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Abstracts

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BREAST

ONE-YEAR FOLLOW-UP OF MASTECTOMY WITH IMMEDIATE LD FLAP RECONSTRUCTION BY THE EXTENDED LD FLAP TECHNIQUE

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Background: Extensive dissection of latissimus dorsi (LD) myocutaneous flap is defined as dissecting the entire LD myocutaneous flap and fatty tissue overlying the muscle with a large skin paddle, which improves the aesthetic result of immediate reconstruction. This flap is made large enough and a complete autogenous tissue reconstruction is possible in most Thai patients.

Materials and Methods: Between February 2006 and February 2007, 46 mastectomies with extensive dissection of LD myocutaneous flap were performed in 41 patients. Patients were followed prospectively by surgical oncologists for complications and aesthetic results.

Results: Extensive dissection of LD myocutaneous flap was performed for bilateral breast cancer (n = 2), breast cancer prophylaxis (bilateral LD flap, n = 3), chest wall recurrence (n = 2), ductal carcinoma in situ (DCIS) with microinvasion (n = 15), locally advanced breast cancer (LABC) T4b (n = 4), and infiltrating carcinoma (n = 150). Eight patients had seroma formation at the donor site, requiring single-, occasionally two needle aspirations after removing the drains. Hospital stay was 3 days. At a median follow-up of 8 months (range 3 to 12 months), there were no LD flap atrophy. Morbidity after LD muscle harvesting was unnoticed. The donor site scar with contour was usually very good. All patients facilitated this surgical technique with excellent cosmetic results.

Conclusions: Overall, we found that the extended LD flap technique provided excellent aesthetic results with infrequent complications. Furthermore, in this small series no muscle atrophy was found. We continue to offer this technique for all Thai patients including those desiring surgical breast cancer prophylaxis as well as those with DCIS.

COMPARING ARM MORBIDITY FOLLOWING SENTINEL NODE BIOPSY AND AXILLARY NODE DISSECTION IN EARLY BREAST CANCER

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Background: Axillary lymph node dissection (ALND) in breast carcinoma patients may cause considerable morbidities such as arm swelling in particular. Recently, sentinel lymph node biopsy (SLNB) has been shown to accurately define patients who do not need axillary dissection. However, there is still the possibility of false-

negative results leading to improper staging and undertreatment. Furthermore, there are multiple possible factors in addition to the extent of axillary dissection contributing to this morbidity.

Objectives: We aimed to evaluate arm morbidity in early breast cancer patients who received SLNB in comparison with those obtaining ALND and to identify clinicopathological parameters associated with the development of arm morbidity.

Materials and Methods: Female patients during routine follow-up over a 1-year period were eligible if they were a minimum of 1 year after all primary therapy; i.e. surgery, radiation, and/or chemotherapy. The 112, pathological N0, patients had previously undergone ALND (Level I-II dissection) and 85 patients had SLNB at the Division of Head-Neck and Breast Surgery, Siriraj Hospital between October 1997 and January 2006. Objective measurements, including upper and lower arm circumferences and range of motion of shoulder joint, were obtained and a subjective evaluation of arm edema, pain/numbness of shoulder joint and quality of life disturbance was conducted. Confounding data were analyzed using multivariate analysis. Statistical analysis was performed using SPSS version 10.0.

Results: In the ALND group, patients showed a significant increase in arm circumferences (9.8%) compared with those of SLNB (1.2%), as well as a significant higher rate of shoulder pain/numbness, limitation of shoulder movement and quality of life disturbance. By multivariate analysis between patients with and without arm edema, ALND is the only factor that shows statistically significant increase in arm morbidity independent of other parameters.

Conclusions: We reported for the first time the post-treatment arm morbidities in Thai breast cancer patients. The SLNB biopsy technique has been shown to spare the patient morbidity resulting from ALND. Therefore, the SLNB should be adopted as an alternative to routine ALND in Thai patients with clinically lymph node negative breast carcinoma.

SENTINEL LYMPH NODE BIOPSY PERFORMED UNDER LOCAL ANASTHESIA IS APPLICABLE AND ACCURATE

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Background: The role of sentinel node biopsy (SNB) performed under local anesthesia (LA) for breast cancer is not yet clearly established. It could have advantages such as more efficient use of operating room time and could be done in patients who are considered candidates for neoadjuvant chemotherapy. It also provides a histologic diagnosis before definitive breast surgery is undertaken. The aim of this study was to evaluate the feasibility of SNB performed under LA and to compare with the results of SNB performed under general anesthesia (GA).

Materials and Methods: Between January 2006 and February 2007, SNB was performed under LA in 39 patients and under GA in 107 patients with primary Tis, T1, T2, T3 N0 breast cancer. All patients underwent lymphatic mapping and an attempt to identify and remove a sentinel node. The present prospective study aims to evaluate the feasibility of SNB performed under LA. The sentinel node detection rates, a comparison of mapped and harvested sentinel nodes were compared in both groups.

Results: A median of 2 sentinel nodes/patient were harvested in the LA group and a median of 3 sentinel nodes/patient were harvested in the GA group. Success rate in the identification and removal of sentinel node was 100% in the LA group and 97% in the GA group. Success rate increased significantly with the use of radioisotope. Of 39 patients who had SNB under LA, sentinel nodes were positive in 9 patients. There were no significant differences in false-negative rate according to clinical patient and tumor characteristics.

Conclusions: SNB performed under local anesthesia is a safe option for well selected breast cancer patients. It could be done in patients who are considered candidates for neoadjuvant chemotherapy, offering the additional benefit of operating room time, with decreased operative times for patients.

ACCURACY AND RELIABILITY OF THE MULTI-SERIAL LYMPH NODE SLIDER AT ONE MILLIMETER TISSUE THICKNESS

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Background: It is preferable to make an intraoperative diagnosis of breast cancer metastases in axillary sentinel nodes to avoid second operation with lymphadenectomy. Imprint, or touch-preparation, cytology is a popular technique that has both high specificity and wide range of sensitivity. Recently, an increase in micrometastases and submicrometastases has been found in sentinel nodes on step section suggesting this will increase the sensitivity of touch imprint cytology.

Objective: The aims of this study were to evaluate the accuracy and reliability of our Multi-serial Lymph Node Slider at one millimeter interval sections

Study Design: Experimental study

Material and Methods: Sixty axillary lymph nodes (ALN) taken from breast cancer patients were sectioned in one millimeter steps by a Multi-serial Lymph Node Slider. The ALN were randomized into two groups and then three people were enrolled for ALN section in both groups. The thickness of the ALNs was measured after sectioning.

Results: The height, width and thickness of ALN in the two groups were not different. The accuracy and reliability of the device were the same for all people selected from the two groups. The mean tissue thickness measured ranged from 1.38 to1.36 millimeters in the upper slide, 1.202 to 1.131 millimeters in the middle slide and 1.306 to 1.219 millimeters in the lower slide.

Conclusion: The Multi-serial Lymph Node Slider had an accuracy of between 1.3835-1.131 millimeters and a good reliability.

ADVANCED BREAST CANCER WITH TETANUS

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This is a case report of right mastectomy and rotating left breast myocutaneous flap. A 55 years old female with advanced malignant ulceration at her right breast was partially treated with chemotherapy elsewhere for 1 year. The patient missed the chemotherapy regimen after starting. She presented with a few-day symptoms of trismus, difficulty in swallowing and breathing, stiffneck and painful back, which ran down in a few hours before admission.

Physical examination revealed a well-conscious female patient with trimus, opisthotonus and frequent tonic spasm of truncal and limbs. She had a large malignant ulcerated lesion at her right breast and large, matted, metastatic lymph nodes at her right axilla. She was admitted into intensive care unit and had endotracheal intubation, intravenous muscle relaxants, respiratory support and antibiotics. Initial CT scans revealed locally advanced cancer of her right breast with multiple axillary metastasis but normal lung and liver. She didn't response well to medical treatment as she still had tonic contraction all the time. She had to undergo right radical mastectomy and axillary lymph nodes excision due to extensive lesion and skin grafting (limited for removal of toxin production). Afterward, she was found to have multiple small malignant masses at outer upper quadrant of her left breast. Excision with frozen section of the masses and rotating myocutaneous flap for the left breast was performed and the flap was brought to close the right chest defect completely in sequential operations.

The patient recovered well from tetanus and the wound healed up completely. She was having better quality of life during postoperative chemotherapy. After completion of chemotherapy, radiation therapy will be offered to her.

Conclusions: It is not hopeless for patient with advanced malignant breast cancer. With proper medical management, quality of life can be improved. Tetanus vaccination may also have to be considered for the prevention of tetanus.

THE RECENT TREND AND INCIDENCE OF BREAST CANCER IN AN ADJUSTED INCIDENCE POPULATION BASED STUDY OF SONGKLA PROVINCE

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Background: The incidence of breast cancer in Thailand was not high when compared with Western countries. The last official report of the accurate results for breast cancer was published as "The Cancer in Thailand, vol. III" in 1995-1997 by the Ministry of Public Health. Currently we are waiting for national information of the most recent trend and incidence of breast cancer for the planning of management. The Tumor Registry Unit at Songklanagarind Hospital conducted the accurate data collection of breast cancer in the population of Songkhla province and calculated the adjusted incidence of breast cancer. The information for the years 2002-2005 is hereby presented in this report.

Materials and Methods: From the year 2002 to 2005 all new cases diagnosed with breast cancer in Songkhla province were collected and verified using only official data from Songklanagarind Hospital and other hospitals. The personal identification number was checked for exclusion of any double counted cases. The information was rechecked against the population database of the municipality office for validation before calculating the adjusted incidence.

Results: The population based incidence of breast cancer shows that it has become the most common form of cancer in females since the year 2001, followed by cervical cancer. In the year 2005, the adjusted incidence of breast cancer, cervical cancer and cancer of the colon was 24.3, 16 and 8.8 per 100,000 head of population, respectively. The

average incidence of breast cancer for 2002-2005 was 22.7. From the rising trend in breast cancer, it will become one of the burden diseases in female similar to that in the developed countries. There is a decreasing tendency of stage IV cancer with the overall pattern of stages II and III cancer showing no significant changes in the last 10 years. Conclusions: The adjusted population based incidence of breast cancer conducted by the Songklanagarind Hospital Tumor Registry showed that the incidence of breast cancer was 24.3 for the year 2005. Breast cancer becomes the most prevalent form of female cancer and there is tendency to become a main burden disease in the future.

ENDOCRINE SURGERY

PAPILLARY THYROID CARCINOMA ARISING IN A YOUNG PATIENT WITH CHRONIC LYMPHOCYTIC THYROIDITIS WITH A PREDISPOSING RET/PTC1 FUSION

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Introduction: Chronic lymphocytic thyroiditis is occasionally reported as a co-occurrence disease in a case of papillary thyroid carcinoma. However, biological association between the two conditions remains unclear.

Case report: A case of a 10-year-old female patient presented with a palpable nodule on the right lobe of the thyroid gland. On examination, her thyroid was found to be diffusely enlarged with a predominant mass occupying the right lobe, for which a thyroid scan reported multiple hypofunctioning nodules compatible with nodular goiters. The thyroid function study revealed high TSH value at 9.24mIU/L (0.70-1.78) while free T3 and free T4 were normal. A right extended thyroid lobectomy was initially performed. Histopathological examination revealed papillary carcinoma, necessitating an additional operation. A total thyroidectomy followed by dissection of adjacent cervical lymph nodes was then performed. Molecular genetic study by RT-PCR method detected a fusion transcript RET/PTC1 in the tumor tissue. The same fusion transcript was also detected in the non-tumorous tissue from the left lobectomy specimen. A direct sequencing study of BRAF gene exon 15 revealed normal genotype.

Conclusions: The evidence supported the theory that papillary thyroid carcinoma is a neoplastic transformation arising in a predisposing chronic thyroiditis. In this patient, the process was likely to be aggravated by an activation of RET proto-oncogene by its fusion partner, PTC1.

MINIMAL INVASIVE PARATHYROID SURGERY: INITIAL EXPERIENCE AT PRINCE OF SONGKLA UNIVERSITY

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Introduction: Nowadays, endoscopic thyroid surgery has been shown to be safe and feasible. Using a technique similar to endoscopic thyroidectomy and an accuracy of preoperative localization, we have successfully performed endoscopic parathyroidectomy.

Patients and Methods: We report our experiences in the first 2 cases of endoscopic parathyroidectomy for primary hyperparathyroidism via axillary approach and midline approach (double adenoma) respectively. Both patients had preoperative localization by Sestamibi scanning and ultrasonography.

Results: Intraoperative documentation of changes of parathyroid hormone (PTH) level after complete removal of parathyroid gland was demonstrated. There were no postoperative complications detected. Postoperative pain was minimal and the cosmetic result was excellent.

Conclusion: The development of accurate pre-operative localization with Sestamibi scanning and rapid intra-operative parathyroid hormone (PTH) measurement have made it possible to perform minimally invasive parathyroid surgery similar to endoscopic thyroid surgery.

BURN

LASER DOPPLER ANALYSIS OF BLOOD PERFUSION IN BURN WOUNDS

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Background: Laser Doppler Flowmetry (LDF) is a non-invasive tool for immediate measurement of cutaneous circulation which has been satisfactorily applied in burn wound depth assessment. The more precise evaluation of burn wound depth would lead to accurate diagnosis and appropriate treatment of burn patients in clinical practice. With variety of LDF models and assessment methodology, the standardization of LDF and criteria of burn wound depth diagnosis remain an inconclusive topic. Our study aimed to provide analytical data of LDF in burn wound assessment. This protocol was approved by the Institution Ethics Committee (Certificate of Approval No. Si 017/2006).

Material and Methods: During January 2006 and May 2007, burn patients (including scald burn, flame burn and electrical burn) at Siriraj Burn Unit who had stable vital signs were recruited. Cutaneous perfusion measurement of blood flow with laser doppler flowmetry model LASERFLO BPM2® (Vasamedics, USA), comparing burn area to the control non-burn area in day 1, 3, 5 and 7. The LDF measurement data also compared with the clinical assessment at day 14. Clinical assessment for burn wound depth at day 14 has been set as the gold standard of diagnosis which was classified into superficial second, deep second and third degree Burn. The data were statistically analysed with One-Way ANOVA test.

Results: From 52 burn areas in 7 patients. The mean age was 22.4 years (range 10 months to 48 years). Results are shown (Table 1, 2).

Table 1 Measurement by laser doppler flowmetry

Degree Burn[#]	LDF at burn area[+]	LDF ratio[++]
Superficial second (n = 22)	42.58 ± 27.01	13.94 ± 11.98
Deep second (n = 16)	14.98 ± 3.68	6.89 ± 4.15
Third (n = 14)	1.62 ± 0.84	0.54 ± 0.27
	p-value = 0.001*	p-value = 0.02*

[#]determine at post burn day 14
[+]LDF measured in Perfusion Unit (PU) = ml LD/min/100 gm tissue
[++]ratio of burn area to non-burn area
*statistically significant ($p < 0.05$)

Table 2 Accuracy of LDF comparing to clinical assessment

	Assessment by clinical post burn day 1	Assessment by LDF at burn area	Assessment by LDF Ratio
Sensitivity	67%	100%	92%
Specificity	87.50%	87.50%	50%
PPV	89%	92.30%	73%
NPV	63.60%	100%	80%

Conclusions: Laser Doppler Flowmetry is the reliable device in determining the diagnosis of burn wound depth. With high correlation in measurement of LDF at burn area and LDF ratio to exact diagnosis of burn wound depth, this method helps as an adjunctive procedure to diagnose degree of burn in early post burn day.

ESOPHAGUS

MINIMALLY INVASIVE ESOPHAGECTOMY: INITIAL EXPERIENCE AT CHULALONGKORN UNIVERSITY

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Background: Transthoracic approach for esophageal resection is considered safe but requiring thoracotomy. Transhiatal resection could be associated with serious complications. We reported our experience of minimally invasive esophagectomy in both benign and malignant esophageal diseases.

Methods: Thoracoscopic approach was used for mobilization of the diseased esophagus in 6 patients. Either laparotomy with colonic mobilization or laparoscopy with

gastric mobilization was performed in the second phase of the operation. Open cervical pharyngocolonic and esophagogastric anastomoses were done via left neck incision. Intra-operative and post-operative complications were observed. Swallowing ability was assessed in the early postoperative period.

Results: Thoracoscopic esophageal mobilization was successfully performed without intraoperative complications. One cancer patient underwent both thoracoscopic esophageal resection and laparoscopic gastric mobilization. Average operative duration of the thoracoscopic part was 122 minutes and total blood loss was 350 ml. Postoperative period was uneventful. Median length of hospital stay was 8 days.

Conclusions: Minimally invasive esophagectomy could be safely performed for both benign and malignant esophageal diseases. Postoperative complications were being assessed in our prospective trial.

THORACOSCOPIC AND LAPAROSCOPIC ESOPHAGECTOMY

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Background: Traditional esophagectomy is a complex surgical procedure associated with mortality and morbidity. Minimal invasive technique has potential advantage of being a less traumatic procedure with an easier postoperative recovery.

Objectives: To demonstrate minimal invasive esophagectomy technique and to assess early experience and outcomes.

Materials and Methods: A retrospective analysis of 25 patients who underwent thoracoscopic or laparoscopic esophagectomy was performed.

Results: There were 20 men and 5 women with a median age of 63 years (range 36-77). Indications for operation included esophageal cancer (n = 19), hypopharynx cancer (n = 5) and esophageal GIST (n = 1). Thoracoscopic esophageal mobilizations were successfully completed in 14 patients. Four patients were converted to thoracotomy due to adhesions (2), T4 lesion, and failure of one lung ventilation. Laparoscopic gastric mobilizations were successfully completed in 6 patients and only one patient was converted to laparotomy due to gastric tearing. There was one death from pneumonia after thoracoscopic surgery. Postoperative complications developed in 9 patients (pneumonia 6, pleural effusion 5, wound infection 2, and anastomosis leakage 2).

Conclusions: Minimal invasive esophagectomy is a feasible approach that can be safely performed by surgeons with experience in the field.

EOSOPHAGECTOMY VIA THORACOSCOPY AND LAPAROSCOPY - OUTCOMES IN 30 PATIENTS

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Aims: To evaluate the feasibility and results of eosophagectomy via thoracoscopy and laparoscopy.

Materials and Methods: From March 2003 to August 2005, we have performed 30 cases of eosophagectomy via thoracoscopy and laparoscopy or laparotomy at Cho Ray Hospital. Average patients' age was 62 (range 41 to 76). There were 25 cases of esophageal cancers and 5 cases of esophageal burn strictures. Tumors located in the upper third of esophagus in 2 cases, middle third 9 cases, lower third 3 cases, middle and lower thirds 6 cases, middle and upper thirds 1 case and cardia in 4 cases. In cancer patients, there were 9 cases of T4, 10 cases of T3, 4 of T2 and 2 of T1. Cancer staging were: stage IIA in 4 cases, stage IIB in 1 case and stage III in 20 cases. In 5 cases of esophageal burn stricture, 3 cases were due to acid swallowing and the other 2 were due to base swallowing. The esophagus was completely mobilized via right thorax thoracoscopy and mediastinal lymph nodes dissection was done. The esophageal reconstruction by gastric tube and dissection of lymph nodes around cardia were done via laparotomy in 15 cases. In the 12 recent cases, we performed the operation totally via thoracoscopy and laparoscopy. The gastric tube was then introduced through the posterior mediastinum to cervical level to anastomose with cervical eosophagus. Jejunostomy and right chest tube insertion were done in all cases.

Results: The mean operative time was 355 minutes. Blood loss in thoracoscopic and laparoscopic phases was minimal. Minimally invasive esophagectomy was successfully completed in 27 (90%) patients. Patient stayed in ICU for 24 hours before being transferred to ward. No operative mortality was noted. Major complications occurred in 2 (7.4%) of 27 patients and these included one patient with bleeding requiring immediate conversion to thoracotomy and one patient who developed early bowel obstruction requiring small bowel resection. Minor complications occurred in 8 patients (29.6%) including cervical anastomotic leak in 2 patients (7.4%), large pleural effusion requiring chest tube insertion (n = 2), pneumonia (n = 1), atelectasis with mucus plug requiring bronchoscopy (n =

2), and postoperative acute cholecystitis (n = 1). Late complications were seen in 2 patients (7.4%) with cervical anastomotic stricture. Average postoperative hospital stay was 10 days. No trocar sites metastasis was found. By far, 3 cases died after 18 months, 16 months and 10 months respectively due to distal metastasis. Other patients were still alive.

Conclusions: Eosophagectomy via thoracoscopy and laparoscopy or laparotomy is a safe procedure for esophageal cancers or other benign diseases. It could be done safely for tumors at any locations of the esophagus and even with advanced stages. However, esophageal mobilisation could be done more easily when the tumor does not invade adjacent organs. Patients experience less pain in postoperative period. Less pulmonary complications were detected as thoracotomy was avoided, like in the conventional 3 field operation. We could as well perform mediastinal lymph nodes dissection via thoracoscopy. In advanced unresectable tumors, thoracoscopy helps in staging and avoiding an unnecessary thoracotomy. The operative time should decrease with experience.

COMPARATIVE STUDY OF TREATMENT OUTCOME IN ACHALASIA: SURGICAL MYOTOMY VS PNEUMATIC BALLOON DILATATION

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Objective: Less was known regarding the effectiveness of surgical myotomy and pneumatic balloon dilatation in the treatment of achalasia. This study aimed to compare the treatment outcome of surgical myotomy and pneumatic balloon dilatation.

Materials and Methods: Medical records of 72 patients with the diagnosis of achalasia admitted at King Chulalongkorn Hospital were reviewed. All patients were prospectively interviewed by telephone call during April-May 2007 for 4 symptoms including dysphagia, regurgitation, heart burn and chest pain. Each symptom was scored ranging from 0 to 3 depending on symptom severity. Patients with total symptom score less than 3 were classified in favorable outcome group. Those who had either score more than 2 or underwent second intervention (surgery or balloon dilatation) were considered in an unfavorable outcome group. Patients who lost to follow up or had treatment other than surgical myotomy or pneumatic balloon dilatation were excluded from this study.

Results: There were 45 patients who fulfilled the criteria. Of these, 31 were admitted to the Department of Medicine and underwent pneumatic balloon dilatations and 14 admitted to the Department of Surgery and had surgical myotomy. There was no treatment mortality. Five-year favorable outcome was 78% for surgical myotomy and 56% for pneumatic balloon dilatation ($p = 0.03$). In pneumatic dilatation group, 9 patients underwent 2 dilatations, 4 had 3 dilatations and 1 had 6 dilatations. If patients with repeated dilatation were not considered as unfavorable and symptom score after last treatment were analysed, 5-year favorable outcome of pneumatic dilatation was comparable to that of surgical myotomy (82% vs 78%, p = ns).

Conclusions: Surgical myotomy is more effective than single pneumatic balloon dilatation in the treatment of achalasia. However, if repeated dilatation is included, favorable outcome is comparable to that of surgical myotomy.

ENDOSCOPIC ULTRASOUND (EUS) CAN PREDICT OUTCOME OF DILATATION IN CORROSIVE STRICTURE OF THE ESOPHAGUS

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Introduction: Corrosive strictures of the esophagus are usually treated with dilatation. However, responses to dilatation vary among patients and some even fail the dilatation. In those who fail the dilatation, surgical treatments often in the form of esophagectomy with colonic bypass are usually done. Prediction of the subset of patients who will benefit from dilatation is essential since it can avoid unnecessary dilatation in those who eventually are going to fail dilatation, which itself is associated with certain risks. The aim of this study was to determine if endoscopic ultrasound (EUS) can predict outcome of dilatation in corrosive stricture of the esophagus.

Materials and Methods: We have studied EUS in 8 patients with corrosive strictures. All patients were dilated using Savary-Gillard dilators. EUS was done when the endoscope could be passed through the stricture after dilatation. EUS scanning of the entire length of the esophagus was done and wall thickness was recorded at 8 specific sites of the esophagus (from upper to lower esophagus respectively). Total wall thickness was calculated (EUS wall thickness score). Relationship between EUS wall thickness score and number of dilatations needed to be done was compared.

Results: Average number of dilatation in all patients was 17.4. Average EUS wall thickness score was 36.7. One patient with maximum score of 53.7 was subjected to

surgery. Pearson correlation between number of dilatation and EUS wall thickness score was 0.77 with p-value of 0.023.

Conclusions: EUS wall thickness score is significantly correlated with the number of dilatation needed to be done to achieve lumen patency. It could be used to predict the response to dilatation in patients with corrosive esophageal stricture.

STOMACH

LAPAROSCOPIC GASTROJEJUNOSTOMY FOR GASTRIC OUTLET OBSTRUCTIONS

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Introduction: Patients with gastric outlet obstruction as a result of chronic peptic ulceration are well suited to undergo gastrojejunostomy. Another group of gastric outlet obstruction, including those patients with obstructive gastric carcinoma and extensive metastatic spread or with associated medical illness where resection is ill advised, are suitable for palliative bypass. The extragastric benigh and malignant diseases with duodenal obstruction are also suitable for gastrojejunostomy if resections could not be done. The potential advantages of laparoscopic surgery for major organ surgery have been well documented, i.e. decreased hospital stay, less operative pain, and shorter recovery period. With improvement of the technique and more experiences with laparoscopic procedures, it has been demonstrated that morbidity and mortality rates are similar to or better than open procedures. The laparoscopic gastrojejunostomy techniques may be useful for those who practice in laparoscopic surgery.

Materials and Methods: Five patients with benign and malignant gastric outlet obstructions underwent laparoscopic procedures. Laparoscopic truncal vagotomy and gastrojejunostomy were performed in two patients with chronic peptic ulcerations. Only laparoscopic gastrojejunostomy was performed in two patients with malignant obstructions. Hand-assisted laparoscopic gastrojejunostomy was employed in a patient having choledochoduodenostomy and pancreaticojejunostomy previously for complicated chronic pancreatitis. The combination of stapling with continuous suture closure of the residual defect is attractive in the totally laparoscopic gastrojejunostomy. Exploration of the abdominal cavity and retrieving the distal small bowel for outside anatomosis is also attractive in hand-assisted laparoscopic procedure.

Results: All patients were successfully managed by laparoscopic procedures. Neither perioperative complications nor serious postoperative problems were detected. Surgical outcomes during the hospitalization and the follow-up period were satisfactory.

Conclusions: Laparoscopic surgery remains a valuable addition to the surgical armamentarium. Most surgeons are not familiar with laparoscopic techniques which can be used in every branch of surgery. Extensive laparoscopic skills will be needed in the future. Training by practicing and following advisable techniques may be useful for the improvement of this new trend of surgery.

USE OF BIB INTRA-GASTRIC BALLOON IN ASIAN PATIENTS

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The BIB intra-gastric balloon is a popular form of non-surgical intervention in the management of morbid obesity. This is either used in isolation or as part of a staged bariatric procedure. Large series of BIB intervention has been reported in the literature. Report on use in Asian patients is uncommon.

Alexandra Hospital in Singapore has the largest single institution experience in bariatric intervention. Gastric banding is the most commonly carried out procedure in Singapore. We report a small series of BIB intervention in Singapore patients. Results including efficacy of weight and co-morbidity reduction, short-term morbidities, potential for weight regain after removal of the balloon, is reported.

A COMPARISON OF 4 DIFFERENT PROPRIETARY GASTRIC BANDS

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Lap Band surgery is fast becoming a favorite procedure for the surgical treatment of morbid obesity. That gastric

restriction by banding is efficient in weight and co-morbidity reduction is well established. Certain short and medium term morbidities have also been identified.

There are several popular brands of bands available on the market. They can be low volume high pressure; or high volume low pressure. Each of these brands has their own champions.

Alexandra Hospital in Singapore has the largest single institution experience in gastric banding procedure in South East Asia. Information relating to Asian patients undergoing gastric banding using different proprietary bands is so far not available.

We carried out a small prospective study of 4 different proprietary bands. The average follow up is 12 months. Weight reduction, short-term complications, and other surgical issues are addressed with respect to these different bands. The result is presented.

SMALL BOWEL

THE EFFECT OF NARCOTIC ADMINISTRATION ON ABDOMINAL SIGNS IN ACUTE APPENDICITIS PATIENTS

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Background: Most of acute appendicitis patients are diagnosed with tenderness at the McBurney's point. Nevertheless in early cases, an observation for a period of time might be needed which prolongs the suffering of the patients. The utilization of narcotic drugs is still controversial since it minimizes physical signs. Therefore, we purposed to study the effect of narcotic administration on abdominal signs of acute appendicitis patients.

Materials and Methods: A randomized double-blinded controlled trial of patients diagnosed with acute appendicitis at Siriraj Hospital was conducted. Patients were excluded if physical examinations revealed generalized peritonitis or having a history of asthma. Patients were randomized to receive either 0.1 mg/kg of morphine sulfate (study group) or 10 ml. of normal saline (control group) intravenously. Pain score was evaluated using the visual analog scale (VAS). Abdominal signs were examined before and 30 minutes after administrating the medication by two independent investigators.

Results: Eighty patients were enrolled and no complications were documented. Pain scores before administrating the medication in the study and control groups were 6.11 ± 2.32 and 6.59 ± 2.64 respectively. Morphine sulfate significantly reduced the pain score (3.92 ± 2.85) compared with the control group (5.61 ± 2.78) ($p < 0.001$) and altered the tenderness and rebound tenderness in none of the patients studied.

Conclusions: Intravenous narcotic administration is safe and decreases the pain and suffering in patients with appendicitis whereas it does not minimize the physical signs. This practice should be widely used to reduce patient's suffering during the period of observation or waiting the operation.

ENDOSCOPIC DECOMPRESSION OF POSTOPERATIVE SMALL BOWEL OBSTRUCTION

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Introduction: Postoperative small bowel obstruction is a fairly common postoperative complication of colonic resection. In a significant proportion, operative decompression is necessary with concomitant morbidity.

Materials and Methods: We treated three patients with postoperative small bowel obstruction after colonic resection with endoscopic decompression. Two of these were patients with colonic cancer who developed small bowel obstruction soon after laparotomy and resection. One patient developed small bowel obstruction 18 months post colonic resection followed by chemo-radiation. All three failed conservative treatment and were candidates for laparotomy. Instead they were treated with colonic intubation to the lower small bowel and decompression. Two had additional small bowel intubation and decompression using a gastroscope.

Results: All three small bowel obstructions resolved after the procedure obviating a repeat laparotomy. The third patient had recurrent small bowel obstruction due to peritoneal recurrence of her colonic cancer and required a further laparotomy several months later.

Conclusions: Endoscopic intubation and decompression is a feasible and minimally invasive procedure for the treatment of post-operative small bowel obstruction. In

some cases, further laparotomy can be avoided.

PERCUTANEOUS ENTEROSTOMY: A COMPREHENSIVE AUDIOVISUAL OF UPPER GASTROINTESTINAL TRACT ACCESS

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Several techniques have been developed for enteral access. Percutaneous enterostomy tube placement provides a reliable method. This audiovisual reviews indications for and methods of percutaneous, enteral access (pull and push PEG, PEGJ, PEJ). Included is a review of newer methods of percutaneous access, the introducer PEG, and percutaneous trans-esophageal gastrostomy (PTEG).

GIST OF SMALL BOWEL: UNCOMMON CAUSE OF MASSIVE GASTROINTESTINAL BLEEDING (GIB)

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Background: At present, mesenchymal tumor of gastrointestinal (GI) tract has been classified into GIST, smooth muscle tumor and schwannoma. GIST is the most common and originates from interstitial cell of Cajal. Clinical signs and symptoms depend on its size and location. Small tumors are usually asymptomatic and accidentally found at endoscopy or physical examination. Large tumors present with palpable mass, obstructive symptom or bleeding from erosion of the mucosa.

Objective: To present a case of recurrent massive GIB from GIST of small bowel and review hospital cases.

Material and Methods: A 30-year-old man was admitted in May 2006 because of hematemesis and melena with unstable hemodynamic status. Gastroscopy revealed duodenal ulcer (DU) without stigmata of recent hemorrhage. Omeprazole and 2 units of blood transfusion were given. Five days later he was re-admitted with the same problems. Repeated gastroscopy showed a clean base DU. Exploratory laparotomy was performed after he had hematochezia and hypotension on the 5th admission day. Segmental resection of proximal jejunal mass was performed. No liver or intraperitoneal mass was found. Pathological diagnosis was GIST. The tumor size was 5.5 cm. with 3 mitoses per 50 HPF. Three cases of GIST of stomach were diagnosed in the last ten years at our hospital. No recurrent tumor was found in the follow-up period of 7, 5 and 4 years respectively.

Discussion: Because of malignant potential and resistance to chemo-radiation therapy, GIST of any size should be treated by surgical resection with free margin. Biopsy of localized disease or iatrogenic rupture during operation should be avoided. Malignant potential depends on size and mitoses. CT scan is useful for evaluation of tumor mass and metastases. Immunohistochemical study for the differential diagnosis of GIST from other mesenchymal tumor should be done.

Conclusions: GIST is a rare cause of massive and acute GIB. Looking for recurrent intra-abdominal or liver metastases is necessary after surgery. Adjuvant or neo-adjuvant imatinib are in the clinical studies.

ACCURACY OF PER-RECTAL EXAMINATION FOR DIAGNOSIS AND PREDICTING TYPE OF APPENDIX IN PATIENTS WITH ACUTE APPENDICITIS

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Introduction: Type of appendix is a well-recognized factor responsible for difficulty in appendectomy. Traditionally, per-rectal examination should be performed in all patients with acute abdomen.

Purpose of study: Our goal of this study was to demonstrate the accuracy of per-rectal examination for the diagnosis of acute appendicitis and to predict pelvic type of acute appendicitis by the result of per-rectal examination.

Material and Methods: We have reviewed relationship between positive per-rectal examination and all types of appendix in patients with acute appendicitis. From January 2006 to October 2006, 206 cases of clinically diagnosed acute appendicitis were operated at our institution.

Results: Per-rectal examination was performed in 113/142 (80%) patients. At operation, pelvic type was the most common type. Accuracy of per-rectal examination for the diagnosis of acute appendicitis and predicting pelvic type appendicitis were 52.3% and 48% respectively.

Conclusions: Our study demonstrated that accuracy of per-rectal examination as one of clinical diagnostic tools had low sensitivity and specificity and could not be routinely used as predictor for determining the type and the diagnosis of acute appendicitis.

HEPATOBILIARYPANCREATIC SURGERY

HEPATECTOMY WITH HILAR RESECTION FOR HILAR CHOLANGIOCARCINOMA

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Background/Aim: Extensive hepatectomy with hilar resection offers the best possibility of curative resection and prolonged survival in patients with hilar cholangiocarcinoma. The aim of this study was to demonstrate this procedure by DVD presentation.

Materials and Methods: From May 2001 to May 2007, 260 patients underwent hepatectomy for benign and malignant hepatobiliary tract diseases by the author. Of these, 46 hepatectomies with hilar resection were performed for cholangiocarcinoma with hilar involvement. In the case demonstration, a 58 year-old woman presented with epigastric pain for 2 months and jaundice for 2 weeks. CT scan revealed an ill-defined infiltrative tumor at the hepatic duct confluence with effacement of the right portal vein.

Results: The patient underwent right hepatectomy with caudate lobe and hilar resection successfully without complications. Intraoperative blood loss was 900 ml. Neither Pringle maneuver nor blood transfusion was required. The patient was discharged at post-operative day 9. Histopathology revealed well differentiated hilar cholangiocarcinoma with free margins and without nodal metastasis. The patient still survives without recurrence at 1 year.

Conclusions: For cholangiocarcinoma with hilar involvement, attempt to perform potential curative resection is recommended, and is the only hope to cure the resectable disease.

THE MOST EXTENSIVE OPERATION FOR ADVANCED BILIARY TRACT CANCER

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Background/Aim: Hepatopancreaticoduodenectomy is the most extensive operation for advanced biliary tract cancer. The aim of this study was to evaluate operative results of these procedures.

Materials and Methods: Since January 2006, 3 patients with advanced biliary tract cancer underwent extensive procedures of more than hepatectomy with hilar resection. The procedures included a hepatopancreaticoduodenectomy for a patient with diffused extrahepatic cholangiocarcinoma, a hepatopancreaticoduodenectomy with portal vein resection and reconstruction for a patient with hilar cholangiocarcinoma with duodenum and portal vein involvement, and a hepato-pancreatico-duodeno-colectomy with abdominal wall resection for a patient with gallbladder cancer with liver, duodenum, colon and abdominal wall involvement.

Results: Operative time was 840, 720 and 900 minutes, respectively. Intraoperative blood loss was 1500, 1500 and 2800 ml. The volume of blood transfusions was 0, 2 and 4 units. Post-operative hospital stay was 10 and 45 days. The last case was still hospitalized. There were complications of intraabdominal abscess in the second and the third case. The surgical margins were histologically negative in 2 cases.

Conclusions: For advanced hepatobiliary tract cancer with invasion of adjacent organs, hepatopancreaticoduodenectomy may be required for curative resection. With the progress and experience in hepatobiliary and pancreatic surgery, attempt to perform hepatopancreaticoduodenectomy is the only hope to cure this locally advanced disease.

OUTCOMES FOLLOWING HEPATECTOMY WITH HILAR RESECTION FOR CHOLANGIOCARCINOMA WITH HILAR INVOLVEMENT

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Background/Aim: Cholangiocarcinoma with hilar involvement remains a challenging disease for surgeons. In unresectable cases, patients rarely live more than 6 months. Hepatectomy including hilar resection is a potentially curative resection for this disease. The aim of this study was to evaluate surgical outcomes of these extensive procedures.

Materials and Methods: From May 2001 to May 2007, 118 cases with cholangiocarcinoma underwent hepatecomy by the author. Of these, 46 hepatectomies with hilar resection were performed. Among the operations, caudate lobe resections were included in 20 cases, hepatopancreaticoduodenectomy in 3 cases, and portal vein resection and reconstruction in 3 cases. Clinical data and outcomes following hepatectomy with hilar resection were reviewed and analyzed retrospectively.

Results: There were 36 men and 10 women with a mean age of 53 years. The mean operative time, intra-

operative blood loss, transfused blood and post-operative hospital stay was 546 min, 1978 ml, 2 unit and 19 days respectively. There were 11 morbidity cases (24%) including 5 of bile leakage, 5 of intraabdominal abscess and 1 of strangulated bowel obstruction. One patient (2%) died post-operatively due to toxic cholangitis. The surgical margins were histologically negative in only 6 cases (9%). The 1-, 2- and 3-year survival rate were 82%, 61% and 56%, respectively. The longest survivor is still alive 5 years without recurrence.

Conclusions: Only patients treated with resection ever achieve the chance for long term survival. Curative resection with negative margin is the only hope for cure and a challenge for hepatic surgeons. Even with positive histological margins, most patients survived more than one year.

SINGLE-STAGE ERCP WITH LAPAROSCOPIC CHOLECYSTECTOMY IN PATIENTS WITH GALLSTONES AND SUSPECTED COMMON BILE DUCT STONES

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Background: The management of gallstones with suspected common bile duct stones by endoscopic retrograde cholangiopancreatography (ERCP) with removal of CBD stones, followed by laparoscopic cholecystectomy (LC) was preferred in several centers. The duration between these two procedures is still controversial.

Objective: To evaluate the benefit and feasibility of single-stage ERCP and LC in patients with cholelithiasis and suspected choledocholithiasis at Ratchaburi hospital.

Materials and Methods: From January 2004 to April 2007, the study group included patients who had gallstones with suspected common bile duct stones that demonstrated abnormal liver function test or abnormal upper abdomen ultrasonography or with history of gallstone pancreatitis. ERCP was performed and followed by endoscopic sphincterotomy (EST) with stone removal in cases of CBD stone diagnosed intraoperatively. Subsequently, LC was performed in the same setting. Operative time, successful rate, morbidity, mortality and hospital stay were evaluated.

Results: Fifty-two patients were enrolled in this study (17 males, 35 females). The mean age was 51.8 years (17-79 years). Intraoperatively, common bile duct stones were found in 22 cases (42.31%), and EST with stone removal was performed. Mean LC time was 67 minutes (25-167 minutes) whereas the mean of overall operative time was 117 minutes (70-200 minutes). The conversion rate was 1.92% (1/52 case). Duodenal leakage was found in 1 case (1.92%) and the patient died from sepsis and acute MI. The median length of hospital stay was 6 days (3-24 days).

Conclusions: The single-stage ERCP with LC approach for concomitant gallstone with CBD stone or suspected CBD stone could be done safely and beneficially by reducing the number of interventions and anesthetic risks, shortening hospital stay and with comparable difficulty, morbidity and mortality.

RISK FACTORS FOR GALLSTONE DISEASE IN THAI POPULATION

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Objectives: A case-control study was performed at Rajavithi Hospital during 2005 to 2006 to assess risk factors associated with gallstone disease (GD).

Materials and Methods: The total of 407 cases, 207 with GD and 200 without GD, were included and confirmed by ultrasound. Clinical data were collected by means of a questionnaire.

Results: Using multivariate analysis, only three factors including type of meat, history of cirrhosis and age were associated with GD. Odds of GD in people consumed meat with heavy and moderate fat had higher than mild fat 3.5 and 3.6 time (95% CI for OR 1.4-7.3 and 1.5-7.8). People with cirrhosis had odd for GD 13.9 time more than group without cirrhosis (95% CI for OR 1.7 -111.8). Patient's age >60 and 40-60 years had odds for GD 6.3 and 3.2 time comparing with group of age ≤39 years (95% CI for OR 2.3-17 and 1.4-7.6). There was no statistical significant association with sex, smoking, alcohol consumption, oral contraceptive use, Thallassemia, DM and BMI.

Conclusions: These study suggests that diet, cirrhosis and age are major risk factors for gallstone formation in Thai lifestyle.

WHIPPLE'S PROCEDURE FOR SEVERE PANCREATICODUODENAL INJURY: A CASE REPORT

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Background: Combined pancreaticoduodenal injuries from trauma are relatively uncommon, occurring in approximately 1-2% of abdominal trauma. Pancreaticoduodenectomy (Whipple's procedure) is rarely required (1-5%) and carries high morbidity and mortality rates. We

report a successful operation in this rare and difficult circumstance.

Case report: A 22-year-old man presented with gunshot wound at anterior abdomen 15 minutes prior to admission to the hospital. He complained of abdominal pain although his vital signs were stable. The patient was advised for emergency celiotomy. Gunshot wounds of the left lobe of the liver, the stomach, the head of the pancreas, the distal part of the common bile duct and the second part of the duodenum were found at the operation. The bullet was found at the right psoas muscle. Due to the unreconstructable damage, Whipple's procedure was performed. End to end pancreaticojejunostomy, end to side choledochojejunostomy, gastrojejunostomy and feeding jejunostomy were done. Operative time was 5 hours and 15 minutes. Estimated blood loss was 1,000 ml. In the postoperative period, the patient developed upper gastrointestinal bleeding. Re-exploratory laparotomy was done and the bleeding was found from the lesser curvature of the stomach and the cut surface of the pancreas. Gastrotomy and jejunotomy with suturing of the bleeding points were performed. Subsequently, the patient developed pancreatic fistula which was managed by NPO and enteral nutrition support via feeding jejunostomy without surgical intervention. The patient was discharged home after a hospital stay of 42 days.

Conclusions: We report a patient with severe pancreaticoduodenal and common bile duct injury from gunshot wound who underwent pancreaticoduodenectomy (Whipple's procedure). He developed postoperative bleeding which required re-operation, and pancreatic fistula which was successfully treated by conservative management. The patient survived without long term complications over 2 years follow-up. Pancreaticoduodenectomy remains a viable option in the management of combined pancreatic and duodenal injuries in suitable cases.

PANCREATICODUODENECTOMY FOR DISEASES OF THE HEAD OF PANCREAS AND PERIAMPULLARY AREA AT CHORAY HOSPITAL IN 6 YEARS: A 101-CASE REPORT

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Aims: The study aimed at evaluating short-term outcomes of Whipple procedure in patients with diseases of the head of pancreas and periampullary area.

Materials and Methods: Between April 1997 and October 2003, 101 patients with diseases of the head of pancreas and periampullary area who underwent pancreaticoduodenectomy at the General Surgery Department, Cho Ray Hospital, were analyzed.

Results: The overall perioperative mortality rate was 9.9% (10/101). The mortality in 3 patients (3/10) were due to pancreatic, gastro-jejunostomy and biliary fistulas. The other 7 patients died from hepatic failure, renal failure and cardiac complications. The overall perioperative morbidity rate was 32% with 5 patients requiring relaparotomy. Among these, it was due to pancreatic fistula in 7.9%, biliary fistula 4.9%, gastrojejunal anastomotic leak 3.9%, digestive bleeding 2.9% and bleeding from operating field 4.9%. Comparing the period 1997-2001 with 2002-2003, the mortality and morbidity reduced from 11% to 6.8% and 32% to 27.5% respectively.

Conclusions: Pancreatic fistula was not a lethal complication after Whipple procedure and rarely required relaparotomy as before. It might be argued that better preoperative preparation, intensive postoperative care and major progresses in surgical techniques and the introduction of octreotide lead to the favorable results of Whipple procedure. Duodenopancreatectomy combined with extended lymphadenectomy does not significantly increase morbidity and mortality rates. Extensive lymph node dissection is needed in curative surgery of periampullary adenocarcinoma in terms of oncology.

COMPARISON OF HEPATECTOMY OUTCOME USING INTERMITTENT PEDICLE OCCLUSION WITH ISCHEMIC INTERVALS OF 15 VERSUS 30 MINUTES AFTER ISCHEMIC PRECONDITIONING

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Background: Clinical trial of hepatectomy using intermittent pedicle occlusion (IPO) with ischemic interval of 15 versus 30 minutes after preconditioning is still limited. This study aimed to identify the effect of ischemic preconditioning followed by IPO with ischemic interval of 15 versus 30 minutes.

Materials and Methods: Between January 2005 and December 2006, 32 consecutive patients with the diagnosis of hepatocellular carcinoma were scheduled for hepatic resection at the Rajavithi Hospital. Eighteen patients who fulfilled the inclusion criteria were undertaken to run the protocol of ischemic preconditioning of 10 minutes ischemia and 10 minutes reperfusion before hepatectomy. Then repeated cycle of ischemic interval of 15 minutes with

5 minutes of reperfusion (SG group) and ischemic interval of 30 minutes with 5 minutes of reperfusion (PG group) were performed until completion of hepatectomy. Eight patients were in the SG, and 10 patients in the PG, All data were analyzed.

Results: Total ischemic and reperfusion time were not significantly different in the SG and PG groups (p = 0.248). Hospital stay was 14.8 days in SG and 14.3 days in PG groups (p = 0.893). There was no perioperative death. But postoperative complications occurred in 3 patients, one case of upper GI hemorrhage in both groups and one case of perihepatic collection in the PG group. There were no differences between the two groups in total bilirubin, INR, AST, ALT and prothrombin time.

Conclusions: Hepatectomy using IPO with ischemic interval of 15 versus 30 minutes after ischemic preconditioning showed no differences in protecting remnant liver function in terms of bilirubin, INR, AST, ALT, and prothrombin time.

THE POTENTIAL OF HUMAN MESENCHYMAL STEM CELLS TO DIFFERENTIATE INTO HEPATOCYTES

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Introduction: Most liver diseases lead to hepatocyte dysfunction with the possibility of eventual organ failure. The replacement of diseased hepatocytes and the stimulation of endogenous or exogenous regeneration by human mesenchymal stem cells are the main aims of liver-directed cell therapy.

Objective: To investigate (in vitro) hepatogenic differentiation of human mesenchymal stem cells derived from bone marrow aspiration.

Materials and Methods: Human mesenchymal stem cells were cultured on collagen-coated dish and were induced differentiation by treatment with hepatocyte growth factor for 7 days. Then these cells were induced maturation by treatment with insulin and dexamethasone for 21 days. The morphology of these cells was observed under phase-contrast microscope. The expression of liver specific genes was identified by RT-PCR and immunofluorescent-staining technique.

Results: Hepatogenic differentiation of human mesenchymal stem cells was observed. In the undifferentiated state, human mesenchymal stem cells were spindle shape and resemble fibroblasts. In the differentiation phase, these cells were changed to polygonal shape. The expression of albumin and α-fetoprotein were identified after 21 days of maturation period.

Conclusions: The data indicated that human mesenchymal stem cells have potential to generate hepatocytes. This system may be used as a liver-directed cell therapy in the future.

LIVER RESECTION FOR HILAR CHOLANGIOCARCINOMA

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With the recent advances in the anatomic knowledge of the liver and hepatic hilus, improved diagnostic and surgical techniques, and refinements in pre- and postoperative care, radical liver and bile duct resection has been performed for hilar cholangiocarcinoma.

This video presentation demonstrates the techniques to handle with this challenging operation.

COMPLICATIONS OF MAJOR LIVER RESECTION FOR HILAR CHOLANGIOCARCINOMA

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Background: Complications of major liver resection for hilar cholangiocarcinoma are still high. Preoperative biliary drainage to reduce its complications remains controversial.

Materials and Methods: Retrospective review of all hilar cholangiocarcinoma patients who underwent liver and bile duct resection without preoperative liver drainage from May 1999 through May 2000 was conducted at Srinagarind Khon Kaen University Hospital.

Results: Thirty consecutive patients underwent major liver resection. Seven (23.3%) patients had no complications, another 8 (26.7%) had minor complications only, and the remaining 15 (50%) had major complications. The morbidity rate was as high as 76.7%. Major complications required re-laparotomy in 6 (20%) patients. Of 15 patients with major complication(s) 13 recovered, the remaining 2 patients died of intra-abdominal bleeding, intra-abdominal collection, sepsis and liver failure with other organ failure(s). Thus the 30-day mortality was 6.7% (2/30). Pleural effusion was the most frequent complication and found in 12 (40%) patients. Liver failure developed in 6.7% of 15 patients which was the same as renal failure. Intra-abdominal bleeding, sepsis and intra-abdominal

collection were the leading causes of multiorgan failure and death.

Conclusion: Liver resection for hilar cholangiocarcinoma is risky owing to impaired liver functions in jaundice patients. Our aim is to reduce mortality to less than 5%.

MAJOR HEPATIC RESECTION FOR HILAR CHOLANGIOCARCINOMA WITHOUT PREOPERATIVE LIVER DRAINAGE

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Background: The role of preoperative biliary drainage prior to hepatic resection in the presence of obstructive jaundice remains controversial. We reported obstructive jaundice patients with hilar cholangiocarcinoma who underwent hepatic resection following noninvasive assessment and without preoperative biliary drainage.

Materials and Methods: The records of all patients with hilar cholangiocarcinoma who underwent major hepatic resection at Srinagarind Khon Kaen University Hospital over the 4-year period were reviewed.

Results: Thirty consecutive patients underwent major liver resection. There were 2 deaths. Twenty-three patients (76.7%) experienced postoperative complications. Liver and renal failures were surprisingly low (2%).

Conclusions: Major liver resection without preoperative biliary drainage is safe in most hilar cholangiocarcinoma patients. Whether preoperative biliary drainage could improve these results remains to be determined.

LEFT LAPAROSCOPIC HEPATECTOMY: A CASE REPORT

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Case Report: A symptomatic mass size 5 cm. was found incidentally by ultrasonography at left subphrenic area during medical check up of a 73-year-old female patient. Blood tests revealed elevation of AFP to 73 IU (normal 0-15). CT scan showed an ill-defined mass between the left lobe of the liver and stomach. Gastroscopy found normal gastric mucosal lining with extraluminal pressure from the mass. There was no evidence of metastasis. She underwent laparoscopy under general anesthesia and the mass was found to be a hepatic tumor at the edge of the left lobe with attachment or adhesion to the stomach and surrounding omentum. The tumor was dissected and resected en-bloc laparoscopically successfully with adequate margin, using ultrasonic dissection and endo-stapler for bleeding control and closure of portal triad structures and hepatic veins. Estimated blood loss was 300 ml. which was minimal and comparable to open surgery. The specimen was put into a collecting plastic bag and was extracted out through a small incision which was extended from a port site without contamination. Pathological study revealed a hepatocellular carcinoma with free surgical resection 3 cm. away. The patient recovered very well post-operatively without immediate complications. She could start oral intake on the 2nd post-operative day and was discharged on the 7th post-operative day.

Conclusions: Laparoscopic hepatic resection can be performed successfully and safely in selected patient, even in the elderly. The patient experiences much less post-operative pain, needs shorter hospital stay and recovery and can resume normal activity very soon.

CHOLECYSTOENTERIC FISTULA: FREQUENT ENCOUNTERS OF AN UNCOMMON KIND. TWO YEARS EXPERIENCE IN A REGIONAL CENTRE IN AUSTRALIA

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Introduction: Cholecystoenteric fistula is a recognised but rare complication of cholelithiasis and chronic cholecystitis. A fistula may develop between either the gallbladder or common bile duct and any of the duodenum, stomach or colon. Management of a fistula depends on a number of factors. A range of treatments has been previously reported in the literature.

Methodology: A series of five cases seen at our facility (with population drainage of 150,000) within the past 18 months is reported. In the same period a total of 253 cholecystectomies were undertaken. The poster will describe each case and will highlight the important findings of each case.

Results: It was interesting to identify such a high incidence of this rare complication in a regional centre. There were two cases of gallstone ileus. These were treated conservatively and in both cases the stone passed spontaneously and the obstruction resolved. They were

planned for future resection. Both opted against surgery at the time of follow up. The third case underwent surgical exploration for cholecystoduodenal fistula yet no active resection was done due to extensive scarring at the site. The final two patients each had a cholecystogastric fistula. They successfully underwent early surgical repair. One underwent a laparoscopic cholecystectomy and repair of the fistula while the other had an open repair with common bile duct exploration and clearance of incidental duct stones.

Conclusions: A wide range of treatment options can be considered for the management of cholecystoenteric fistulae. This presentation outlines a case series involving the same surgical pathology yet undergoing varied management depending on a number of factors. These may include individual patient factors such as the timing of diagnosis. They may also include operator experience and the facilities available at a particular institution. Early surgical intervention for acute cholecystitis should be emphasized as a rational treatment to avoid the complications of chronic disease. The frequency of this otherwise rare entity may reflect late presentation in cases where referral or intervention had been delayed.

COLON AND RECTUM

SHORT-TERM OUTCOMES OF THE LIFT (LIGATION OF THE INTER-SPHINCTERIC TRACT) PROCEDURE FOR TREATMENT OF FISTULA-IN-ANO

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Introduction: The ideal treatment for fistula-in-ano should have high healing rates, low recurrence rates, preserve sphincter function and minimize patient discomfort. Currently used accepted techniques such as fistulotomy, seton insertion and advancement flaps do not always fulfill all these requirements. We present our experience with a promising new technique, the ligation of the inter-sphincteric tract (LIFT) procedure.

Materials and Methods: Patients deemed to require surgical intervention for fistula-in-ano between April 2006 and January 2007 were prospectively enrolled. Extra-sphincteric fistulas were excluded. Pre-operatively, patients underwent anal manometry and endoanal ultrasonography. Under general anaesthesia, the LIFT procedure was performed. A partial core-out fistulotomy was also included. Patients were followed up every one to two weeks until healing occurred. Anal manometry and endoanal ultrasonography were repeated at least six weeks post-operatively and if there were any clinical indications. Outcomes recorded included operative time, healing rate, healing time, pain scores and complications.

Results: Seventeen patients were enrolled. The majority (11/17) had high fistulas as defined by ultrasonography. Mean operative time was 42.6 minutes (range 15-95 minutes). Pain scores and complication rates were low. The healing rate was 76.5% and mean healing time was 6 weeks. There were four failures, three of which were high fistulas. There was one late recurrence. The longest follow up was 52 weeks. Post-operative anal manometry did not show significant changes from baseline.

Conclusion: The LIFT procedure is a promising technique for treating even high fistula-in-ano safely.

SUCTION LIGATOR: AN INSTRUMENT FOR RUBBER BAND LIGATION

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Background: Internal hemorrhoid is a common problem that is usually found in surgical practice. Treatment of internal hemorrhoid varies from medical treatment to surgical treatment, depending on the severity of the disease. Practically, internal hemorrhoid grade II and III are recommended to be treated by rubber band ligation which is claimed to be the most effective treatment in out-patient unit. Barron's gun is the instrument of choice but may encounter some problems. Firstly, to grasp the pile at a proper position in a single grasping is not easy and this may result in bleeding problem which interferes with the next grasping and may result in an improper banding. Secondly, when the pile is a large one, the banding may not ligate completely. To solve these problems, a suction ligator is designed and developed.

Objectives: To present a device to assist in the rubber band ligation.

Materials and Methods: Suction ligator composes of three parts, loading part, ligating part and handling part.

The loading part is a coneshape piece, used as a loader of a rubber band. The ligating part is a two cylindrical tubes, inner tube and outer tube, which wear and fit properly together. The tubes are applied from a pair of endcut 5 ml and 10ml syringes or a pair of 10 ml and 20 ml syringes. The inner tube acts as a sucker and fixes the pile during banding while the outer tube, which can slide freely on the inner tube, acts as a pusher to lodge the rubber band. The handling part is a metal tube which is designed as a handle. One end of the tube is connected to the inner tube (of ligating unit) while the other end is connected to a suction unit. At the upper part of the handle, there is a hole to control the intensity of sucking. To apply the instrument, the two cylindrical tubes (5 ml and 10 ml syringes) are worn together in a position that the tip of inner tube protrudes out of the outer tube. The loading part is connected to the inner tube and a rubber band is loaded. The inner tube is then connected to the handling part and a suction unit. Once the pile is identified and selected, the tip of inner tube is pushed and occluded on the pile. The suction is switched on and the pressure is gradually increased (by occluding the hole with right thumb) until the pile is sucked and pulled inside the inner tube. When it reaches a proper position (you can see through the transparency of cylindrical tube) the outer tube is then slided forward (with index finger) and pushes rubber band to ligate the pile. If a large pile is encountered and it is estimated that a pair of 5ml and 10ml syringes may not make a complete banding, a pair of 10 ml and 20 ml syringes may be selected. Steps of application are followed in the same ways as mentioned before.

Results: Suction ligator was successfully applied to 40 grade II and III internal hemorrhoid patients during 2003-2006 with satisfactory results.

Conclusions: The instrument is modified from basic medical supplies that can be afforded in all hospitals with a low cost budget. Without meticulous procedure, this instrument is easy to apply.

MALIGNANT LYMPHOMA OF THE RECTUM

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Extra-nodal Lymphoma presenting as a primary localized neoplasm is very uncommon. The gastrointestinal tract is the most common site of involvement by extra-nodal lymphoma, typically involving the stomach or small bowel. Localized involvement of the large bowel is very uncommon.

We report a case of B cell lymphoma presenting as a localized lesion in the rectum. Total colonoscopy also identified a caecal adenocarcinoma. He was found to be HIV positive on further investigation. It is postulated that the primary rectal lymphoma could be a feature of his HIV status.

A brief review of the literature relating to colonic lymphoma is presented.

CANCER IN FISTULA-IN-ANO

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Fistula-in-ano is a common ano-rectal condition requiring surgical excision. Cancer in the fistula tract has been reported but extremely rare. This is even more so when the fistula is not associated with inflammatory bowel disease.

We report a case of adenocarcinoma identified in a fistulectomy specimen in a male patient who presented with a short history of classical fistula-in-ano. Laparoscopic assisted abdomino-perineal resection was carried out. The tumour was confined to the perineum. No adjuvant therapy was offered. He has no recurrent disease after 24 months. A brief review of the literature is offered. Even in a part of the world where inflammatory bowel disease is rare, all fistulectomy specimen should be submitted for histological examination.

COMBINATION MANEUVERS TO PPH (CPPH) FOR MANAGEMENT OF GIANT THROMBOSED HEMORRHOIDS AND HUGE PROLAPSED HEMORRHOIDS

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Background: PPH (Procedure for Prolapse and Hemorrhoid) or stapled hemorrhoidectomy was widely used for better results and pain minimization in hemorrhoid patients. This technique proved very effective in third degree or small prolapsed hemorrhoid. However, in very large and multiple prolapsed or giant thrombosed hemorrhoid this technique alone cannot be applied.

Objective: Complicated hemorrhoid patients in this report included 1) large (more than 1/3 circumference) and multiple (more than one head) prolapsed hemorrhoids 2) giant soft thrombosed (more than 1/2 circumference) and multiple prolapsed hemorrhoids and 3) giant hard thrombosed hemorrhoids

Materials and Methods: Because of very large and

tense mass, all these complicated hemorrhoid heads could not be pushed into anal canal. According to different status of above described hemorrhoids, the following different combination maneuvers were performed before standard PPH.

Group 1: double purse string sutures
Group 2: multiple vertical incision and blood clot evacuation
Group 3: wedge excision, blood clot evacuation and closing wound

Results: There were 20 complicated hemorrhoids in 75 PPH patients during November 2005 and March 2007 at Chao Phya Hospital. The technique of double purse string sutures with prolene 2/0 was used in group 1 and was also frequently added in group 2 and 3. The problems of incomplete cut in large prolapsed heads were solved by this technique. Because of extra wounds in group 2 & 3, there were significantly more pain and swelling in the first week than by standard PPH but no significant difference at the second and fourth weeks.

Conclusions: These combination maneuvers to PPH, named "CPPH" should be considered when very complicated hemorrhoid patients require surgery by PPH.

TEM EARLY EXPERIENCE

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TEM is a minimally invasive per rectal procedure for resection of rectal and lower colonic lesions that would otherwise necessitate a trans-abdominal procedure. This procedure has been established as early as the mid 80s. As far as we know, this is the first report of this procedure in Singapore.

We report a small series of 4 patients who underwent TEM at Alexandra Hospital in the last 8 months. Initial experience showed that although technically demanding, outcomes have been satisfactory. For a well defined subset of patients with ano-rectal tumour, TEM is a preferred option. TEM should be offered for this subset of patients.

PROSPECTIVE STUDY OF FACTORS AFFECTING RESULTS OF PPH SURGERY AT CHAOPHYA HOSPITAL

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Background: PPH (Procedure for Prolapse and Hemorrhoid) or stapled hemorrhoidectomy is the procedure of choice for hemorrhoid patients who expect the excellent outcome of this new technique.

Objective: To evaluate all possible factors that affect short term results of PPH surgery.

Materials and Methods: Prospective study of all factors that may involve the results of PPH surgery such as age, weight, associated diseases and bleeding disorder medication, previous hemorrhoid or other anorectal surgery, status of presenting hemorrhoid, anorectal and buttock contour, stapled level and alignment, suturing bleeding points, etc. was carried out in non-selected surgical hemorrhoid patients. The study started from November 2005 to March 2007 (1 year and 5 months). There were 75 patients in this study with age range from 25 to 82 years (average 49.5 years) and weight range from 39.6 to 82.0 kilograms (average 59.2 kilograms). All were operated in lithotomy position by one surgeon. The short term evaluation means the follow-up interval from 1 to 6 weeks depending on the patient satisfaction. Results with which all patients were concerned included pain, bleeding, defecation and complications (to sphincter or anal canal).

Results: Factors that significantly affected results of PPH included stapled level and alignment, anorectal and buttock contour. Some factors might cause difficulties in performing standard PPH such as previous hemorrhoid surgery, previous fistulectomy that need prior digital dilatation, large thrombosed multiple hemorrhoid that need combination maneuvers to PPH, but significantly affected the results only in the first week.

Conclusion: PPH could be safely done and achieve good results. The most affected factor was stapled level that should be in a safety range especially in protruded buttock or adducted pelvis.

ANATOMY OF ANAL SPHINCTER: NEW LOOK FROM INSIDE-OUT

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Background: The anatomy of anal sphincter muscle is mandatory for good clinical practice in anorectal surgery. New imaging technologies view undisturbed and correct anatomy from inside-out with different details from descriptions by authorities.

Objective: This study was designed to demonstrate anal anatomy from inside-out.

Materials and Methods: Anorectal sphincter muscles were studied in fifteen cadavers. The dissections were carried layer by layer from mucosa to deeper anal sphincter

muscles.

Results: The outer skeletal muscle (external sphincter complex) is composed of: (1) the subcutaneous external sphincter which is the lowest portion, attaches to bulbocarvernosus anteriorly and tip of coccyx posteriorly (2) external sphincter proper (superficial external sphincter) in the middle portion, inserting into the perineal body anteriorly and attaches to the coccyx posteriorly (anococcygeal ligament) (3) the puborectalis that appears to be vertically uppermost part of external sphincter complex. It arises from pubis, runs backward and joins the other side forming a U-shaped loop, and always gives muscle band to attach to the tip of coccyx.

Conclusions: The study of the anal sphincter anatomy with the inside-out method showed different findings from descriptions in the literatures. Our findings seem to be compatible with images from MRI and endorectal ultrasonography. We suggest that the anatomy of anal sphincter should be reconsidered by colorectal authorities.

THE INCIDENCE AND PROGNOSTIC FACTORS OF COLORECTAL GASTROINTESTINAL STROMAL TUMORS AT KING CHULALONGKORN MEMORIAL HOSPITAL

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Background: After Hirota et al. discovered CD 117 in 1998, the diagnosis in the majority of cases with gastrointestinal mesenchymal tumor was changed to Gastrointestinal Stromal Tumors (GISTs). This alteration led to the revolution of diagnosis and treatment of GISTs. This report studied the effect of this great change in the aspect of true incidence and prognostic factors of colorectal GISTs at King Chulalongkorn Memorial Hospital (KCMH)

Materials and Methods: The authors reviewed the database of colorectal mesenchymal tumor at KCMH between 2002 and 2006. During this period, patient data were collected and the immunohistochemistry was studied, including CD 117. The clinical, pathological and immunohistochemical characteristics were analyzed related to cumulative disease-free survival and survival and multivariate analysis.

Results: After the CD 117 staining was done, the incidence of colorectal GISTs increased from 9/16 (56%) to 13/16 (81%) (previous diagnosis being leiomyosarcoma). These 13 cases included 10 rectal GISTs, 2 rectovaginal septum GISTs and 1 colonic GIST (cecum). The remaining colorectal mesenchymal tumors included one rectal leiomyoma and two leiomyosarcoma. Mean age in patients with colorectal GISTs was 55 years (41-75 years). The most common symptom was LGIB (7/13 or 53%). Negative margins were obtained in all. The most common operative procedure was LAR (5/13 or 38%). Five cases received Glivec; 4 as adjuvant therapy for recurrence and metastasis and 1 as neoadjuvant therapy. One case at rectovaginal septum responded to neoadjuvant Glivec and sphincter preserving surgery was successfully performed. Factors significantly associated with high tumor recurrence and poor survival included tumor size ≥10 cm ($p < 0.0001$), mitotic count >10/50 HPF ($p = 0.0002$), Ki67 index >10% ($p < 0.001$), p53 >50% ($p = 0.002$).

Conclusions: The breakthrough discovery of CD 117 in GISTs has had great effect on the diagnosis of GISTs at KCMH. The previous diagnosis of the majority of other mesenchymal tumors of gastrointestinal tract is changed to GISTs. This finding also alters the way of treatment and follow-up in our patients.

LAPAROSCOPIC TOTAL MESORECTAL EXCISION IN RECTAL CANCERS - RESULTS OF 101 CASES

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Aims: To evaluate the role of laparoscopic total mesorectal excision (TME) in rectal cancer surgery at ChoRay Hospital, Vietnam.

Materials and Methods: Prospective nonrandomized study. From November 2003 to April 2006, we have performed 101 cases of laparoscopic TME with autonomic pelvic nerves preservation for rectal cancers. Among them included 39 cases (38.6%) of low anterior resection (LAR) and stapled anastomosis, 61 cases (60.4%) of abdominoperineal resection (APR) and 1 case (1%) of Hartmann procedure. Protective colostomy or ileostomy was done in 14 cases. Patients aged from 16 to 80 (average 58), 48 males (47.5%) and 53 females (52.5%). Tumors located 0-5 cm from anal verge in 54 cases, 6-10cm in 34 cases and 11-18cm in 13 cases. There were 14 patients at T4, 59 patients at T3, 25 patients at T2 and 3 patients at T1. Cancer staging: stage I: 14 cases, stage II: 46 cases, stage III: 40 cases, stage IV: 1 case.

Results: The average operation time in LAR is 243 minutes, in APR is 217 minutes. The operative blood loss was minimal, averaged 83 ml (0-200 ml). Extended laparoscopic resection included parts of other organs: vaginal wall 4 cases, total hysterectomy 1 case, liver resection 1 case.

In laparoscopic APR, curative resection performed in 48 cases, palliative resection performed in 13 cases (tumor at T4). Most of patients felt less pain postoperatively. Most of patients could urinate normally at day 2 postoperatively after removal of urinary catheter. The overall morbidity was 30.6%, in which 1 case of anastomotic leakage (1%), bladder dysfunction in 16 cases (15.8%). Six cases required reoperation (5.9%) in which 2 cases of perineal wound bleeding, 2 cases of early intestinal obstruction, 1 case of anastomotic leakage and 1 case of right ureter fistula. Average hospital stay was 8 days. There was no intra- and postoperative mortality. In average 13-month follow-up (0-29 months), 8 cases (13.1%) developed local recurrence after APR. 18 cases (17.8%) had distant metastasis including: liver (5 cases), lung (10 cases), perineum (2 cases) and bone (1 case). Survival rate at 13 months was 92%. There was no trocar site recurrence. Sexual function was evaluated in 16 male patients <60 years old, in which 15 cases remained good erection function, 1 had complete impotence and 3 had ejaculation disorders.

Conclusions: Laparoscopic TME is a safe and effective technique in rectal cancer surgery. It helps to improve remarkably the postoperative morbidity, especially the urinary and sexual complications. Laparoscopy allows the surgeon a better view of anatomic structures of the mesorectum and pelvic nerves enabling him to perform the dissection more easily and precisely. More time, however, is needed to evaluate the oncological results.

DEEP POSTANAL SPACE: NEW CONCEPT

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Background: It is generally accepted that the deep postanal space is the continuation between both ischioanal spaces posteriorly. The space lies above the anococcygel ligament and below the puborectalis muscle. This postanal space was proposed to be the pathway by which purulent infection spreads from one ischioanal space to the other, which results in the so-called horseshoe abscess. In clinical practice, the occurrence of semihorseshoe fistula is more common than the complete horseshoe one. This questions the postanal space as the continuation of bilateral ischioanal space.

Objective: To clarify whether postanal space is an actual connection between bilateral ischioanal spaces via deep postanal space.

Materials and Methods: Fifteen cadaveric dissections were performed in two fashions. Firstly, the bilateral ischioanal spaces were entered and dissected toward the posterior midline to identify their boundaries and connection to other spaces. Secondly, the dissection was from the lumen of anal canal outward. The puborectalis muscle was lifted up to reach the deep postanal space.

Results: The dissections showed the existence of deep postanal space. But there was no connection between ischioanal spaces via deep postanal space.

Conclusion: The deep postanal space is not the connection between ischiorectal spaces.

LAPAROSCOPIC ABDOMINOPERINEAL RESECTION FOR LOWER RECTAL CANCERS - RESULTS OF 61 CASES

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Aims: To evaluate the possibility and results of laparoscopic abdominoperineal resection (LAPR) for lower rectal cancers performed at ChoRay Hospital, Vietnam.

Materials and Methods: Prospective study. From November 2003 to April 2006, we have performed 61 cases of LAPR for lower rectal cancers with the technique of total mesorectal excision (TME) and autonomic nerve preservation (ANP).

Results: Patient's mean age was 56 years (range 16-77), in which 34 were males (56%) and 27 females (44%). Tumors located at 0-5 cm from anal verge in 54 cases, 6-8 cm in 7 cases. TNM staging: stage I in 9 cases, stage II 25 cases, stage III 27 cases. Mean operation time was 217 minutes (range 105-300 minutes). Blood loss was minimal (mean 64 ml). Nine cases (14.7%) required blood transfusion. Tumors invaded pelvic wall in 4 cases, sacrum 1 case, prostate 6 cases, posterior vaginal wall 5 cases (4 cases required vaginal wall resection) and uterus 1 case (total hysterectomy was done). Mean number of lymph nodes dissected was 8 (range 0-20). Curative resection was performed in 48 cases and palliative resection in 13 cases (tumor at T4). Most of patients felt minimal pain postoperatively and could urinate normally after removal of urinary catheter at day 2 post-op. Mean residual urine volume (RUV) after removal of urinary catheter was 63 ml (range 0-203 ml). There was no operative mortality. Overall morbidity was 27.8% (17 cases): bladder fistula 1 case (tumor at T4), ureteric fistula 1 case, reinsertion of urinary catheter 14 cases, perineal wound bleeding 2 cases (no bleeding of presacral venous plexus) and perineal wound infection 4 cases. There was no wound infection at trocar

sites. Reoperation was done in 4 cases (2 cases due to perineal wound bleeding, 1 case from early intestinal obstruction and 1 case from ureteric fistula). Mean hospital stay was 7.5 days. Sexual function was evaluated in 12 patients (males <60 years old): 11 cases (91%) remained good erection, 3 cases had ejaculation disorders and 1 case had complete impotence.

Mean follow-up time was 13 months (1-29 months): 8 cases with pelvic recurrence (tumors at T4) and 1 case had local recurrence at the permanent stoma (which was reoperated). There was no trocar site recurrence. Fifteen cases (15%) with distal metastasis included: liver 4 cases, lung 8 cases, perineum 2 cases and bone 1 case. Up to now, 7 patients died from distant metastasis (survival rate was 88%).

Conclusions: The LAPR for lower rectal and anal cancers with the technique of TME and ANP is a feasible and safe procedure by experienced laparoscopic colorectal surgeon. The overall morbidity, especially the urinary and sexual dysfunction, had improved significantly compared with open surgery. More time is needed to evaluate the oncological results of this method.

TRANSPLANT SURGERY

MELD SCORE IN LIVER TRANSPLANTATION CANDIDATES

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Background: The model for end-stage liver disease (MELD) score was used to prioritize liver allocation in the USA to decrease the mortality in awaiting patients. The current national policy for liver allocation in Thailand is to offer organs to transplant center, not directly to the patients themselves. The aim of this study was to determine the accuracy of MELD score to predict the mortality of patients on liver transplantation waiting list.

Patients and Methods: From January 2006 to March 2007, we prospectively collect data of all patients on liver transplantation waiting list. MELD score was calculated. All patients were followed until they were transplanted, dead or to the end of the study. Patients were then divided into 3 groups (dead, alive and transplanted) according to the outcome. Differences between groups were compared using Chi-square test.

Results: Seventy three patients were enrolled (Male: Female = 48: 25). Mean age was 53.4 years. At the end of the study, 44 patients were alive (60.3%, MELD 8-31), 21 were dead (28.8 %, MELD 15-40) and 8 were transplanted (11%, MELD 12-30). The dead group was compared with live group to determine mortality. Patients who died had higher MELD score than patients who were alive. Patients with MELD score more than 15 had significantly (P value = 0.001) higher mortality than patients with MELD score of less than 15.

Conclusions: MELD score is very useful in stratifying severity and mortality risk of cirrhotic patients while on liver transplant waiting list. A MELD score of 15 is associated with significantly increased mortality in awaiting patients.

HERNIA

LAPAROSCOPIC TOTALLY EXTRAPERITONEAL INGUINAL HERNIA REPAIR

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Background: The optimal technique for inguinal hernia repair remains contentious. This report reviews our experience with 86 totally extraperitoneal (TEP) hernia repairs in 72 patients (14 bilateral) over the 4-year period from November 2003 to April 2007.

Methods: A retrospective study was conducted, and clinical data was obtained for all patients with inguinal hernia managed with laparoscopic totally extraperitoneal (TEP) hernia repairs in the period from 2003 through 2007, inclusively. Outcome measures were operative time, complications and recurrence rates.

Results: Seventy two patients were enrolled in this study. The median age was 63.5 years (20-85 years). There

was no conversion. Groin seroma or hematoma occurred in 6 cases. One patient had wound infection. Recurrence rate was 2.8%.

Conclusions: Laparoscopic totally extraperitoneal (TEP) hernia repair provides an effective and safe minimally invasive approach to inguinal hernia management.

COMPARATIVE STUDY OF TAILOR-MADE MESH PLUG HERNIORRHAPHY VERSUS LICHTENSTEIN HERNIORRHAPHY VERSUS BASSINI OPERATION: A PROSPECTIVE CLINICAL TRIAL

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Objective: Operations to cure inguinal hernia are among the most common surgical procedures. However, the most effective surgical technique for inguinal hernia repair is unknown, and the recurrence at 5 years varies between 1% and 10%. Surgical techniques and implanted materials are crucial to the results of and costs associated with hernia repair. The objective of this study was to determine whether the tailor-made mesh plug for inguinal hernia repair was as effective and safe as other methods of herniorrhaphy.

Materials and Methods: Of 94 patients who had a primary diagnosis of inguinal hernia prospectively included in the study, 25 were treated with tailor-made mesh plug herniorrhaphy, 26 with Lichtenstein herniorrhaphy and 36 with the Bassini operation. The primary outcome was the recurrence of hernia at 1 year, and secondary outcomes included surgical complications and hospital stay.

Results: There was no postoperative mortality in this study. Three patients had recurrence after Bassini operation, but there was no recurrent hernia after Lichtenstein or mesh plug herniorrhaphy. Groin swelling and ecchymosis were found in two patients (1 tailor-made mesh plug, 1 Lichtenstein herniorrhaphy). No surgical site infection occurred. Mean operating time was 60 minutes (range 45-75 minutes) for tailor-made mesh plug herniorrhaphy, 82 minutes (range 30-120 minutes) for Lichtenstein herniorrhaphy, and 82 minutes (range 30-135 minutes) for the Bassini operation.

Conclusions: Tailor-made mesh plug herniorrhaphy is a safe operation. The mesh plug material (Mersilene) was cheap. The recurrence rate was lower with tailor-made mesh plug herniorrhaphy than with the Bassini operation, but equal to that with Lichtenstein herniorrhaphy. Postoperative complications did not differ among all operations.

LAPAROSCOPIC REPAIR OF LARGE TYPE 3 DIAPHRAGMATIC HERNIA WITH PROSTHETIC MESH

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A 78-year-old female presented with upper abdominal discomfort after meal for a year. UGI study and esophagogastroduodenoscopy revealed a large combined sliding and paraesophageal hernia. Laparoscopic approach was performed. Hernia reduction was done. Due to a large defect, direct hiatal closure is unable to be performed. Prosthetic mesh (Dual mesh) was then used to close the hiatal defect. Patient was doing well 1 year after surgery.

TRAUMA

THE ROLE OF TEMPORARY IVC FILTERS IN TRAUMA PATIENTS

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Background: Trauma patients are at high risk of venous thromboembolism and at times the severely injured are not candidates for prophylaxis or treatment with anticoagulation. Retrievable IVC filters potentially offer a solution to this problem but only if they are removed.

Objective: To evaluate an institutional experience with the placement and retrieval of temporary IVC filters.

Methods: A retrospective review of all IVC filter placements and retrievals in trauma patients at a Level I Trauma Centre. Data were collected from Trauma database, medical records and radiology database for the period January 2003-April 2007.

Results: Since 2003 14 filters have been placed. All filters were placed for prophylaxis. The mean age was 35 years, the mean ISS was 38, 70% were men and all had blunt

trauma. There were no complications of insertion or of removal. The majority (13) were removed. No instances of venous thromboembolism were recorded.

Conclusions: Temporary IVC filters are a safe and effective means of preventing venous thromboembolism in the severely injured patient. Standard criteria for the placement of temporary IVC filters need to be developed. A high rate of removal can be achieved.

PRELIMINARY RESULT OF INJURY SURVEILLANCE AT VIET DUC HOSPITAL

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Purpose: Injury surveillance - keys to injury prevention, systematic collection, analysis, interpretation and dissemination of data on injury-related events for use in public health action to morbidity and mortality and to improve health. The first surveillance of injury was successfully implemented in some pilot hospitals. Viet Duc Hospital, one of the leading centers of surgery and trauma in Vietnam has implemented the injury surveillance.

Materials and Methods: Data were collected from all cases of injuries treated and admitted to Viet Duc Hospital, including death data. The surveillance was conducted during one period between 26 March 2006 and 26 October 2006.

Results: Data collected over 7 months in 2006, of Viet Duc Hospital activities is showing 17,643 cases of injury treated in emergency at Viet Duc, representing 70% of all emergencies. 989 patients died or were dying due to injury within 7 days, representing 5.6%. Surveillance was conducted in 5,468 cases, men outnumbered women by a ratio of 3: 1, highest proportion of patients were between 20 to 50 years of age. 73% of patients were referred from provinces. The highest category of morbidity was students and farmers who accounted from 22% up to over 25%. The largest number of injuries was to the head and face at 40%, second was to the extremities at 38%. The critical injury was only 2.6%, serious in 3% according to AIS scaling. 30% received first aid at provincial hospitals, 23% at the district hospitals. 38% of victims were transported by ambulances, 32% were accompanied by health workers. The traffic-related accident was most common at 63%, motorbike accident at 74%. The driver victims were 70%. Only 5% of drivers used the helmet.

Conclusions and Recommendations: In order to prevent injury as well as reduce mortality rate, the data of injury should be collected adequately and completely. Despite some challenges of implementing the first surveillance of injury in hospital, the result is successful and informative in determining the epidemiology of injury, providing the accurate morbidity and mortality. The value of hospital trauma registries as a major research tool is recognized increasingly because of their role in improving the care of the trauma patients and bringing about better resource utilization.

WOUND HEALING

THE PROLIFERATIVE EFFECT OF DIFFERENT PREPARATIONS OF LYSED HUMAN PLATELETS ON PRIMARY CULTURED ALLOGENEIC HUMAN FIBROBLASTS

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Background: Although a wide variety of treatments for chronic ulcer exist, accelerated healing of chronic ulcer remains a challenging target for novel treatments. Easily accessible biomaterial containing growth factors (e.g., platelets) may fit this strategy. Since platelets have a limited pharmaceutical shelf life (5 d) for replacement therapy, these "expired" platelets may perfectly serve as a healing accelerator for chronic ulcer. However, the expired platelets might have growth factors that can promote wound healing in particular conditions.

Objective: To estimate the feasibility of using either fresh or irradiated freeze-dried human platelets as a wound-healing accelerator, using primary culture fibroblasts as a testing model.

Materials and Methods: Human platelet-rich plasma (PRP) was prepared from one unit of whole blood collected from each of seven volunteers. PRP was centrifuged at 3,000 μg for 30 min to separate plasma from platelets. The isolated platelets were extensively washed with phosphate-buffered saline followed by vigorous shaking to lyse the pellet. An aliquot of lysed platelets was stored at 8 °C for 5 days while another aliquot was freeze-dried for 11 hours, followed by radiation at 25 kGy using a Cobalt light source. Both of platelet preparations and the plasma were added to the primary cultured human fibroblasts attaching on the 96-well plate and incubated for another 72 hours. The growth of the fibroblasts was assessed using MTT assay.

Results: The lysed platelets prepared in 8 °C for 3 days contained greater proliferative activity than that of the freeze-dried platelets. The maximal activity could be observed at 100 μg protein/mL. On the other hand, the freeze-dried platelets contained smaller proliferative effect on human fibroblasts. The relatively small maximum effect was observed at 30 μg protein/mL. Adding higher concentration of freeze-dried platelets resulted in reducing fibroblast proliferation. Plasma alone at 5-15% (v/v) had anti-proliferative activity while at 50% had predominant proliferative activity.

Conclusions: The irradiated freeze-dried platelets contained less proliferative activity than the platelets stored at 8 °C for 5 days. Adding higher concentration of freeze-dried platelets resulted in reducing fibroblast proliferation.