID: A PROSPECTIVE RANDOMIZED STUDY

Chalermphong Chatdokmaipri, MD, Isara Limthanakul, MD
Division of Plastic and Maxillofacial Surgery, Department of Surgery, Faculty of Medicine Ramathibodi Hospital, Mahidol University

Background: Keloid scars represented an abnormal,

exaggerated healing response after skin injury. In addition to cosmetic concern, scars may cause pain, pruritus, contractures. Nowadays, topical therapies have become increasing because they are easy to use, comfortable and non-invasive. The 5%imiquimod cream has been reported the effectiveness to prevent the recurrence rate of keloid after surgical excision.

Objective: This study was designed to evaluate the efficacy of 5% imiquimod cream in decreasing the recurrence rate of keloid after surgical excision, when compared with triamcinolone acetonide injection.

Study design: A prospective-randomized study was conducted by thirty patients enrolled. Fifteen patients were informed to applied 5% imiquimod cream nightly every other day for 12 weeks and fifteen patients were informed to use triamcinolone injection (standard treatment) after ear keloid excision and stitches removed.

Result: Thirty patients was examined of recurrence of keloid on their ears for 48 weeks after surgical excision, composed of male and female about 6.67% and 93.33%, respectively. The overall mean of Vancouver scar score for evaluating the effectiveness of imiquimod to decrease recurrence rate when compared with triamcinolone acetonide injection shown 4.72 and 5.23, respectively. However, the two methods were not statistically significant (*p*-value, 0.389). No serious local and systemic adverse event was detected in both groups of patients.

Conclusion: Treatment of surgical excision keloids with triamcinolone acetonide injection might be considered more than imiquimod cream for effectiveness in terms of decreased recurrence rate and higher patient satisfaction. The other limitation of this study is the number of the patients.

COMPARISON OF POSTOPERATIVE PAIN AT UMBILICAL WOUND AFTER CONVENTIONAL LAPAROSCOPIC CHOLECYSTECTOMYWITH TRANSUMBILICAL VERSUS INFRAUMBILICAL INCISIONS; A RANDOMIZED CONTROL TRIAL

Boonying Siribumrungwong[1],[2], Trirat Chunsirisub[3], Palin Limpavitayaporn[3], Assanee Tongyoo[3], Ekkapak Sriussadaporn[3], Chatchai Mingmalairak[3], Ammarin Thakkinstian4[4]

[1] Department of Surgery, Faculty of Medicine, Thammasat University Hospital, Thammasat University, Pathum Thani, Thailand

[2] Center of Excellence in Applied Epidemiology, Faculty of Medicine, Thammasat University Hospital, Thammasat University, Pathum Thani, Thailand

[3] Department of Surgery, Faculty of Medicine, Thammasat University Hospital, Thammasat University, Pathum Thani, Thailand

[4] Section for Clinical Epidemiology and Biostatistics, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Rama VI road, Rachatevi, Bangkok, Thailand

Background: Transumbilical incision of laparoscopic cholecystectomy has been widely performed to improve cosmetic outcome. The effect of transumbilical incision to postoperative pain compared with conventional infraumbilical incision is still lacking.

Objectives: Primary outcome is postoperative pain at 6, 24 hours, and 7 days after operation by using visual analog score (VAS). Secondary outcomes were analgesic used, length of stay, superficial surgical site infection (SSI), wound numbness, and hypersensitivity.

Methods: A randomized controlled trial was conducted at Thammasat University Hospital. Patients whom underwent conventional laparoscopic cholecystectomy (LC) were randomized to transumbilical or infraumbilical incisions. Patients' characteristics and outcomes were compared between interventional groups. Risk ratio, mean difference (MD), or median differences along with their 95% confidence interval (CI) were reported.

Results: In total, 102 patients were enrolled in which 51 patients were random to each of Interventional groups. Postoperative pain was similar between groups of interventions (MD-0.07 (95% CI: -0.47, 0.35)). Paracetamol usage was significantly less after transumbilical incision (MD -1 tab (95% CI: -1 (-1.9, -0.1)). However, the different lost its significant after adjusted for unbalanced characteristics. Other secondary outcomes were not statistically significantly different between groups. However, there was higher proportion of superficial SSI in transumbilical group (8 (16%)) vs 2 (4%) in infraumbilical groups ($p = 0.070$). Patients in both group were mostly very satisfied the cosmetic outcomes at 3 months.

Conclusions: Transumbilical incision had similar pain compared to infraumbilical incision. Most patients in both groups satisfied the operation at 3 months.

COMPARISON OF TRADITIONAL ELECTROSURGERY SYSTEM VERSUS LOW THERMAL TISSUE DISSECTION SYSTEM FOR TOTAL MASTECTOMY: A PROSPECTIVE RANDOMIZED CONTROLLED TRIAL

Piratthima Vachiraprakarnsakul, Suebwong Chuthapisith, Pongthep Pisarnturakit

Division of Head Neck Breast surgery, Department of Surgery, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand

Background: Various novel surgical equipment has

been used in breast surgery to reduce the post-operative seroma, however, real benefit from previous studies were controversial.

Objectives: This study was conducted to compare benefit of low thermal dissection system (PEAK Plasmablade®; PB) and traditional electrosurgery system (TE) in terms of seroma volume after mastectomy.

Methods: A prospective randomized controlled trial was designed. Patients who underwent mastectomy at a tertiary hospital from March 2017 to December 2017 were randomized into two arms; PB vs TE (n=25 each). Post-operative seroma, duration of tube drain insertion, hospital stay, pain score, blood loss and number of aspiration attempts were recorded and analyzed using two-tail independent t-test.

Results: All patients received mastectomy with or without axillary surgery. Both groups showed similar patient characteristics in terms of age, BMI and breast weight. There were no statistically significant difference of drainage volume (Mean PB = 862 cc and Mean TE = 759.84 cc, p=0.621). The hospital stay, estimated blood loss, pain score, duration of tube drain insertion also demonstrated no statistical significance in both groups.

Conclusion: When perform mastectomy in women with small breast volume, the benefit of low thermal dissection was not found over the traditional electrosurgery.

Conflict of interest: PEAK Plasmablade® used in this study was supported by Medtronic co., Ltd.

DEVELOPMENT AND VALIDATION OF A NOVEL SMARTPHONE-BASED WOUND MEASUREMENT SYSTEM: SILPA RAMA WOUND ANALYZER

Natcha Ariyaprakai MD, Kornkanok Somboonpun BS, Panuwat Lertsithichai MD, MSc, Pinyo Taeprasartsit PhD, Surawej Numhom MD

Division of Plastic and Maxillofacial Surgery, Department of Surgery, Ramathibodi Hospital, Mahidol University; the Department of Computing, Faculty of Science, Silpakorn University

Background: Wound area measurement is an important aspect in wound evaluation. Ideally wound measurement system should be accurate, unbiased, and useable for any operator, cost and time efficient. Silpa Rama Wound Analyzer (SRWA) is a novel android based digital planimetric application using smart phone and stylus. VISITRAK® is the conventional acetate tracing with digital planimetric system accepted in many clinical wound studies

Objective: To study the accuracy and reliability of SRWA compared with VISITRAK® system

Methods: In phase one accuracy and inter-rater variability of the VISITRAK(r) were analyzed. Three non-geometric computer-generated wound template (2, 8, 15 cm^2) were measured by forty five raters include surgical residents, nurses and medical students using SRWA and VISITRAK®. In phase two, intra-rater reliability of SRWA was studied. The same wound template were measured by four surgical residents using the SRWA.Percentage of Accuracy was calculated from relative errors, while inter- and intrarater reliability were evaluated using interclass correlation.

Results: In phase I, The percentage of accuracy of VISITRAK® in measuring the 2,8,15 cm^2 wound 96%, 99.5% and 98.9% respectively while SRWA's percentage of accuracy in measuring the 2,8,15 cm2 wound 77%, 79% and 79% respectively. The interclass correlation coefficient (ICC) of VISITRAK® was 0.997 (95% CI=0.988-1.000) while the ICC of SRWA was 0.998 (95% CI=0.992-1.000). The convenience score of VISITRAK® and SRWA were 7.533 ± 1.455 and 7.289 ± 1.660, which was not significantly different (p=0.508). In phase 2, the percentage of accuracy of the 2,8,15 cm^2 wound in curve surface was 77%, 76% and 75% respectively. The percentage of accuracy of the 2,8,15 cm^2 wound in planar was 64%, 64% and 68% respectively. The overall percentage of accuracy was 70.6%. The reliability test for SRWA show high interclass correlation (ICC=0.09) in for both intrarater and interrater measurements.

Conclusions: Silpa RamaWound Analyzer has excellent intrarater and interrater reliability. Although the accuracy was fair, the distribution of the measured value was narrow. With the current trend of smartphone usage, SRWA would provide objective assessment useable for raters who have different wound measurement skill that would ultimately improve the clinical wound care.

EFFECT OF NORMOBARIC OXYGEN THERAPY ON WOUND HEALING IN PATIENTS WITH MINOR TISSUE LOSS FROM CRITICAL LIMB ISCHEMIA: A RANDOMIZED CLINICAL TRIAL

Piyaporn Prasartritha, MD, Suthas Horsirimanont, MD, Sopon Jirasiritham MD., Wiwat Tirapanich, MD, Piyanut Pootracool, MD, Panuwat Lertsittichai, MD, Sakda Arj-Ong Vallipakorn MD, PhD

Division of Vascular and Transplantation Surgery, Department of Surgery, Faculty of Medicine, Ramathibodi Hospital, Mahidol University

Introduction: The objective of this study is to evaluate the effect of normobaric oxygen therapy on wound healing

in patients who presented with minor tissue loss from critical limb ischemia.

Methods: This randomized controlled trial was conducted at Ramathibodi Hospital. From May 2017 to January 2018, critical limb ischemia patients with minor tissue loss were randomly assigned to be treated with or without normobaric oxygen therapy for four weeks. The primary outcome is to evaluate the wound healing by measuring the wound surface area. The secondary outcome is to evaluate the change in the transcutaneous oxygen tension at pre- and post-treatment and also complications from the treatment.

Result: We assigned 28 patients with minor tissue loss into two group (after excluding one patient from each group due to infection) : 14 patients each group. The wound surface area at four-week times was smaller in intervention group (-0.06 ± 1.25 cm^2) but was larger in control group (0.825 ± 1.10 cm^2) without statistical significance (p=0.057). Likewise, the transcutaneous oxygen tension in the intervention group showed superior result compared to the control group (3.22 ± 9.54 vs -3.02 ± 7.25 mmHg) though there was no statistical significance (p = 0.059).

Conclusion: Normobaric oxygen therapy may be beneficial for increasing wound healing in the critical limb ischemia patients who presented with minor tissue loss.

EFFECTIVENESS OF SUBCUTANEOUS DRAIN TO PREVENT INCISIONAL SURGICAL SITE INFECTION AFTER ABDOMINAL SURGERY: A RANDOMIZED CONTROLLED TRIAL

Assanee Tongyoo MD, Piyapong Boonyasatid MD, Ekkapak Sriussadaporn MD, Palin Limpavitayaporn MD, Chatchai Mingmalairak MD

Department of Surgery, Faculty of Medicine, Thammasat University, Khlongluang, Patumthani, Thailand

Background: Surgical site infection (SSI) is a common complication after abdominal operation which may cause disability or mortality. One of the factors associated with SSI was the abdominal wall thickness ≥ 20 mm. Therefore, the drainage of collection within subcutaneous tissue may decrease SSI rate.

Objectives: To compare SSI rate between patients with and without subcutaneous drain placement.

Materials & Methods: This study was prospective randomized controlled trial which included patients who had abdominal wall thickness ≥ 20 mm. and underwent major abdominal operation during October 2015 to January 2018. The enrolled patients were randomized into 2 groups; with and without subcutaneous drain. Demographic data, operative details, characteristics of wound and SSI rate were collected. The statistical tests were chi-square test for categorical data and t-test for numerical data.

Results: For 142 enrolled patients, 11 patients were excluded (4 from death during follow-up and 7 from incomplete data). Therefore, 58 patients were in group with drain and 73 patients without drain. The demographic data, operative time, subcutaneous thickness and length of incision were not different. Regarding SSI, there was no significant difference between both groups (29.3% and 23.3%, p = 0.44). Subgroup analysis showed significantly lower incidence of deep SSI in group with drain when subcutaneous thickness ≥ 25 mm.(18.8% and 53.8%, p = 0.04) and estimated cut surface area ≥ 4,500 mm^2 (8.3% and 50.0%, p = 0.03).

Conclusion: Subcutaneous drain placement decreases deep SSI rate in patients with thicker abdominal wall or larger cut surface area of surgical wound.

LAPAROSCOPIC SLEEVE GASTRECTOMY OUTCOMES: WHAT WE HAVE LEARNED?

Sikarin Sornphiphatphong MD, Worawit Kattipatanapong MD, Ithiphon Viratanapanu, Komol Chaivanijchaya MD, Krit Kitisin MD, Suppa-ut Pungpapong MD, Chadin Tharavej MD, Patpong Navicharern MD, Suthep Udomsawaengsup MD

Department of surgery, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

Background: Laparoscopic sleeve gastrectomy (LSG) is recently becoming one of the most commonly performed bariatric procedures worldwide. The efficacy of this procedure and also predictors for success should be determined.

Objectives: To evaluate outcomes of LSG on the adequacy of postoperative weight loss, incidence of weight-regaining after the initial success and to determine predictors that may relate to the success of the procedure.

Methods: A retrospective study was carried on all of morbidly obese patients who underwent LSG in King Chulalongkorn Memorial Hospital (KCMH) before May 2015. All the patients were followed-up for at least 3 years after the procedure to determine the rate of weight regaining. The bariatric outcomes were focused include the percent of excess weight loss (%EWL) within 18 months and after and weight regaining pattern after 18 months. The postoperative complications related to the procedure

were also observed both early and late complication. Preoperative factors in both inadequate weight loss (IWL) and weight regain (WR) group were analyzed to determine predictive factors related to the success of the procedure.

Results: There are 120 patients (55 female, 65 male) underwent LSG as primary bariatric procedure in KCMH before May 2015. 18-month follow-up data was available for 90 participants to define success of LSG at > 50% EWL, 59 patients (49.2%) succeeded to achieve this target with mean %EWL at 73.5 (17.39%, while 31 patients (25.8%) did not reach our goal, classified as IWL, with mean %EWL at 35.87 (10.6%. Overall mean %EWL at 18-month period was 57.19 (23.88% (Median 52.56). Among success group, there were 15 patients (25%) regained weight for more than 10 kg. The trend of weight regaining starts at 24 months after LSG. After 60 months follow-up, mean %EWL at was 58.72 (23.24% for success group and 4.03 (57.57% for IWL group. Overall mean %EWL at 60-month period was 46.83 (39.4% (Median 50.24%). There were 7 patients underwent additional laparoscopic Roux-en-Ygastric bypass, included six with inadequate weight loss and one due to weight regaining. Early postoperative complications included 3 patients with postoperative bleeding and one leakage. There was only one patient experienced functional obstruction as late complication and another one with incisional hernia.

Conclusions: LSG provides fairly good bariatric outcomes within medium-term follow-up period with low complication rate. However, higher preoperative BMI might relate to the chance of inadequate bariatric results. Long-term outcomes and predictors for success of this procedure should be clarified in further studies with larger number of patients.

LAPAROSCOPIC TRANSPERITONEAL ADRENALECTOMY: A 10-YEAR SONGKLANAGARIND HOSPITAL EXPERIENCE

Noppol Feuangwattana, Somrit Mahattanobol, Srila Samphao
Department of Surgery, Faculty of Medicine, Prince of Songkla University, Hat Yai, Songkhla, Thailand

Background: Laparoscopic adrenalectomy is currently the procedure of choice for removing benign, functioning or non-functioning, adrenal neoplasms. Various laparoscopic techniques and approaches have been reported using the transperitoneal or retroperitoneal approach.

Objective: The aim of this study is to present our 10-year experience with transperitoneal laparoscopic adrenalectomy and to confirm the feasibility and safety of the procedure.

Methods: The data were retrospectively collected from 107 patients who underwent laparoscopic adrenalectomy (LA) for benign adrenal neoplasms, between January 2006 and December 2016, in Songklanagarind hospital. LA was performed by a transperitoneal approach. Patients' demographic data, indication for surgery, operative time, blood loss, conversion rate, length of hospital stay, tumor size, and tumor pathology were collected and analyzed.

Results: A hundred and seven laparoscopic aderenalectomy were done. The patients were consisted of 23 men (22%) and 84 women (78%) with median age of 44 years (range 19-72). Most of the patients received treatment because of Conn's syndrome and adrenal cushing (64% and 21% respectively). Tumor located more frequently on the left side (58% vs 41%). Mean tumor size was 2.0 cm and mostly were cortical adenoma (82%). Overall mean operative time was 182 minutes and mean estimated blood loss was 68.42 mL with only 5% of the patients requiring blood transfusion. Conversion to open surgery was necessary in only 2 of 107 patients; both of them were diagnosed with pheochromocytoma. Mean length of hospital stay was 5 days. Rate of complications from intraoperative and postoperative were 9% and 5% respectively without mortality case. The length of hospital stay and operative time gradually decreased annually.

Conclusion: Laparoscopic transperitoneala drenalectomy appears to be safe, feasible, and effective procedure for benign adrenal neoplasms with low morbidity rate.

PREDICTIONS FOR PLEURAL DECOMPRESSION IN TRAUMATIC OCCULTED HEMOTHORAX: A RETROSPECTIVE STUDY

Osaree Akaraborworn, MD, M.Sc[1], Pawit Sriprasit, MD[2], Nantaka Kiranantawat, MD[3], Jitpreedee Sungsiri, MD[3], Chanon Kongkamol, MD[4]

[1] Division of Trauma Surgery and critical care, Department of surgery, Faculty of Medicine, Prince of Songkla University, Hatyai, Songkhla, Thailand

[2] Department of Surgery, Faculty of Medicine, Prince of Songkla University, Hatyai, Songkhla, Thailand

[3] Department of Radiology, Faculty of Medicine, Prince of Songkla University, Hatyai, Songkhla 90110, Thailand

[4] Department of Community medicine, Faculty of Medicine, Prince of Songkla University, Hatyai, Songkhla, Thailand

Background: Increasing of computed tomography using in trauma evaluation increased initially occult

hemothorax detection in blunt chest trauma. The proper management of this condition is still remaining controversial, should we drain it or not. This research aimed to study the overall factors determining pleural decompression.

Methods: Retrospectively reviewed all blunt chest injury patients from institutional trauma registry. Patients who received CT chest or whole abdomen within 24 hours were reviewed to identify occulted hemothorax which defined as initial negative CXR with presence of hemothorax in CT verified by a radiologist. Data collected included demographics, injury and characteristics of the hemothorax from the CT such as thickness of the hemothorax. The delayed complications and the treatments were also recorded.

Results: From 688 patients with blunt chest injury from 30 months of study, 81 (11.8%) of them had occult hemothorax. The mean time from injury to CT was 5.7 hours. Mostly were male (87.6%) suffered from traffic accident (70.2%) and had ribs fracture (84.4%). Pleural decompression was performed in 25 patients with significantly higher rate of occult pneumothorax (88% vs 53.8%, *p*-value < 0.01), lung contusion (44% vs 15%, *p*-value < 0.05) and thicker hemothorax (1.1cm vs 0.8 cm, *p*-value < 0.01). Multivariable logistic regression showed the thickness of hemothorax > 1.1 cm increased risk for needed of pleural decompression (OR 5.51, 95% CI 1.42 to 21.42) and also for occulted pneumothorax (OR 6.93, 95% CI 1.56 to 30.77).

Conclusions: Occult hemothorax occurs in a significant proportion of blunt chest trauma patients and pleural decompression was performed within conditions of concomitant occult pneumothorax, lung contusion and thicker hemothorax.

SUPER-THIN EXTERNAL PUDENDAL ARTERY (STEPA) FLAP: CADAVERIC STUDY AND THE FIRST REPORTED CASE SERIES

Kidakorn Kiranantawat, MD
Perawut Kanchanatunyaluk, MD
Division of Plastic and Maxillofacial Surgery, Department of Surgery, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand

Background: Current the reconstruction using a free tissue transfer is very popular. However, there are limits to the thickness of the flap when reconstruction requires a thin and pliable flap, options have remained limited. The super thin external pudendal artery (STEPA) flap was introduced due to superiorly advantages such as its thinness (even in obese patients, as very little subcutaneous fat exists), reliable vascularity, constant pedicle anatomy, and its elasticity. Donor site can be closed primarily and donor scar is very well hidden. At present, there is only one published anatomical study, without application in the real patient. After the senior author performed this flap in real patients, we found several points which are different from the paper described. Therefore, important data are still lacking. In this study, we prospectively collect important measurements in cadavers and real cases done in our hospital.

Methods: The study was prospectively conducted in 12 male adult cadavers (6 fresh and 6 soft cadavers) and 6 patients who underwent for defect coverage with free scrotal flap in Ramathibodi hospital during September 2014 to December 2017. Inclusion criteria were Thai nationality, male aged over 15 years. Measurements were performed including distance from inguinal ligament to external pudendalartery (EPA), distance from inguinal ligament (IL) to saphenofemoral junction (SFJ), distance from SFJ to external pudendal vein (EPV), pedicle length of external pudendal artery and vein, diameter of external pudendal artery and vein. Anatomical variation of the course of EPA were observed and classified.

Results: The mean age was 59 years (range, 29 - 85 years). Mean distance from IL to EPA was 4.83 cm (range, 1.6 - 8 cm) , mean distance from IL to SFJ was 3.9 cm (range, 1.3 - 6 cm), mean distance from SFJ to EPV was 2.06 cm (range, 0.5 - 4 cm), mean pedicle length of EPA was 4.34 cm (range, 1 - 10.1 cm), mean pedicle length of EPV was 2.32 cm (range, 0.5 - 5.6 cm), mean diameter of EPA was 1.97 cm (range, 1.3 - 2.7 cm) and mean diameter of EPV was 2.29 cm. (range, 1 - 4 cm). From our findings, we classified two types of EPA anatomy based on its relationship with great saphenous vein as follow: Type A, external pudendal artery pass above great saphenous vein. Type B, external pudendal artery pass below great saphenous vein. EPV in all of our subjects drain into the great saphenous vein before it join femoral vein at SFJ.

Conclusions: When reconstruction requires a thin and pliable flap, STEPA free flap is an excellent alternative. Our anatomical study has demonstrated that the flap is super thin with a large surface area when fully stretched; the vessel diameters and length are more than sufficient for microsurgical transfer. Our case series also confirm that the STEPA flap is doable in variety of defect types. Moreover, the donor site can be closed primarily and the scar is very well hidden.

VDO AWARD

DIAGNOSIS AND TREATMENT OF ACHALASIA: HOW TO READ HIGH-RESOLUTION MANOMETRY LAPAROSCOPIC HELLER MYOTOMY WITH FUNDOPLICATION

Pornthep Prathanvanich
Department of Surgery, Taksin Hospital, Bangkok, Thailand

Background: Esophageal achalasia is a rare condition of the esophagus, affecting 1 in 100,000 individuals. It is a benign condition manifest by dysphagia, regurgitation, and chest pain and is characterized, manometrically, by a hypertensive nonrelaxing lower esophageal sphincter (LES). Aperistalsis or vigorous uncoordinated contractions of the esophageal body are associated manometric finding.

Objectives: This video details about 1) How to read high-resolution manometry and diagnosis of achalasia. 2) Evidence based and comparative of fundoplication after performing laparoscopic Heller myotomy. 3) Tips and tricks of laparoscopic Heller myotomy with fundoplication.

Materials & Methods: There are seven key steps: 1) Dissection of gastrohepatic ligament 2) Division of peritoneum and phrenoesophageal membrane above esophagus 3) Dissection of short gastric vessels 4) Initiation of myotomy 5) Proximal and distal extension of myotomy 6) Intraoperative upper endoscopy 7) Fundoplication.

Results: Laparoscopic Heller myotomy with fundoplication can be performed as the same standard as open exploration.

Conclusion: The video shows the technical feasibility of laparoscopic Heller myotomy with fundoplication for achalasia. Our experience and success is promising.

LAPAROSCOPIC LATERAL PELVIC LYMPH NODE DISSECTION: HOW I DO IT?

Nitikun Booning, Chucheep Sahakitrungruang
Colorectal Division, Department of surgery, Faculty of Medicine, Chulalongkorn University

Background: Laparoscopic pelvic lymph node dissection (LPND) is indicated in low rectal cancer patient with clinical lateral pelvic lymph node metastasis. This procedure is usually performed in conventional open technique. LPND can be done laparoscopically with acceptable short term and long term oncologic outcome. This video present technique of laparoscopic LPND step by step and demonstrate the major landmark structure in laparoscopic view.

Presentation of case: A 46-years-old male was diagnosed with locally advanced rectal cancer with clinical lateral pelvic lymph node metastasis. The patient received neoadjuvant concurrent chemoradiotherapy then went for laparoscopic low anterior resection with therapeutic LPND. This procedure was successful and patient fully recovered and discharge 5 day after the operation. The operative step are medial dissection of the ureter, dissection the fibroareolar tissue away from the lateral border (common and external iliac vessel), identification obturator nerve and branch of internal iliac vessel, division of some anterior branch of internal iliac vessel and remove the fibroareolar tissue.

Conclusion: This video present technique for laparoscopic LPND and the important land mark in laparoscopic view. Anatomical knowledge of the important landmark and operative step makes this operation feasible.

LAPAROSCOPIC ULTRA-LOW ANTERIOR RESECTION FOR LOW RECTAL CANCER: TIPS AND TRICKS INCLUDING DELOYERS PROCEDURE

Pornthep Prathanvanich
Department of Surgery, Taksin Hospital, Bangkok, 10600 Thailand

Background: The primary treatment for rectal cancer is still surgery. Surgery, however, may be either be preceded or followed by chemotherapy and radiotherapy when needed. Good surgery on its own when applied appropriately is associated with a very low rate of local recurrence. Bad surgery however, is associated with a high risk of local and systemic recurrence. The well-performed ultra-low anterior resection with total mesorectal clearance has been shown to be the most important step in the treatment of a low rectal cancer especially when perform with laparoscopic surgery.

Objectives: This video details the tip to make the performance of a laparoscopic ultra-low anterior resection easy.

Materials & Methods: There are eight key steps: 1) Dissection of left retroperitoneum, 2) High ligation of inferior mesenteric artery and inferior mesenteric vein, 3) Dissection of lateral part of left side colon 4) Take down splenic flexure 5) Dissection of upper mesorectum

6) Dissection of right and left mid mesorectum 7) Dissection of distal mesorectum and 8) Anastomosis. This video also shows Deloyers procedure as colon lengthening technique by using the right side colon to the anastomosis in a patient who has synchronous transverse colon cancer with low rectal cancer.

Results: Laparoscopic ultra-low anterior resection can be performed as the same standard as open exploration.

Conclusion: The video shows the technical feasibility of laparoscopic total mesorectal excision for low rectal cancer. Our experience and success is promising.

LYMPHATICO-VENULAR ANASTOMOSES: TREATMENT FOR SECONDARY LYMPHEDEMA: A CASE REPORT

Kengkart Winaikosol, Palakorn Surakunprapha
Plastic & Reconstructive Unit, Department of Surgery, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

Background: The lymphatico-venular anastomosis (LVA) is the one of physiologic surgical treatments for lymphedema. The effectiveness of treatment depends on type of lymphedema, number of anastomoses and post-operative rehabilitation.

Objectives: To demonstrate surgical technique of supra-microsurgery and outcomes after treatment of secondary lymphedema with LVA technique.

Methods: A case report of 64-year woman presented with right upper extremity lymphedema for 7 years after bilateral breast cancer treatment. The surgical procedure demonstrate of lymphatic vessels identification by indocyanine green and isosulfan blue dye injection (double technique), technique of suturing and outcomes after treatment.

Results: After treatment the patient improved of skin quality without any episode of lymphangitis and decreased maximal arm circumference 88.89% (pre-operative 46.3 cm vs post-operative 34.5 cm) and 66.67% for forearm (39 cm vs 35 cm, pre-operative and post-operative respectively) when compared to left arm (33 cm and 33 cm of arm and forearm respectively).

Conclusion: The LVA procedure is the effective treatment for secondary lymphedema.

YOUNG INVESTIGATOR AWARD

COST-EFFECTIVENESS EVALUATION OF BARIATRIC SURGERY FOR MORBIDLY OBESE WITH DIABETES PATIENTS IN THAILAND

Ithiphon Viratanapanu MD[1], Chavalit Romyen, PhD[2], Komol Chaivanijchayal MD, Sikarin Sornphiphatphong MD[1], Worawit Kattipatanapong MD[1], Ajjana Techagumpuch MD[3], Krit Kitisin MD[1], Suppa-ut Pungpapong MD[1], Chadin Tharavej MD[1], Patpong Navicharern MD [1], Patchaya Boonchayaanant MD[4], Suthep Udomsawaengsup MD [1]
[1] Department of Surgery, Faculty of Medicine, Chulalongkorn University,
[2] Faculty of Pharmaceutical Science, Chulalongkorn University,
[3] Department of Surgery, Faculty of Medicine, Thammasat University,
[4] Department of Internal Medicine, Faculty of Medicine, Chulalongkorn University

Background: Bariatric surgery is a choice for treatment in morbidly obese patients with type 2 Diabetes Mellitus (DMtype 2) who has inadequate diabetes control with only medical treatment. However, bariatric surgery requires highly sophisticated equipment thus the cost of surgery seems to be very high following the procedure compared with the cost of conventional diabetes care. This raises the question of whether bariatric surgery is cost-effective for morbidly obese people with diabetes in Thailand.

Objective: To perform a cost-effectiveness evaluation of bariatric surgery compared with ordinary treatment for diabetes control inmorbidly obese with DM type 2 patients in Thailand.

Methods: Cost-effectiveness study was conducted, using a combination of decision tree and Markov model in analysis. Treatment outcomes and healthcare costs incurred by data from literature review and retrospective cohort in King Chulalongkorn Memorial Hospital from September 2009 to March 2016 for conventional and bariatric surgery group respectively. One-way sensitivity was used for analysis the robustness of the model. Cost-effectiveness was assessed by calculated Incremental Cost-Effectiveness Ratios (ICERs). Monetary benefits at a threshold of 150,000 to 200,000 Thai baht (THB) per quality-adjusted life-year (QALY) based on Thailand Gross Domestic Products (GDP) value was regarded as cost-effectiveness of bariatric surgery.

Results: Bariatric surgery significantly improves clinical outcome including long-term diabetes remission rate, hemoglobin A1C, and Body Mass Index (BMI). The

incremental cost per QALY of bariatric surgery compared with medication control is 26,907.76 THB/QALY which can be considered bariatric surgery as a cost-effective option.

Conclusions: Use of bariatric surgery in morbidly obese with DM type 2patients is cost- effectiveness strategy in Thailand's context.

ESTABLISHING THE LEARNING CURVE OF AN ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY TEAM: A CHALLENGE IN ESTABLISHING A COMPETENT TEAM AND EARLY OUTCOMES OF ERCP IN SAKON NAKHON HOSPITAL

Nisit Tongsiri[1], Witchuda Kittiwararit[2]

[1]Department of Surgery, Sakon Nakhon Hospital, Sakon Nakhon, Thailand
[2]Department of Nursing, Sakon Nakhon Hospital, Sakon Nakhon, Thailand.

Background: Endoscopic retrograde cholangiopancreatography (ERCP) is a highly technical demanding procedure which needs competent operator. However, a competent operator is not the single factor of successful ERCP: teamwork between healthcare professionals during the ERCP procedure is also important.

Objectives: The objectives of this study are to analyze a team's learning curve for the ERCP procedure, and to gather information regarding successful cannulation rate and procedural-related complications for ERCP in Sakon Nakhon Hospital.

Materials and Methods: A retrospective study with data collection from the patients who were performed elective ERCP in Sakon Nakhon Hospital from August 2015 to July 2017, by a single experienced operator with a novice ERCP team. The team's learning curve was analyzed by plotting average cannulation time and average total operating time of a block of ten ERCPs in native papilla against the operation sequence. Data regarding successful cannulation rate in natural papilla and procedural related complications were gathered to evaluate team competency in ERCP.

Results: There were 222 elective ERCPs in the studied period; 175 ERCPs of these ERCPs were native papilla. Total successful cannulation rate in native papilla was 83.4%. Cannulation time and total operative time became steadier after 70th ERCPs. Successful cannulation rate in the last 15 ERCPs in the study was 93.3%. The procedural related complications were: pancreatitis in 27 ERCPs, cholangitis in 18 ERCPs, bleeding in two ERCPs, and perforation in one ERCP. There were eight procedural-related mortality cases; seven of them were cholangiocarcinoma cases, and one of them was a case of common bile duct stone.

Conclusions: It needed at least 70 ERCPs to establish an efficient ERCP team. The mortality rate of ERCP in this study was high due to high rate of post-ERCP cholangitis in cholangiocarcinoma patients.

NOMOGRAM TO PREDICT NON-SENTINEL LYMPH NODE STATUS USING TOTAL TUMOR LOAD DETERMINED BY ONE-STEP NUCLEIC ACID AMPLIFICATION (OSNA)

Doonyapat Sa-nguanraksa, Anchalee Kulprom, Suebwong Chuthapisith, Pongthep Pisarnturakit, Waraporn Imruetaicharoenchoke, Pradit Rushatamukayanunt, Visnu Lohsiriwat, Kampanart Nimpoonsri, Pornchai O-charoenrat

Division of Head Neck and Breast Surgery, Department of Surgery, Faculty of Medicine, Siriraj Hospital, Mahidol University, Thailand

Background: Axillary dissection might be omitted in selected breast cancer patients. Total tumor load (TTL) in sentinel lymph node (SLN) expressed by cytokeratin 19 (CK19) mRNA, detected by automated molecular technique-one-step nucleic acid amplification (OSNA), can quantitativelydetermine tumor burden in SLN.

Objective: to create nomogram to predict non-sentinel lymph node (NSLN) status using OSNA technique.

Patients and Methods: Breast cancer patients were recruited at Division of Head Neck and Breast Surgery, Department of Surgery, Siriraj Hospital, Mahidol University, Thailand from November 2015 to January 2018. The patients with invasive breast cancer T1-T3, clinically negative axillary lymph node and able to give informed consent underwent SLN biopsy assessed by OSNA. The patients with positive SLN underwent axillary lymph node dissection. Correlations between TTL, clinicopathological parameters and NSLN status were analyzed by chi-square statistic and logistic regression. Model discrimination was evaluated using receiver-operating characteristic (ROC) analysis.

Results: Total number of the patients who underwent SLN biopsy was 262. There were 85 patients with positive SLN. Mean age at diagnosis of the patients in this group was 54.52 ± 11.66 years. NSLNs were positive in 37 patients. Larger tumor size (25.35 ± 9.02 mm vs 37.78 ± 16.88 mm) and presence of lymphovascular invasion (24.5% vs 67.6%) were the independent factor that predicts positive NSLN. TTL expressed by CK19 mRNA copy number can discriminate NSLN status with the area under ROC curve of 0.784 (95% CI 0.683-0.885). At the cut off level at 6550

copies/μL, sensitivity, specificity, and negative predictive value were 86.49%, 57.14%, and 84.85%, respectively. Nomogram containing tumor size and SLN status can predict NSLN involvement with area under ROC curve of 0.827 (95%CI 0.737-0.918).

Conclusion: Nomogram using the results by OSNA technique can predict NSLN status and help in decision for axillary lymph node dissection.