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Abstracts
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GENERAL SURGERY

Achalasia in Songklanagarind Hospital; Study in Demographic and Treatment Data

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Introduction: There are few reports of achalasia in Thailand. To describe more accurately the demographic profile of our achalasia patients, we reviewed our patients' records including age, sex, presenting symptoms, type of investigation, choices of treatment, results and complications.

Objective: To document demographic and treatment data of patients diagnosed with achalasia in Songklanagarind Hospital.

Materials and Methods: We retrospectively collected data including age, sex, presenting symptoms, type of investigations, choices of treatment, results and complications of achalasia patients from in-patient and out-patient records at Songklanagarind Hospital from October 1983 to February 2003.

Results: During the study period, 60 patients (36 males and 26 females) were diagnosed with achalasia. The mean age was 50 years and more than 90% presented with dysphagia. Barium swallow was performed in 96% of cases followed by gastroesophagoscopy and esophageal manometry (93% and 38% respectively). Thirty-six patients underwent esophagocardiomyotomy, 6 patients received pneumatic balloon dilatation, 3 patients were treated with medication, 1 patient with Botulinum toxin injection and 1 patient with esophagectomy. Thirteen patients refused treatment. Over 80% of all treated patients achieved satisfactory results, comprising of 35/36 in the esophagocardiomyotomy group, 2/6 in the pneumatic balloon dilatation group and 1/3 in the medically treated group. One patient who received Botulinum toxin injection did not achieve satisfactory result. Complications occurred in 13/47 treated patients with 1 death from post-esophagectomy septic complication.

Conclusions: These results, representing demographic and treatment profile of our achalasia patients in Songklanagarind Hospital, are similar to previous studies in Thailand. Pneumatic balloon dilatation was performed in a small number of our patients and most of them did not achieve satisfactory result.

Evaluation of Alvarado Score in Patients with Suspected Acute Appendicitis for the Diagnosis of Acute Appendicitis

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Background: Acute appendicitis can be found frequently in both men and women of all ages. Diagnosis is still a significant problem which always affects treatment and complications. Delayed diagnosis may result in high morbidity and mortality while over diagnosis leads to unnecessary operation. To narrow and rid of such problems, attention is paid to "Alvarado score". It is a diagnostic test by scoring 8 different parameters which are "Migration of pain to RLQ", "Anorexia", "Nausea-vomiting", "RLQ tenderness", "Rebound pain", "Fever", "WBC count >10,000" and "Left shift of WBC (>75%)". According to the test,

Alvarado score might be useful to help diagnosing acute appendicitis more correctly and accurately.

Objective: To evaluate sensitivity and specificity of Alvarado score in the diagnosis of acute appendicitis in Thai population.

Methods: Forward studies of 69 patients older than 15 years admitted to the hospital with symptoms of abdominal pain and suspected acute appendicitis were carried out. Patients' data and computed Alvarado score were recorded. Alvarado scores equal or more than 7 were regarded as positive in comparison to the results of operative finding and histopathology.

Results: Fifty-four of 69 patients were finally diagnosed with acute appendicitis while the other 15 were diagnosed with other diseases. In fifty-four patients with acute appendicitis, Alvarado scores of 7 or more were present in 46 patients and 8 patients presented with Alvarado score less than 7. In comparison, a group of patients with other diagnosis, the Alvarado score of 7 or more were present in 2 patients and less than 7 in 13 patients. The results reveal that Alvarado score of 7 or more has sensitivity of 85% and specificity of 87%.

Conclusions: We may conclude from this study that Alvarado score of 7 or more has high sensitivity and specificity, and also can assist in the diagnosis of acute appendicitis. The measuring of Alvarado score is easy, cheap and practical. We are of the view that any patient with symptoms suspected of acute appendicitis whose Alvarado score is 7 or more should be admitted in the hospital.

Gastrointestinal Complications from Ingested Santol Seeds

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Objective: To survey types and frequency of gastrointestinal complications resulting from ingested Santol seeds and to study knowledge and behavior in Santol consumption.

Study Design: Descriptive study

Subjects: All 1,601 qualified general surgeons of the Thai Medical Council and a simple random sampling of 2,880 adults from the Department of Provincial Administration, Ministry of Interior were enrolled in this study.

Methods: Two different kinds of self administered questionnaires were separately mailed to each group sample populations.

Results: The response rates of general surgeons and sample populations were 37.2% and 34.2%. Firstly, 29.9% of general surgeons had experiences with gastrointestinal complications from ingested santol seeds. During 2000-2002, there were 123 cases with these complications through out the country. Their ages ranged from 20-84 years with mean age of 60.7 year. Perforation of the distal part of large intestine was the most common complication. Secondly, regarding knowledge and behavior study, 94.6% of the sample populations ate santol. 54.6% of the populations didn't know about these complications. In the populations who ate santol, 41.2% ingested its seeds with equal proportion between intentional and unintentional.

Conclusions: Ingested santol seeds can cause many kinds of gastrointestinal complications. The most common and severe complication was rectum and sigmoid colon perforation. Santol seeds are probably the most common foreign body that causes gastrointestinal complication especially rectum and sigmoid colon perforations in Thailand. Nowadays, many people do not know about these severe complications and still ingest its seeds. Public awareness to prevent these unexpected conditions should be encouraged.

The Characteristics of Traumatic Patients in Maharaj Nakorn Chiang Mai Hospital

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Background and Objectives: Injuries by accidents or by any causes may lead to tragic situations later on. This study describes characteristics, quantity and outcome of injuries which will become the basis for further study.

Research Design: Retrospective study

Patients and Methods: The retrospective study was carried out by collecting data from medical record of patients in the trauma unit at Maharaj Nakorn Chiang Mai Hospital between July 1, 2002 to June 30, 2003.

Results: One thousand and seventy six patients were identified, 78.2% were males and 21.8% females with average age of 19 years old (range 1-82). 61.2% of these patients had head injury, 20.8% multiple injury, 5.6% abdominal blunt trauma, 3.9% blunt chest trauma, and 3.7% penetrating injury. 86.4% of patients came from rural area (outside Muang district, Chiang Mai) and only 13.6% from urban area. The average Glasgow Coma Score (GCS) was 13.98 (range 4-15).

Conclusions: From our database, most traumatic patients are teenager and motorcycle accident is the most common cause. The new government policy "Open light

and put helmet" might improve the situation.

Anatomical Variations of Extrahepatic Hepatic Artery in Thai People

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Anatomical variations of hepatic artery are important for hepatobiliary surgeons, especially in the progress of new surgical technique eg. living donor liver transplantation. The objective of this study was to evaluate anatomical variations of extrahepatic hepatic artery. The descriptive study was performed by dissecting 106 cadavers at the Department of Forensic Medicine, Chulalongkorn University from April 2003 to March 2004. This study revealed that normal pattern of hepatic artery deriving from hepatic artery proper was found in 76.42% (81 in 106 cases). Variation of RHA which derived from SMA was found in 11.32%. We also found that variation of LHA which derived from LGA was found in 10.38%. In rare condition we found that CHA which derived from SMA was found in 1.88%. In conclusion, surgeons who must operate on hepatobiliary tree may have benefit from this study.

Clinical Experience of Acticoat in the Treatment of Extensive Burn Wound Patients

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Introduction: Many topical antimicrobial agents were introduced for the treatment of burn wounds. Silver and silver compounds have been recognized since 19th century such as 1% silver sulfadiazine cream which has been used as an effective antimicrobial burn agent for years. However, bacterial resistance and burn wound infection still remain unsolved especially in the extensively burned patient. Unlike silver containing compounds currently available, "Acticoat" or nanocrystalline silver coated antimicrobial barrier feature has demonstrated a broad spectrum of protection against over 150 pathogens. It is activated with sterile water and has both antimicrobial and anti-inflammatory action. Acticoat's action may last for 3 to 7 days.

Patients: During 20-month period between September 2002 to April 2004, 31 extensive burn patients with average burn extent of 35.2%BSA were selectively treated with Acticoat dressing. Some patients were started in the early phase of burn injury and some were begun in the late part of burn wound treatment due to late referral. Burn wound was cleaned by sterile water only before the application of Acticoat and was changed every 3 days. The applied Acticoat was moistened with sterile water every 6 hours. Wound inspection and swab culture were obtained routinely. Eschar or pseudo eschar was removed at bed side when they become loose.

Treatment: One part of patients with Acticoat dressing completed the treatment until wounds had healed but some patients needed some other forms of wound dressing for a short period depending on the characters of burn wound appearance and results of bacterial growth.

Results: All patients received immune-enhancing diet, majority of them were started on early enteral feeding and mostly by continuous drip through nasogastric tube feeding. Eight patients underwent early tangential excision at bed side and 10 patients required skin grafting. Only one patient (95%BSA) with incidental respiratory distress syndrome expired on the 32nd PBD. The 3 most frequent microorganisms detected from the burn wound surface were MRSA, Psudomanas aeroginosa and Enterococcus group. However, most of them showed only a few colonies of microorganisms.

Conclusions: Extensive burn wounds that were not so deep enabled to heal completely by Acticoat dressing only. Thin pseudo eschar or slough started to separate 10 days after the beginning of Acticoat dressing. Bed side debridement by blunt or sharp instrument will promote earlier wound healing. Both patients and care-givers were satisfied with Acticoat. It saved manpower, improved patient's quality of life and is cost-saving in comparison with 1% silver sulfadiazine cream dressing. Hypertrophic scar formation may be less severe after the use of Acticoat.

The Prospective Survey of Enteral Feeding in Critically Ill Patients

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Objective: The primary outcome was to describe current enteral nutritional prescription practices for critically ill patients. The secondary outcome was to identify factors associated with initiation of successful or tolerance to enteral nutrition and relation of feeding character to mortality.

Design: A prospective cohort study

Setting: Two medical and three surgical intensive care units in Siriraj hospital

Patients: We enrolled 98 ventilator support patients who were expected to stay in the ICU for more than 3 days, had retained nasogastric tube and used ventilator support. We followed patients for at least 7 days or 11 days if feeding were intolerance or until they tolerated enteral nutrition, were discharged from the ICU, were changed to the other route, or died.

Measurements and Main Results: We recorded time from ICU admission to initiation and tolerance of enteral feeding, and examined factors associated with these events. We defined tolerance or success as receiving 80% of estimated daily energy requirements for more than 48 hrs without gastrointestinal dysfunction (ie, high gastric residuals, vomiting, diarrhea, abdominal distention), and early feeding as initiating of enteral feeding within 72 hrs after admission to ICU. Ninety-two of 98 patients (94%) were started on enteral feeding with a median time on the first day of admission but surgical patients were started significantly slowler than medical patients (median time at 4.5 days vs 1 day, p <0.001). Of these, 6 patients were never started on enteral nutrition until discharged. The reasons for late enteral feeding included post abdominal operation (43.7%), post operative neurosurgery (25%), absent bowel sound (25%), hemodynamically unstable (25%), high gastric content (18.7%), abdominal distention (12.4%), pre-operative preparation (6.2%), observing neurological signs (6.2%), uncertain diagnosis (3.1%), esophageal perforation (3.1%), status epilepticus (3.1%), delir-ium (3.1%) and no apparent reason (3.1%). We found that the average energy that patients received each day during the first four days was different significantly (p <0.001, <0.001, 0.006 and 0.031 from the first to fourth day accordingly). Forty nine of 98 (50%) patients achieved tolerance of the regimen. Once started on enteral nutrition, we divided the reason for decreasing or discontinuing feeding into three categories; gastrointestinal dysfunction, more than 3 days of feeding and end of follow up. We found that the most common reason was gastrointestinal dysfunction (67.3%) which included high gastric residuals (40.8%), abdominal distention (24.5%), absent bowel sound (12.2%), diarrhea (10.2%), vomiting (10.2%), and gastrointestinal bleeding (6.1%). The median time of success in patients which were fed for more than 3 days was 6 days (average 6.9 ± 2.7 days) and it was different between medical and surgical ICU patients (p = 0.03). The reasons to stop the follow-up in non-successful feeding were intolerance of feeding (26.5%), follow-up for more than 10 days (28.6%), being discharged from ICU (20.4%) and change of enteral route (6.1%). Serum calcium, initial setting of FiO_2, bowel movement sign, high gastric residual, use of vasoactive and narcotic drug and tachycardia were associated with success of feeding. Of all patients, 57 (58.2%) were discharged from the hospital and the others died. We found that in all patients the survival at discharge was correlated with success or tolerance of feeding (p = 0.024) but was not correlated with early or late enteral feeding (p = 0.297). However, in subgroup analysis of medical patients, there were statistically significant difference between discharge status (survival or dead) and character of feeding (successful or non successful and early or late).

Conclusions: Enteral nutrition is not started early in all eligible ICU patients especially in surgical patients. Approximately half of all patients receiving enteral nutrition achieved tolerance or successful of the regimen, post abdominal operation is a common reason for late start of feeding and gastrointestinal dysfunction causing intolerance to enteral nutrition is a common reason for discontinuing the feeding.

Early Experience Regarding Donor Hepatectomy and Safety after Pediatric Live-donor Liver Transplantation at Ramathibodi Hospital

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Background: Liver transplantation is a standard treatment for a certain case of acute liver failure and end stage liver disease. Shortage of the deceased donors has been a worldwide problem, as well as in Thailand, especially for pediatric recipients. Live donor liver transplantation becomes an alternative for rescue the recipient's life. Early and long term safety of the live donors are the first concern for this option.

Objective: To review live-donor's morbidity and mortality after donating their liver for their children.

Materials and Methods: The program of live donor liver transplantation for pediatric recipients was started since March 2001. Three phases of preoperative evaluation for related donors were routine measure for donor's assessment. CT angiography was primarily used to demonstrate the hepatic vasculature and its volume. Hepatic angiography was added in selected cases. Donor's segment II and segment III were sacrificed to pediatric recipients while the segment IV was left in situ. Intraoperative cholangiography was performed routinely before left hepatic duct was divided. Solutions used to preserve liver grafts were UW solution and HTK solution in 6 and 2cases

respectively. A segment of donor's greater saphenous vein was also harvested for hepatic artery conduit. All live donors were followed up at 1, 3, 6, 12, 18 and 24 months.

Results: There were 8 live donors (4 fathers and 4 mothers) with mean age of 32.4 ± 3.8 yrs. The intraoperative blood-loss was 787.5 ± 387.1 ml. Donor's hospital stay was 17.6 ± 6.0 days. Immediate postoperative serum alanine transferase was 165.0 ± 88.6 U/L. The liver function test became normal in 4 cases at 6 month. Two cases developed minor bile leakage and one required percutaneous drainage. No major morbidity or mortality occurred.

Conclusions: There is a risk for live donors in donating their left lateral segment of the liver. But it is minor while the recipient's can be rescued in a situation of organ shortage.

Living Related Donor Liver Transplantation in Children, 4-Year Experience in Ramathibodi Hospital

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Background: Many children with end-stage liver diseases undergo their liver transplantation either through a splitted or reduce-sized adult cadaveric liver transplant, or through a living-related donor transplant. In Thailand however, not only that there is a shortage of the adult cadaveric donors, but very often when it does become available, many of these organs are quite marginal which make it less suitable for transplant. Consequently, having to rely more on a living-related donor for organ transplant, we have started the first program in the country.

Objective: The purpose of this study is to review our early experience of living-related donor liver transplantation program in children at one single center in Thailand.

Materials and Methods: The liver transplantation program was first started in 1988 then in 2001 the living-related donor program soon followed. After we screen for a suitable relative donor, a preoperative donor graft structure and volume are assessed using CT angiogram, while the recipient liver anatomy and the vascular structure are evaluated using ultrasonography. A donor left lateral segment is always used. Methyl prednisalone and FK506 are the post-operative immunosuppressive agents of choice. An early postoperative short course of low-dose heparin which later converted to aspirin is used for the prevention of hepatic artery thrombosis. Demographic information including age, sex, underlying disease, ABO's blood group, physical, laboratory, and psychological status of both donor and recipients are obtained. Details of the operation, clinical courses, complications, and follow-up outcomes are studied.

Results: Twelve children were initially screened but only eight patients actually underwent transplantation. There were 7 boys and 5 girls, age ranged from 6 months to 14 years. Causes of liver failure were biliary atresia in 11 patients and tyrosinemia in 1 patient. Six inflow hepatic arteries were constructed using the saphenous vein graft, while the other three used the in-situ primary artery-to-artery anastomosis with one success and two failures. The two failures then underwent a re-operation using the saphenous vein graft reconstruction. There were three early and two late postoperative complications. The two late complications included a choledochojejunostomy anastomotic stricture and a portal vein thrombosis. Seven cases had mild to moderate degree of rejection salvaged by mini-pulse and pulse therapy. All eight patients were doing well during the 2-40 months follow up. There was one minor complication in a mother donor, a bile collection that resolved without adverse sequelae after a percutaneous drainage.

Conclusions: The early experience of living-related donor liver transplantation program at Ramathibodi Hospital appears to be safe and effective. It helps expand the shortage of the donor pool and reduces the waiting list death in children.

Preoperative Portal Vein Embolization: Preliminary Report

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Background: Major hepatic resections are increasingly performed for both primary and secondary liver cancers nowadays. However, morbidity from these operations is still high. One of the dreadful complications, sometimes lead to fatality, is postoperative liver failure. There are many factors which are associated with this complication such as chronic liver disease, low residual liver volume after resection. Portal vein embolization (PVE) is the procedure which increases the liver volume of the non-embolized lobe. Now, PVE has gained acceptance in many centers to overcome or reduce this complication. This report described our experiences of PVE since 2001 at King Chulalongkorn Memorial hospital.

Methods: The records of 10 patients who had PVE were reviewed. CT volumetry of the liver was done before and after procedure. We calculated future liver remnant from CT volumetry and compared this volume to standard liver volume. The post operative complications and hospital courses of these patients were also recorded.

Results: Mean growth of future liver remnant (FLR) ratio after PVE was 13.7 ± 6.2% (median 13, range 4-25). There was no major complication after PVE. Six patients underwent liver resection and there was no major complication or mortality. No one had persistent hyperbilirubinemia 2 weeks after operation.

Conclusions: The PVE is the useful and safe optional procedure to increase future liver remnant volume. It not only reduces the postoperative liver failure but increases chance for curative resection.

Khon Kaen Model in Pre Hospital Care System (1994-2004)

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Background: The aims of care for victims from accident and emergency are to avoid preventable death and disabilities. Studies worldwide have shown that death could be prevented in many cases in which people dies before reaching the hospital. Many complications resulted in disability could also be prevented, if the patients had good pre-hospital care. Pre-hospital care system are much well developed in all developed countries but much less developed in Thailand.

Objective: 1. to develop an effective pilot model for pre-hospital care in Khon Kaen Province and 2. to advocate the necessity of pre-hospital care system in Thailand to the high authority administrators.

Methods:

1. Model Development

1.1 Set up organization structure by establishing Pre-Hospital Care Committee with the Governor as the chairman.

1.2 Set up provincial wide command control center in Khon Kaen Hospital together with extensive campaign through public media.

1.3 Recruit and develop qualified personnel in 3 levels

1.3.1 Training ER nurses in every district hospitals for pre hospital care

1.3.2 Produce a 2-year curriculum for emergency medical technician since 1996

1.3.3 Training volunteers and first responders

1.4 Set up ambulance standard and provide adequate ambulances in Khon Kaen Province

1.5 Set up pre hospital care network and zoning

1.6 Set up rules and regulations for pre hospital care services in the province

1.7 Set up software program to qualitatively and quantitatively monitor the system

2. Multiple session of National Seminars, lectures, reports were planed for the responsible authorities and personnel.

Results:

1. A well developed pre-hospital care model had been established in Khon Kaen province. In the year 2003, 28 ambulance stations had been set up provincial wide. 140 pre-hospital care nurses had been trained, 98 EMT had been produced, thousands of volunteers had been trained. Ambulance missions were progressively increased every year. In 2003, there were more than 7,000 missions. 89% of the ambulance missions left the hospital within 1 minute after the call. 80% of the ambulance missions reached the scene within 10 minutes. The quality of critical care run by personnel has progressively improved.

2. Four National Seminars were held in 1999, 2000, 2001 and 2002.

Conclusions: Pre hospital care system is one of the major components in inclusive trauma care system. This system is still much less developed in Thailand. Khon Kaen province had developed the pilot pre hospital care model since 1994 and resulted in well developed system provincial wide and it is promising that all accident and emergency in the province would be well covered and people in Khon Kaen are well accessible to this system. The next step of countrywide generalization required more complicated multi sectoral collaboration, master plan establishment, financial consideration and strong political commitment.

ATRA Inhibits Cell Proliferation but Enhances Cell Invasion Through Up-regulation of C-MET in Pancreatic Cancer Cell

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Introduction/Objectives: Pancreatic cancer is the forth and fifth most common cause of cancer-related death in men and women. The cause of lethality of this cancer is not only its rapid growth but also the tendency to invade adjacent organs and metastasize. Previous studies showed

that retinoids, which are vitamin A derivatives, regulate a broad range of biological processes, including growth inhibition and apoptosis in a number of cancer cell lines. At present, retinoids are used in chemoprevention and therapy of various cancer diseases. However, there is no study explored the effect of retinoids on the property of pancreatic cancer cell invasion. In this study, the effects of all trans-retinoic acid (ATRA) on the activities of pancreatic cancer cell proliferation, scattering and invasion were studied. In addition, the effect of ATRA on c-Met expression was determined to evaluate the probable of ATRA to affect pancreatic cancer progression.

Methods: The activities of pancreatic cancer Capan-1 cell after treatment with ATRA were determined by cell proliferation assay, cell scattering assay and invasion assay. The expression of c-Met in pancreatic cancer cell lines treated with ATRA was investigated by real-time PCR and western blot assay.

Results: The activities of pancreatic cancer cell were determined as following; the growth-inhibitory effect of ATRA was measured when the cells were cultured 5 μm ATRA for 3 days. Adding of 110 pM HGF reduced the growth-inhibitory effect of ATRA. In cell scattering assay, ATRA treated pancreatic cancer cells were found to spread out from their colonies and in invasion assay, cells treated with ATRA invaded the matrigel more than vehicle treated cells. c-Met was up regulated both mRNA level and protein level after the cells treated with ATRA. The highest expression was found at 48 hours.

Conclusions: These findings suggested that although ATRA inhibited pancreatic cancer cell proliferation, ATRA induced pancreatic cancer cell scattering and invasion. In addition, the expression of c-Met also increased by ATRA. These findings may indicate the undesirable effects of using retinoic acid as cancer therapeutic drug.

Application of Intraoperative Ultrasonography (IOUS) for Liver Segmentectomy

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Background: The definitive treatment for a small size hepatocellular carcinoma (HCC) remains surgery. Several studies have demonstrated that for HCC smaller than 3 cm, the best operation that can reduce the chance of recurrence is a segmentectomy. More radical surgery for this lesion is accompanied by higher operative morbidity without any reduction in the recurrence rate or improve in survival. On the other hand, lesser operations, such as wedge resections, should be discouraged, because they are associated with high rates of recurrence. However, the procedure of segmentectomy is not easy because there is no visible landmark on the liver surface to assess the portal area precisely.

Objective: The objective of this study is to demonstrate the simple technique of liver segmentectomy by using intraoperative ultrasonography (IOUS) guidance.

Methods: This video demonstrated the application of intraoperative ultrasonography (IOUS) for liver segmentectomy. The operative approach began with a thorough surgical exploration of the abdomen. IOUS was used to define both the size of the tumor and its relationship to the major vascular and biliary structures. To identify the portal area containing the tumor, the portal venous branch was punctured under ultrasonic guidance. Subsequently 10 ml of Methylene blue was slowly injected into this vessel until the surface of the portal area of the liver containing the tumor is stained. The stained area was marked with an electric cautery. Finally, the liver segmentectomy was performed along the marking line.

Results: The liver segment containing the tumor was completely removed and all of the surgical margins were free from the tumor. No blood transfusion was required. In addition, there was no complication in the patient who underwent this procedure.

Conclusions: IOUS facilitated surgeons in performing surgical segmental resection of the liver. This procedure removed the entire portal bed of a tumor while at the same time sparing as much of the functional liver parenchyma. It is a safe and easy method for the treatment of small size HCC.

Letrozole, the Second Line Therapy for Metastatic Breast Cancer Patients: A Cost of Treatment and the Quality of Life

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Background: The results of treatment and the quality of life are interesting aspects of the metastatic breast cancer patients. Letrozole was approved to be the second line hormonal therapy in Songklanagarind Hospital for estrogen and progesterone receptor positive patient. The cost of treatment and the quality of life were studied in metastatic breast cancer patients treated with Letrozole.

Material and Methods: From June 20, 2001 to April 30, 2004, Letrozole, 2.5 mg daily, was used as second line

hormonal treatment after Tamoxifen failure in a total of 10 female breast cancer patients. The Karnofsky's performance status and the visual analog pain score (VAS) were used to evaluate the quality of life. The measurable metastatic lesion and laboratory study were indicators to evaluate the response to treatment.

Results: The average age of the patients was 55.1 years (ranged 41 to 74). There were 7 cases that had bone metastasis, 4 of them with multiple area involvement. Three cases presented with pulmonary invasion. The duration of follow-up was 5-34.5 months and the median time of follow-up was 12.1 months. The Karnofsky's performance status showed improvement to 100% in about 2-3 months in all cases. The VAS was improved in all cases. Three cases had combined local radiation control for bone pain. All of the patients in the study were still alive at the end of the study. Complete response occurred in 1 case and the others had stable disease. The pulmonary metastasis cases were treated at the out patient clinic without dyspnic symptom. The cost of treatment using Letrozole in one patient was 76,690 Baht per year.

Conclusions: The results of treatment of the metastatic breast cancer patients by Letrozole are reported. The yearly cost of treatment is 76,690 baht for one case. All patients are still alive with an acceptable quality of life. The long-term study and the quality-adjusted life years will be further studied in a larger sample size.

Risk Factors Associated with Inguinal Hernia in Adult Male: A Case Control Study

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Objective: To determine the association between heavy object lifting and occurrence of inguinal hernia in adult male and to identify other risk factors of inguinal hernia in adult male

Research Design: A case-control study.

Subjects: Two hundred and forty three patients in three tertiary care hospitals, Bangkok Metropolitan Administration Medical College and Vajira Hospital, Phramongkutklao Army General Hospital and Phrapinklao Hospital, were enrolled in this study, 81 patients as cases and 162 patients as controls. Cases were defined as newly diagnosed inguinal hernia in adult male with the duration of symptom less than one year. Previously surgical repairs of inguinal hernia were excluded. Controls were in-patient males admitted during the same period as cases. Controls were approximately age-matched within five years interval to cases. In-patients with urological, colo-rectal and cardio-thoracic diseases were not recruited as controls.

Methods: Both cases and controls were asked to answer the same questions on their demographic background, past history of heavy object lifting, smoking, urinary outflow tract obstruction, constipation, chronic cough. Their height and estimated body weights before occurrence of the diseases and previous appendectomy via right lower abdominal incision were recorded.

Results: In univariate and multivariate analysis, no association between all exposure variables and inguinal hernia were found. The adjusted odds ratio for inguinal hernia in relation to past history of heavy object lifting was 1.12 (95% CI = 0.63 - 2.17). The adjusted odds ratio in relation to smoking, increased intra-abdominal pressure, previous appendectomy and obesity were 1.03 (95% CI = 0.58 - 1.8) 1.04 (95% CI = 0.61 - 1.76) 1.25 (95% CI = 0.48 - 1.38) and 0.68 (95% CI = 0.34 - 1.3) respectively.

Conclusions: Risk effects of heavy object lifting, smoking, urinary outflow tract obstruction, constipation, chronic cough to inguinal hernia are always posted without adequate evidence supports. This study did not suggest any inverse effect between past history of heavy object lifting, smoking, increased intra-abdominal pressure, previous appendectomy and inguinal hernia.

Angiocidal Effect of Cyclosporin A (CYA): A New Therapeutic Approach for Pathogenic Angiogenesis

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Introduction: Angiogenesis is detrimental in conditions like cancer, arthritis, and autoimmune diseases. Several agents prevent angiogenesis but only a few destroy established angiogenesis. We tested CyA in an in vivo assay of angiogenesis to determine if local administration of CyA will inhibit as well as destroy established angiogenesis.

Methods: We utilized an in vivo assay of angiogenesis in which an angiogenic mixture of Matrigel, FGF, VEGF, and heparin was injected to mice. Angiogenesis in the subcutaneous plugs was quantified by ANOVA. CyA or the vehicle for CyA was administered to the experimental or the control groups by three routes: by addition to the angiogenic mixture, by local injection into the angiogenic plug at

various time points or by systemic administration at high doses. Angiogenesis was quantified by pointing method and expressed as an angiogenic index (AI).

Results: In control animals the subcutaneous plug of Matrigel with the angiogenic mixture revealed exuberant angiogenesis at day 4 and day 7. This angiogenesis was completely inhibited when CyA was included in the angiogenic mixture; the vehicle for CyA had no such effect. Angiogenesis that had progressed was found to involute after local subcutaneous injection of CyA at day 4 and 7 after creating the Matrigel plug. Similar involution of angiogenesis was noted when CyA was administered systemically after allowing angiogenesis to proceed for 4 days.

Conclusions: Our experiments strongly suggest that CyA is both angiocidal and angiostatic in vivo. These results provide a basis for future therapy directed against established angiogenesis in malignancies and autoimmune diseases.

RCAS1 can be Detected in Metastatic Lymph Nodes from Gastrointestinal Cancers

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Aim: Lymph node metastasis is one of the most important prognostic factors in gastrointestinal cancer. Pathologist uses the technique of immunohistochemical staining to identify the cancer cells spreading into the lymph nodes. However, the tumor antigen, which can be detected in all metastatic lymph nodes from most kinds of gastrointestinal cancers, has not been identified. Recently, RCAS1 (Receptor-binding cancer antigen expressed on SiSo cells) is found to express in many kinds of primary gastrointestinal cancers. This study was aimed to investigate the expression of RCAS1 in metastatic nodes from gastrointestinal cancer.

Methods: Metastatic lymph nodes from gastrointestinal cancers, which were resected at Rajavithi Hospital, were analyzed for the expression of RCAS1 by immunohistochemical staining and mRNA in situ hybridization. In addition, the RCAS1 cDNA of metastatic lymph nodes was amplified by reverse-transcription-PCR. The 802 bps product was sequenced and compared its homology with the RCAS1 cDNA sequence databases present at NCBI Genbank (gi:13528905).

Results: 102 metastatic nodes from bile duct cancers, gastric cancers, colon cancers and pancreatic cancers were investigated for RCAS1 expression. The immunoreactivity of RCAS1 was identified in 100% of all metastatic lymph nodes. Both local and distant metastatic nodes showed similar pattern of RCAS1 expression. On the contrary, specimens of non-cancerous lymph nodes were negative for RCAS1. The RCAS1 cDNA fragment from metastatic lymph nodes revealed high similarity throughout the 802 bps in coding region. The result of mRNA in situ hybridization also confirmed the finding of immunohisto-chemical staining. RCAS1 mRNA was detected in all tumor cells metastasized to the lymph nodes.

Conclusions: All metastatic lymph nodes expressed RCAS1 in the tumor cells both protein level and mRNA level. However, non-metastatic lymph nodes did not express RCAS1. The results suggested that RCAS1 should be used as a complementary factor for identification of metastatic lymph nodes from gastrointestinal cancers in surgical specimens.

Ultrastructural Changes in Cirrhotic and Noncirrhotic Patients Due to Hepatectomy

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Introduction: Alteration in the ultrastructural level can be identified prior to histological change in the early phase of irreversible cell damage. The aim of this investigation was to compare the ultrastructural changes between cirrhotic and noncirrhotic liver in response to ischemic and reperfusion injury due to hepatectomy.

Methods: Hepatic resections using the same technique were performed in cirrhotic and noncirrhotic patients. Three biopsy specimens (Tru cut) from each patient were studied by transmission electron microscopy in the unresected part of the liver: immediately after laparotomy, before releasing of the porta hepatis clamp (ischemic phase), and 30-45 minutes after reperfusion.

Results: All patients did well after surgery except for one cirrhotic patient who died from liver failure. There were no significant differences in operative time, blood loss, and inflow occlusion times in all 15 patients. We found that morphological changes were the same in the 10 non-cirrhotic and 4 cirrhotic patients. Changes during the ischemic phase included nuclear membrane deformity, focal chromatin condensation at the nuclear margin, and swelling

of both mitochondria and endoplasmic reticulum. In the reperfusion phase, there were early irreversible changes in the nucleus of some hepatocytes and intramitochondrial particles and an increased vacuolization in cytoplasm. Endothelial cells, Kuffer cells, bile canaliculi, and Ito cells were not affected in both ischemic and reperfusion phase. However, in one cirrhotic patient who died from liver failure, there were marked swelling and dilated cristae in mitochondria during the ischemic phase and deformity of Ito cells during the reperfusion phase.

Conclusions: This is the first report in the ultra-structural changes due to hepatectomy in cirrhotic patient. The changes are the same as non-cirrhotic except the one that has postoperative liver failure.

Comparative Study between the Conventional Endoscopic Cholecystectomy in Patient with Gallstone Using the Operative Assistances, with Endoscopic Cholecystectomy Using the New Innovated Adjustable Telescopic Holder

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Background: Endoscopic cholecystectomy for patients with gallstone is a well known operative technique, which usually need one surgeon, 1-2 operative assistants and 1 scrub nurse. With the lacking of operative assistants, the new adjustable tetescopic holder was invented to solve this problem.

Objective: To evaluate the efficacy of this new instrument by comparing the operating times and complications of the conventional endoscopic cholecystectomy with the endoscopic cholecystectomy using this new instrument.

Study Design: Non-randomized clinical trial.

Setting: Department of Surgery, Chaiyaphum Provincial Hospital.

Materials and Methods: Sixty patients with symptomatic gallstones were admitted at this hospial during November 2001 to May 2002. These patients were equally divided into two groups. Group I patients were operated by conventional endoscopic cholecystectomy, which consisted of one surgeon, one operative assistant, and one scrub nurse. Group II patients were operated by endoscopic cholecystectomy with the new adjustable telescopic holder and consisted of only one surgeon and a scrub nurse. Both group were operated by the same surgeon. The operating times and complications were recorded.

Results: Thirty patients in group I consited of 6 males and 24 females, 15-78 years of age (averaged 52.8 years). Their body weitht was44-87 kilogram (averaged 67.5 kilogram. There were 2 patients with diabetes millitus and hypertension in each group, and one patient with both diseases. Group II consisted of 5 males and 25 females, 17-76 years of age (average 52.5 years). their body weight was 42-89 kilogram (average 65.8 kilogram). There were two cases with diabetes millitus, one case with hypertension and one case with both diseases. The operating times of group I and II were 24.6 ± 7.5 and 25.7 ± 8.9 minutes respectively ($P > 0.05$). There were no complications during and after operations. The cost of the invented instrument was 50 times cheaper than imported instrument.

Conclusions: This new adjustable telescopic holder was effective and could replace the operating assitants in the endoscopic cholecystectomy for patient with gallstone.

A New Device for Needle Cricothyroidotomy

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Background: Needle cricothyroidotomy is an alternative life-saving procedure when tracheal intubation is not possible. Temporary oxygenation (30-45 minutes) can be provided until a definitive airway is achieved. While this procedure is not complicated, it is cumbersome to assemble the appropriate equipment quickly and correctly during an emergency. Therefore, this is a real need for a prompt system under sterile condition. It should be made available in all emergency carts.

Method: This new system is simply composed of a connector and a large bore needle (14-G), packed in a sterile condition. In oder to make the connector, two syringes are equally trimmed at the base before attached together with epoxy glue and rubber tape. At one end of the attached syringe, a side port is made for intermittent occlusion controling by thumb. When deployed, the side hole end is attached to the needle as the other end is joined with an oxygen source. For convenience while performing tracheostomy, an extension tube can also be added.

Setting: Phramongkutklao, Navamin, Srisiam Sinphat and Phatara Hospital

Results: During a 2-year trial period, needle cricothyroidotomy was introduced in 8 patients from 5 hospitals following unsuccessfull initial tracheal intubation. Seven were trauma patients with severe maxillofacial injuries. One was a medical patient who previously had tracheostomy. After providing a temporary oxygenation, definitive airways were secured in all patients. Consequently, 7 patients were discharged while one patient died due to severe multiple organ injuries (revised trauma score = 1.2276).

Conclusions: The key to success of the technique of needle cricothyroidotomy is to have the equipment prepared and readily available. This new technique is currently quickest and easiest way to execute. Moreover, the small, sterile and low cost package makes it possible to acquire in all emergency carts.

Endo Water Irrigating Device

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Objective: To develop endo water irrigating device and evaluate the efficacy and the effectiveness of this device.

Materials and Methods: Endo water irrigating device was developed. After testing in vitro, the irrigating pressure from this device and syringe was measured. From October 2000-2001, 200 patients were enrolled into this study. This device has been used incorporated with gastroscope in 80 patients and colonoscope in 120 patients. Evaluation was performed in terms of endoscopic view, injury to GI mucosa, convenience to use, bacterial contamination, and adverse events.

Results: Pressure from this device was 126.63 ± 23.41 mmHg which was less than pressure generated from syringe contained normal saline 5 cc (128.31 ± 39.72). The endoscopic view of the lesion was clearer in 93.5%. There was no injury to GI mucosa or any adverse events. Endoscopists were satisfied with this device compared with syringe in 94.5% of patients. Less than 103 colony count of pseudomonas species could be cultured from irrigating fluid.

Conclusions: The model of Rajavithi endo water irrigating device could be used safely in the patients and satisfies endoscopists. Endoscopic visualization is improved by this device.

Assisted Instrument for Limb Skin Graft Harvesting

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Background: Nowadays, harvesting limb skin graft needs an assistant to comfort the surgeon by compression on the limb to make stretched and prominent skin during slicing or cutting the prepared skin, especially harvesting with hand-held knives. This technic depends on the assistant's strength to maintain compression on the limb. If the assistant is exhausted the process will be interrupted and may cause loss of skin continuity and regularity. Additionally, the assistants may take risk of injury from surgeon's knife during this process. These factors will cause loss of steadiness of compression on the limb and interference of skin graft harvesting process.

Objective: To present and introduce the new instrument in skin graft harvesting.

Material and Methods: The instrument was designed, created and developed until reaching appropriate size and simplification. Stainless steel was chosen to make this instrument.

Results: This instrument can help surgeons in harvesting limb skin graft.

Conclusions: This instrument provides comfort, steadiness of limb compression, no risk of injury to assistant, good continuity and larger size of harvested skin graft and no need for assistant to compress limb.

Program on Pocket Digital Assistant (Palm OS Platform) for Staging of Cancer

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Objective: To develop a pilot program that can facilitate the staging of cancer on Pocket Digital Assistant (Palm OS Platform).

Materials and Methods: Cancer of the breast, colon and rectum, esophagus, stomach and thyroid were used as prototype in this study. Satellite forms were created as a tool program for coding and designing an application. Twenty surgical residents from Ramathibodi Hospital used this program to access the staging of cancer patients. Accuracy and time required to stage the cancer were analyzed and compared between using and not using this program. Statistical analysis was performed by using pair T-test with P <0.005 considered significant.

Results: 1st, 2nd, 3rd and 4th year residents in the amount of 6, 6, 4 and 4 respectively were included in this study. Most of them never use PDA before (18 out of 20, 90%). Mean time required when using and not using palm to evaluate and stage cancer were 15.55 ± 3.79 and 16.35 ± 5.28 respectively (P = 0.5310). The accurate score when using and not using palm were 17 ± 1.9 and 12.4 ± 2.43 respectively (p <0.001).

Discussion: The results from this study indicated that the pilot program developed in this study facilitated the staging of cancer.

A Comparative Study Measuring Pressure Among Variation of Adhesive Dressing Methods

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Objective: To compare pressure generated by various modalities.

Study Design: Experimental study in model

Subjects: Pressure from each adhesive dressing method

Intervention: Five types of adhesive dressing, including 1) adhesive dressing with micropore 2) adhesive dressing with transpore 3) adhesive dressing with Fixumul 4) adhesive dressing with Elastic bandage 5) adhesive dressing with pressure bra, were applied to body part models. Pressure was measured at 0, 1, 6, 24 hours. The experiment was repeated for 6 times. Data were analysed with ANCOVA and repeated measure analysis.

Results: The pressure of wound dressing with Fixumul, elastic bandage and pressure bra were significantly different from wound dressing with micropore and transpore. Adhesive dressing with pressure bra was most sustainable during the first 24 hours.

Conclusions: Each adhesive dressing method generates different pressure. The adhesive dressing with Fixumul, elastic bandage and pressure bra resulted in higher pressure than the other two.

Accuracy in the Diagnosis of Patients with Cervical Lymphadenopathy by Fine-Needle Aspiration Cytology and Open Biopsy

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Objective: To determine the diagnostic accuracy of fine-needle aspiration (FNA) cytology compared to surgical biopsy for the diagnosis of patients with cervical lymphadenopathy

Study Design: Operative-comparative study

Setting: Division of General Surgery, Department of Surgery, Bangkok Metropolitan Administration and Vajira Hospital

Subjects: Forty-five patients, more than 15 years old, with cervical lymphadenopathy undergoing fine-needle aspiration (FNA) cytology and open biopsy from May 2003 to March 2004.

Intervention: Fine-needle aspiration (FNA) cytology and open biopsy were performed on the same cervical lymph node

Main Outcome Measurement: Cytological and pathological report

Results: Among 45 patients, there was 1 inadequate specimen. FNA revealed the etiology of cervical lymphadenopathy from 14 specimens of benign lesion with 92.86% sensitivity, 70.00% specificity, and 77.27% accuracy; from 23 specimens of infection/inflammation with 65.22% sensitivity, 95.24% specificity, and 79.55% accuracy; from 7 specimens of malignancy with 85.71% sensitivity, 100.00% specificity and 97.73% accuracy.

Conclusion: FNA has high accuracy in facilitating definitive management in majority of patients with cervical lymphadenopathy, more sensitive in benign lesion and malignancy than infection/inflammation.

Standard Liver Volume in Thai Population

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Background: Major hepatic resection and liver transplantation (living donor and split-liver transplantation) require the calculation of standard liver volume to ensure that the patient has sufficient hepatic tissue to meet the metabolic demands after surgery. This prospective study was designed to determine a formula predicting liver volume based on biological parameter (body weight, body height, body surface area (BSA) and body mass index (BMI).

Objective: To measure standard liver volume in Thai population

Patients and Methods: A total of 18-male and 2-female autopsy livers from the Department of Forensic Medicine, age ranging from 15-60 years, were investigated for this study. Liver volumes were estimated by water displacement. BSA and BMI were calculated from height and weight.

Results: The prospective data was analysed by correlation coefficient. The body weight was found to correlate with liver volume most closely (r = 0.841), while body mass index (r = 0.807), body surface area (r = 0.773) and body height (r = 0.477) correlate less closely. A linear regression formula to estimate total liver volume (TLV) based on body weight was obtained: TLV = 19.59 × weight (kilogram; r2 = 0.988; P <.0001). A formula based on body mass index also was derived: TLV = 53.95 × BMI (r2 = 0.987; P <.0001). A formula based on body surface area also was derived: TLV = 721.31 × BSA (square meter; r2 = 0.981; P <.0001).

Conclusions: Total liver volume was found to correlate with body weight, body mass index (BMI) and body surface area (BSA). The formulas for the calculation of TLV were established by linear regression analysis as follow: TLV = 19.59 × weight; TLV = 53.95 × BMI; TLV = 721.31 × BSA

Prediction of Nipple Areolar Complex Involvement in Breast Cancer

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Background: The role of nipple sparing mastectomy as an alternative to standard mastectomy is becoming available. Due to the varied reported incidence of nipple-areolar complex (NAC) involvement (6-54%) in breast cancer with no reliable preoperative clinico-pathological predictors, the patient selection for nipple sparing mastectomy is challenging.

This study aimed to determine the incidence of NAC involvement in Thai breast cancer patients with clinically-uninvolved nipples. The predictive value of frozen section of subnipple tissue and other clinico-pathological parameters in determining NAC involvement was systematically examined.

Research Design: Prospective descriptive analysis in a tertiary care hospital

Material and Methods: Patient selection: All breast cancer patients underwent standard mastectomy were included, excluding those who had clinically nipple involvement, neoadjuvant chemotherapy, Paget's disease and pre-excisional biopsy. Study procedure: From mastectomy specimen the subnipple tissue was collected for frozen section to compare with serial permanent section of NAC. The clinical data, mammographic or sonographic finding and pathological report were collected for analysis.

Results and Analysis: Forty-six patients were recruited from July 2003 to May 2004. Forty-five patients had ductal carcinoma and one lobular carcinoma. The NAC involvement was found in 13/46 specimens (28%). The frozen section of subnipple tissue showed 84.8% specificity, 84.6% sensitivity and 84.8% accuracy. There was no statistically significant correlation between other clinico-pathological parameters or radiological parameters.

Conclusions: Frozen section of subnipple tissue can predict the NAC involvement of breast cancer. Nipple sparing mastectomy in selected patients with favorable clinical predictors could be considered in negative frozen section group.

How I do It "Chiangrai Knot Pusher"

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Symptomatic gallstone, presented as chronic cholecystitis, is a common disease that usually needs elective laparoscopic cholecystectomy. It is a common operation available in most provincial hospitals. Concerning its high cost, some surgeons hesitate to perform this procedure. There are many techniques to reduce its high cost. The effective one is not to use endoclip but try knot tying. I have adapted instruments for extracorporeal knot pushing, knot pusher, made from very simple materials. I call it "Chiangrai knot pusher" which belongs to the province I have practiced. The knot pusher has been used in 28 cases of symptomatic chronic cholecystitis with excellent satisfaction. The cost is reduced to 51.5%. The results are as good as the conventional knot pusher.

CARDIOTHORACIC SURGERY

A Successful Removal of Intracardiac Metastatic Hepatoblastoma: A Case Report

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Cardiac tumour is uncommon, and only a small number are encountered. The vast majority is secondary; autopsy incidence ranging 0.24-6.5%. According to literature worldwide, the most common primary site of metastatic cardiac tumour is renal in origin, including Wilm's tumour and renal cell carcinoma. Meanwhile, hepatoblastoma is one of the two most common primary hepatic malignancies, which are rare in childhood. We reported a successful removal of intracardiac metastatic hepatoblastoma.

The patient was a 3-year-and-4-month-old girl suffering from liver tumour since she was at the age of four months. An abdominal mass was detected by her mother. On abdominal computerised tomography (CT) scan, there

were liver masses in the left and right lobes of liver. Alpha fetoprotein was more than 60,500 U/l. The pathological diagnosis, made by liver biopsy, was compatible with hepatoblastoma. A short chemotherapy regimen together with TOCE was commenced. Two years later she was given a combination of intra-tumoural radio-frequency and microwave ablation. The tumour partially responded to the treatment. However, an intracardiac metastasis was detected eight months later; an inferior vena caval thrombus extending into the right atrium was demonstrated on a follow-up chest CT scan. Subsequently, the combination regimen of Irrenotecan and Carboplatin was made. Yet, the treatment was futile, therefore surgical consultation was necessary to prevent pulmonary thrombo-embolic complication.

She underwent the operation conducted on cardio-pulmonary bypass using aortic and bi-caval cannulations. Single dose antegrade crystalloid cardioplegia was given. There was a $2 \times 1.2 \times 1.2$ cm sessile polypoid mass attached to the interatrial septum extending from just below the lower rim of the fossa ovalis and ending at the right atrial free wall above the IVC orifice. The tumour was successfully removed via right atriotomy. Postoperative course was uneventful. She was on the waiting list for liver transplantation.

In summary, intracardiac metastasis of hepatoblastoma is rare, and most of the patients are not warrant to carry out surgical removal. Cardiac metastasis reflects systemic hematogenous spreading but does not preclude resectability. Tumour removal probably offers a better chance for cure or prevention of thrombo-embolic complication. Moreover, it may also facilitate paediatric surgeons to make a decision to do more radical surgery, hepatic transplant, in this particular patient.

Endoscopic Conduit Harvesting (ECH)

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Background: Saphenous vein graft (SVG) and Radial arteries are most common conduit for coronary artery bypass graft (CABG). But conventional techniques are more invasive and infection rates are high in diabetic groups. Endoscopic conduit harvesting (ECH) is safe, reduces infection rate and gives excellent cosmetic results.

Methods: Ten consecutive patients for CABG underwent ECH without complications. All vessels were accessed through 3 cm incision in the knee for SVG and in the wrist for RA. Commercial instruments were used. Branches were ligated and divided by bipolar cauterization. SVG harvesting can be performed at both thighs and legs.

Results: Among 10 patients, 7 were males with average age of 66.1 (54-79) years. Six of 10 patients were diabetic. Operating time for SVG was 44.5 min (35-98) in the thigh only and 96.5 min (89-104). There were no wound complications. All patients were satisfied with cosmetic results.

Conclusions: ECH can be performed in a reproducible, safe, and efficient manner with less morbidity and better patient satisfaction.

Lung Transplantation in Chest Disease Institute

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Introduction: The first single lung transplantation was performed successfully at Rajvithi Hospital on July 6, 1991 and subsequently the bilateral sequential lung transplantation was performed at the same hospital on February 16, 1993. Our first single lung transplantation was performed on September 29, 1997. The purpose of this report is to present our experiences of lung transplantation with particular emphasis on the intermediate results of lung transplantation in this institute.

Materials and Methods: There were 6 patients who received 8 lung transplants between September 1997 to March 19, 2004. There were 3 men and 3 women with age ranged from 38 to 63 years. The indications were emphysema in one patient, idiopathic pulmonary fibrosis in three, destroyed lungs due to tuberculosis in two and LAM disease in one. Long distance organ harvesting was performed in all cases. The average ischemic time was 5 hours and 39 minutes and ranged from 2 hours and 20 minutes to 9 hours. Eurocollin solution with 0.5 mg of prostaglandin E1 was used in the first two patients, thereafter, all had UW solution with 500 mg. of methylprednisolone given before UW administration.

Results: There was no immediate mortality after operation though one patient died 18 days after single lung transplantation for tuberculous destruction of both lungs due to bleeding after bronchial biopsy. The immediate long-term results were studied. One patient died 6 months after bilateral sequential lung transplant for idiopathic pulmonary fibrosis due to proliferative lymphatic disorder.

Discussion: In our series the ischemic time went beyond the recommended period of 4-5 hours with good lung function after transplantation. We believe that the

methylprednisolone given to the donor before harvesting can suppress complement activation and the pro-inflammatory cytokines and cytokines from donor. The most frequent morbidity after lung transplantation is infection which occurred in half of our patients. Our retransplantation was for severe infection causing deterioration of the transplanted lung.

Limitation: The numbers of our patients are too small and the average follow-up of 3 years is too short to make any valid conclusion. However, this is the first report of lung transplantation with intermediate term of follow-up in this country.

Conclusions: This report concerned the experiences of lung transplantation at the Chest Disease Institute, Nonthaburi. The intermediate long-term follow-up shows that transplantation offers unlimited activities after transplantation though infection is to be aware of in all patients. Retransplantation is also possible for treatment of lung infection with deterioration of lung function.

Queen Sirikit Heart Center: Early Experience of Open Heart Surgery

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Queen Sirikit Heart Center of the Northeast was established to celebrate the 60th birthday anniversary of Her Majesty the Queen in the year 1992. The other major objective of our center is to provide tertiary cardiovascular healthcare for the people of the Northeast of Thailand. Since 25th January, 2004, we started the open heart surgery project to celebrate the 6th cycle birthday anniversary of Her Majesty the Queen. Our early experience was reviewed for clinical features, diagnosis, treatment and immediate outcome. This study showed how to start open heart surgery in the new center. This is a retrospective descriptive study of patients underwent open heart surgery during 25th January 2004 - 10th June 2004 at Queen Sirikit Heart Center of the Northeast. Medical records of 251 open heart surgery patients operated during 25 January 2004 - 31 May 2004 were reviewed. There were 65 Males and 86 Females. Their ages ranged from 6 - 69 years, averaged 37.79 years. Majority of the patients had acquired valvular heart disease (63.6%). The second most common condition was congenital heart disease (34.4%). Others included coronary heart disease (1 patient) and left atrial myxoma (1 patient). There were no mortalities. Morbidity included wound infection, pneumonia and active bleeding occurred after operation in 2 patients (1.3%) who needed re-operation to stop bleeding.

Retrospective study of open heart surgery in a new cardiac center of Khon Kaen University was presented. The results were excellent because of strict case selection, keen surgical team and good post operative care. The 72nd birthday cerebration for Her Majesty the Queen is a good opportunity for Thai people to have a good and healthy heart.

Management of Esophageal Injury

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It is widely accepted that over 70% of causes of esophageal trauma are caustic and iatrogenic, and less than 1% caused by external trauma.

Songkla Nagarind Hospital, Prince of Songkla University, in Southern Thailand is a fully equipped and largest teaching hospital with 800 beds. We have had much learning experiences about esophageal problems. Over 1200 esophageal procedures such as esophagoscopy, dilatation or resections were performed each year.

Over the past 2 decades, we have seen over 2000 cases of esophageal cancer, 303 cases of corrosive esophagitis and stricture from the ingestion of strong acetic or sulfuric acid intended for suicidal attempt. Treatments in the majority are dilatations because of patients' refusal of major surgery such as colon bypass. More than 2000 dilatations were done in these 303 cases of stricture, average 6.2 dilatations per one patient, (range 2-45) with 4% of perforation. The explanation for this high incidence of leakage was because the stricture was long, with multiple segments and severe fibrosis. For esophageal cancer, the palliative resectability rate was about 45%, we used all types of technic of esophageal resection. The surgical results were not satisfactory due to leakage in 8-12%, mortality of 18-20% in the leakage group and with short survival. Most common causes of death were sepsis and respiratory failure.

Surprisingly in this same period, we have seen only 5 cases of actual esophageal injury; 3 stabbed wound, one transmediastinal gun shot, and one foreign body.

So far the most common iatrogenic injuries in our institute are caused by dilators, and less by esophagoscopy. Earlier we used Eder-Puestow and Tucker's dilator but in the past five years we have used more of balloon or Savary-Gilliard Dilator under guide wire and fluoroscopy. It seems to us that recently we have had less iatrogenic perforations. From what we have learned in the past in the management and care of these patients, we can see some ways to improve

the outcome of the treatment of esophageal rupture and perforations.

In conclusion, we believed that safe and careful surgical technic, good preoperative and postoperative care, early diagnosis of rupture within 8 hours, early drainage and debridement of mediastinum, early repair or diversion if indicated, appropriate antibiotic and adequate nutritional support are most important in improving survival in esophageal trauma.

Patent Ductus Arteriosus in the Adult Treated by Triple Ligation: Chest Disease Institute Experience

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Introduction: Patent ductus arteriosus (PDA) ranks high among congenital cardiovascular abnormalities with a prevalence of 1/5500 in the young population up to 14 years. In the developed country, early surgical closure of PDA by either division or ligation is the main treatment. But in Thailand there still are patients with PDA in the adulthood. In this paper we would like to show our experiences in the treatment of PDA in adults with Triple ligation.

Materials and Methods: During 1 January 1999 - 31 December 2003 there were 42 patients with PDA. Three patients were excluded because of other deformities. Thirty nine PDA were treated by either thoracotomy and triple ligation or transsternal direct closure. Their mean age was 26.97 ± 12.16 years (ranged 13-71 years). There were 26 female (66%), and 13 male (33%), with mean pulmonary pressure of 41.36 ± 22.2 mmHg (ranged 8-100 mmHg). Thirty three patients were operated by thoracotomy and triple ligation of PDA (Thoracotomy group), 6 patients by transsternum direct closure with cardiopulmonary bypass support (Bypass group).

Results: In one of 33 patients in Thoracotomy group, PDA was unable to be ligated due to heavy calcification. Comparing between two groups, there are no significant difference in gender, age, pulmonary pressure and length of stay. Complications in Thoracotomy group included 1 patient (3.1%) with residual PDA and 1 patient (3.1) with chylothorax. There were no major neurological complications in both groups.

Conclusions: Surgical closure of Patent Ductus Arteriosus by Triple ligation is feasible in adult patients but factors to predict which technique is suitable for the patients need to be studied.

Hand Evaluation after Radial Artery Harvested in Case of Coronary Artery Disease

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Objective: To test any significant changes of hand function in coronary artery disease patients with harvested radial artery.

Materials and Methods: A prospective study of 30 patients who underwent bypass surgery with harvested radial artery was evaluated for hand functions including precision grip, power grip and hook grip. The timing for evaluation included pre-operation, 6 weeks post operation and 12 weeks post operation.

Results: Considering hand finctions in precision grip, power grip and hook grip, there is significant changes of hand functions between pre-operative and post operative period ($p < 0.05$).

Conclusions: We conclude that harvesting the radial artery for coronary bypass surgery will impair some degree of hand function postoperatively although digital circulation is adequate.

Creation of a Dual-Coronary System for Anomalous Origin of the Left Coronary Artery from the Pulmonary Artery with the Trapdoor Technique

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Background: Results of the repair of anomalous origin of the left coronary artery from the pulmonary artery (ALCAPA) have improved. Direct implantation of the anomalous coronary artery into the ascending aorta establishes a dual-coronary system and is the goal of current surgical approaches. We report our results with this technique.

Materials and Methods: Between December 2001 and June 2004, 4 patients underwent surgery for ALCAPA. There were 3 females and one male. Ages ranged from 3.5 months to 12 years (median = 5 months) and weight ranged from 3.5 to 45 kg. (median = 4 kg.). One patient had severe mitral regurgitation (MR) with severe congestive heart failure.

Results: Direct implantation of the anomalous coronary artery into the ascending aorta was feasible in all four patients. For coronary transfer, a trapdoor flap was created on the ascending aorta for the implantation of the coronary button and the sinus defect in the main PA was

augmented with a pericardial patch. Mitral valve annuloplasty was performed in one patient with severe MR. Immediate post-operation there has been no mortality or morbidity. Left ventricular function was improved in an early post-operation period.

Conclusions: Using a standard technique, direct implantation of the anomalous coronary artery into the ascending aorta was achieved in all cases. At an early post-operation follow-up, LV function had improved by echocardiography. No postoperative mechanical circulatory support was required in any of these patients. This operative technique is reproducible and is applicable in the majority of patients with ALCAPA.

Extracardiac Fontan Operation at Siriraj Hospital

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Because of many advantages of the extracardiac Fontan operation, we began performing this operation in 1997. Here we report the results of 28 cases with 2 early deaths. All of the patients were in functional class I (except 2 in class II) at the last follow up.

Feasibility of Complete Arterial OPCAB

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Objective: To determine the feasibility of complete revascularization with all arterial and Off-Pump CABG.

Materials and Methods: Two hundred and fifteen patients underwent all arterial revascularization between Jan 1, 2001 and Dec 15, 2003. The LIMA (208 grafts) was routinely used to bypass LAD and diagonal sequentially in 94%. The left radial artery (199 grafts) was connected to the aorta with aortic connector and distally anastomosed to the intermediate (7%), OM1 (39%), OM2 (10%), OM3 (2%), distal circumflex (2%) and branches of the right (PDA 10%, PL 13%, PL2 0.5%, RCA 1.3%). The right system was bypassed either with the RIMA (19 grafts) and/or gastro-epiploic artery (133 grafts). Occasionally, the right radial artery (6 grafts) went to the right system. The predicted (P) number of grafts per patient was determined by group of surgeons before surgery. The number of actual grafts performed (observed = 0) was also recorded and the O/P ratio calculated.

Results: The total number of grafts/pts = 4.2 ± 1.2, with 35% of the patients had 4 grafts, 31% had 5 grafts,16% had 3 grafts, 6% had 2 grafts, 2% had 1 graft, 1% had 7 grafts and half percent had 8 grafts. The operative mortality was 3.3%. Skin to skin time was 4.36 ± 0.7 hrs. There were no strokes, no deep sternal wound infection and no re-admission within 1 month. Re-operation for bleeding occurred in 2.3%, POMI in 0.5%, renal failure required analysis in 1.4%, new atrial fib in 14%. The conversion to on-pump was1.9%. The O/P ratio was 1.18.

Conclusions: Completed revascularization is feasible in OPCAB patients utilizing all arterial conduits. The O/P ratio confirmed the complete revascularization. This could be done safely and the results are comparable to those of On-Pump cases.

Use of Radial Conduits and St Jude Aortic Connector

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Objective: To evaluate radial artery for revascularization of the lateral wall of the left ventricle (LWLV) with St. Jude aortic connector proximally and multi sequential distally.

Materials and Methods: Between July 2002 and May 2004, two hundred and twenty one St Jude aortic connectors were used at our institution. Two hundred and six of them were with radial artery (RA) and 15 with saphenous vein. Six radial artery went to LAD and the rest went to bypass the left lateral ventricular wall and inferior wall of the left ventricle (n = 200). Single St.Jude aortic connector was used proximally and multi-sequential distally (1 - 6 sequential). Graft assessment was with Medi-Stim AS butterfly flow meter. Stress (49) and dobutamine (12) echos were carried out at 6 ± 2 months. Echocardiography used to visualize all of the cardiac walls. For quantitative purposes the LV wall is divided into 4 segments; the mid anterior segment (MAS), mid lateral segment (MLS), mid posterior segment (MPS), and basal lateral (BLS). These representing areas are supplied by circumflex and posterolateral branches. Wall motion score assigned as 1 represents normal motion; 2, hypokinesis; 3, akinesis and 4, dyskinesis.

Results: Flow was 30.83 ± 22.02cc/min (PI = 1.86,

DF = 59.8%). At 6 months, all had no angina; one having arm pain; two had positive stress test. One of these two had patent graft; the other (with arm pain) had string sign of the radial artery. Stress test showed all, except two (above) accomplished adequate workload with wall motion segment scores (sum of scores/frequency of segment observation) equal or better than preop values: MAS = 1.3; MLS = 1.28; MPS = 1.34; and BLS = 1.2

Conclusions: Excellent short term results obtained from using aortic connector and radial conduits to bypass LWLV.

Surgical Treatment for Tuberculous Tracheobronchial Stenosis: A Case Report

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A 56 year old female with history of pulmonary tuberculosis who received full course of anti-tuberculous therapy 30 years ago is reported. She had progressive dyspnea and was treated for asthma for 6 months. Without response to medical treatment and with signs of upper airway obstruction, she underwent fiberoptic bronchoscopy. The bronchoscopic finding revealed severe stenosis of the lower trachea 4 cm above carina with the diameter of 5 mm and complete occlusion of the orifice of the right main bronchus. CT scan demonstrated a long narrowing of the lower trachea with a short segment occlusion of the proximal right bronchus and collapse of the RUL. The patient underwent surgical reconstruction through the right thoracotomy. A short segment slit-like opening of the right main bronchus and complete collapse of the RUL with totally occluded RUL bronchus were found. Stenosis of the lower half of the trachea with partial collapse was due to tracheomalacia and the internal diameter was 10-15 mm in diameter. The RUL lobectomy and right main bronchial resection with right intermediate bronchial end to side anastomosis to the left main bronchus was performed. Tracheopexy was done to the malacic trachea. Without sign of upper airway obstruction, the patient uneventfully recovered from the operation.

COLORECTAL SURGERY

A Comparison of Postoperative Complications between Emergency Hemorrhoidectomy and Elective Hemorrhoidectomy

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Objective: To compare the postoperative complications between emergency hemorrhoidectomy and elective hemorrhoidectomy in the following aspects: infection, bleeding, thrombosis and fissure.

Meterials and Methods: Retrospective, case-control study

Case: Emergency haemorrhoidectomy in Chulalongkorn University Hospital from 1998 to 2003, total 58 case.

Control: Elective haemorrhoidectomy in Chulalongkorn University Hospital matching 4 characteristics: sex, age, number of heamorrhoid, years of operation, total 58 cases.

Data: Reviewing charts and OPD card

Statistical Analysis: X2 test with one degree of freedom. P <0.05 was considered significant.

Results: The mean age was 43 (range 16-80) years in patients undergoing elective surgery and 42 (range 20-86) years in those receiving emergency procedures. Complications occurred in 8/58 (13.7%) with no bleeding (0/58, 0%), thrombosis in 1/58 (1.7%) and anal fissure in 7/58 (12%) in emergency harmorroidectomy group compare with 9/58 (15.5%), 1/58 (1.7%), 3/58 (5.1%), and 5/58 (8.6%) repectively in elective haemorrhoidectomy group. These results are not significanlly different.

Conclusions: Emergency haemorrhoidectomy is indicated for the treatment of acute prolapsed, thrombosed internal hemorrhoid.

Single-staged Treatment of Acute Anal Abscess

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Objective: To study if a single-staged surgery (instead of two) on uncomplicated acute anal abscess (with or without acute fistula) has any promising effect on the outcome of the healing.

Materials and Methods: The treatment by wide open

and drainage, fistulotomy, nightly packing of the wound, and occasional currettage were carried out in uncomplicated acute anal abscesses (9 ischeorectal and 23 perianal) during January 1997-December 2002 at Siam (Paolo-Siam) hospital. Fistulotomy was accomplished in all acute perianal abscesses but in only few (3 in 9) ischeorectal abscesses. Nightly packing of the wound and occasional currettage were contemplated in all cases.

Results: Two of 9 cases with ischeorectal abscess healed (25%, 5 year cure rate). The rest (7 in 9) had either uncomplicated recurrent abscess or fistula in ano at the later date. Twenty-two out of 23 cases of acute perianal abscess have been cured (95% cure rate).

Conclusions:

1. Single-staged treatment may not result in complete cure of the ischeorectal abscess, but it can markedly reduce the complexity and extension of recurrent abscess and/or fistula.

2. Fistulotomy alone may not contribute to the overall success of the healing.

3. The single-staged treatment (by wide O&D, fistulotomy, nightly packing,and occasional currettage) has been proved to be effective in the treatment of uncomplicated acute perianal abscess.

The Incidence of Palmar Plantar Erythroderma (PPE) in Patients with Colorectal Cancer Receiving Capecitabine and Pyridoxine: An Early Experience in Rural Area of Thailand

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Introduction: Capecitabine is an oral tumour-selective fluorpyrimidine carbamate. The incidence of PPE in patients receiving Capecitabine ranges from 6% to 67%. Pyridoxine (B6) has been shown to decrease the pain from PPE in patients receiving 5-FU and leukovorin.

Objectives: To study the incidence of PPE in patients with colorectal cancer receiving Capecitabine and Pyridoxine.

Materials and Methods: The prospective study was done at Colorectal surgical unit, Maharat Nakhon Ratchasima Hospital, Nakhon Ratchasima Province, Thailand for the period of 9 months between September 2003 to May 2004. The patients in this study had been treated with Capecitabine and Pyridoxine or with other drug combination for at least 2 cycles. The incidence of PPE was recorded in patients with colorectal cancer receiving Capecitabine and Pyridoxine (B6 100 mg oral bid).

Results: Nineteen patients were enrolled in this study (male:female = 10:9). Mean age was 59.1 (SD = 9.76) years. Median level of preoperative CEA was 12.39 (min-max = 0.92-2055) ng/ml. Mean cycle of treatment was 4.7 (SD = 2.31) cycles. Mean Karnofsky performance status was 87.9 (SD = 9.76). Sixteen patients were treated with Capecitabine and Pyridoxine alone, 2 patients combined with Oxaliplatin, and 1 patient with Irinotecan. PPE was found in 4 patients (21.0%) (grade I : grade II = 2:2). Two patients could not be continued with Capecitabine due to progression of the disease and died.

Conclusions: PPE was found in 4 (21.0%) of 19 patients.

The Lateral Ligament of the Rectum: What and Where is It?

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Purpose: The aim of this study was to identify the location of the lateral ligaments of the rectum (LLR) and to reveal its contents.

Methods: From 18 human soft cadavers (9 male, 9 female), 18 pelves were sagitally sectioned into 36 hemipelvic specimens affording good anatomical view of the lateral aspect of the rectum. All of them were dissected and mobilized using sharp technique under direct vision by one surgeon to avoid confounding factor. LLR were identified and measured the distance from the center of its insertion to the promontory of sacrum and coccyx. After measurement, they were transected and brought for histological study of its component.

Results: In 36 hemipelvic specimens, 18 of LLR were found on the right side of the rectum and 18 were found on the left side. There was one cadaver who had no LLR on the right side and another one had 2 LLR on the right side observed 3 centimeters from each other. The location of LLR was posterolateral to the rectum. The distance from LLR to sacral promontory on the right side was 8.14 ± 1.82 centimeters (Mean ± SD), and 8.14 ± 1.22 centimeters on the left side. The distances from LLR to coccyx on the right and left sides were 5.12 ± 1.40 centimeters and 4.88 ± 1.29 centimeters, respectively. The content of LLR consisted of loose connective tissue with cluster of small nerves. There was no artery detected in all specimens. The small arterioles and venules were discovered in only 4 specimens.

Conclusions: LLR were located at posterolateral side of the rectum. They were closer to the coccyx than to the

sacral promontory. Its component was loose connective tissue containing multiple small nerves. There was no artery found in any LLR by histological study. Small arterioles and venules were detected in 11% of all LLR.

Seton in the Treatment of Horseshoe Fistula

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Objective: To compare the treatment of horseshoe fistula between Hanley's technique alone and Hanley's technique with Seton.

Setting: King Chulalongkorn Memorial Hospital.

Design: Retrospective and descriptive study.

Subject: In-patient records of patients with horseshoe fistula treated with Hanley's technique alone and Hanley's technique with Seton at King Chulalongkorn Memorial Hospital from 1993 to 2001 were reviewed.

Methods: The information on recurrences and complications were reviewed from in-patient and out-patient records. Interviews with patients or their relatives were also conducted.

Results: There were 374 cases of fistula in ano. Twenty-five of 51 cases of horseshoe fistula were treated either with Hanley's technique alone or a combination of Hanley's technique with Seton. Twenty-six cases were treated with another technique. Accordingly, Hanley's technique was done in 13 patients. There were 4 recurrences (1 healed after re-operation; 3 lost follow-up). Healing by the first operation, without any complications, was found in 9 patients (64%). There were 3 recurrences in twelve patients treated with Hanley's technique and Seton (2 healed after re-operation; 1 lost follow-up); and 1 had partial incontinence (8%). There was no statistical difference in recurrent rate and complications among both groups.

Conclusions: The results of treatment between Hanley' s technique alone and Hanley's technique with Seton in horseshoe fistula were not different.

VASCULAR SURGERY

Must Patients Stop Smoking Before Carotid Endarterectomy?

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Background: Smoking has been shown to increase the risk of stroke. Carotid endarterectomy (CEA) will offer more benefits in terms of stroke prevention if the risk of postoperative stroke is low. Stopping smoking at least 2 months before elective surgery has been recommended to reduce perioperative pulmonary complications. Therefore some surgeons recommend postponing any elective surgery, including CEA, until patients are able to stop smoking to reduce the risk of perioperative complications. Our study aims to investigate whether the risk of major postoperative CEA complications in smokers is higher than in non-smokers.

Methods: A systematic review was carried out of all studies published in the period 1994-2000 that reported the risk of stroke and stroke/death following CEA. Then we compared these risks for smokers and non-smokers. A pooled estimate of the operative odds ratio was obtained by Mantel-Haenzel meta-analysis.

Results: 213 papers reported the risks and risk factors associated with post-CEA complications. Only 10 papers were relevant to our study. The risk of stroke in the postoperative period was not different for smokers and non-smokers (Odd ratio (OR) 1.0, 95% confidence interval (95% CI 0.8-1.2). Similarly the risk of stroke and death was not different either for the two groups (OR 0.9, 95% CI 0.7-1.1).

Conclusions: Smoking does not increase the risk of major complications following CEA, namely stroke and death. There may be no benefits if patients stop smoking before CEA.

Matrix Metalloproteinase-1 and -12 Transcript Levels Correlate with Histopathological Characteristics and Manifestations of Carotid Atherosclerotic Plaques

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Background: Previous studies have shown that atherosclerotic lesions express a number of matrix matalloproteinases (MMPs). Here we investigated whether

transcript levels of MMP-1, -3, -7, -9 and -12 in carotid atherosclerotic plaques were correlated with histological features and clinical manifestations.

Patient Selection and Methods: Atherosclerotic plaques (n = 50) removed from patients undergoing carotid endarterectomy were classified histologically using a system proposed by Virmani et al, and MMP-1, -3, -7, -9 and -12 transcript levels in these tissues quantified by real-time reverse-transcriptase polymerase chain reaction.

Results: Compared with plaques with a thick fibrous cap, those with a thin cap had a 7.8 fold higher MMP-1 transcript level (p = 0.006), and 1.5 to 2.1 fold higher levels of MMP-3, -7 and -12 transcript levels were significantly increased in ruptured plaques compared with lesions without cap disruption (p = 0.001). MMP-9 transcript levels were similar among the different types of lesion. MMP-1 and -12 transcript levels were significantly higher in plaques from patients with amaurosis fugax, than in those from asymptomatic patients (p = 0.029 and p = 0.008 for MMP-1 and MMP-12, respectively), and those from patients with transient ischemic attacks (p = 0.046 and p = 0.008 respectively).

Conclusions: These data support a role of MMP-1 and -12 in determining atherosclerotic plaque stability.

LAPAROSCOPIC SURGERY

Laparoscopic Cardiomyotomy for Achalasia after Failed Balloon Dilatation

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Background: This study was designed to determine the feasibility and outcome of laparoscopic cardiomyotomy in patients with achalasia who have persistent or recurrent dysphagia following balloon dilatation.

Materials and Methods: Eight patients who had undergone a minimum of two (range, two to five) previous balloon dilatations underwent a single anterior cardiomyotomy extending from the gastroesophageal junction onto the esophagus proximally for 6 cm, five patients had a Dor's fundoplication. Patients were analyzed using pre- and postoperative DeMeester symptom scores for dysphagia, regurgitation and heartburn (0 = none, 3 = maximum) and esophageal manometry.

Results: Mean operative time was 168 minutes. Periesophagitis was noted in some patients but was rarely troublesome. Submucosal fibrosis was present in all patients and made dissection more difficult particularly around the cardioesophageal junction. Nevertheless, none of our patients had mucosal perforation that required repair by either laparoscopic suturing or open suturing. There were no subsequent postoperative complications. Median postoperative stay was 4 days (3-6 days). At 3-month's reassessment, there was a reduction in the median dysphagia score from 3 to 0, and also regurgitation score from 3 to 0. At last follow-up (median 22 months), one patient developed recurrent dyphagia (grade 2) which improved with dilatation. Overall success of the laparoscopic procedure was therefore 87.5%.

Conclusions: Laparoscopic cardiomyotomy provides good control of the symptoms of dysphagia and regurgitation without laparotomy incision. Although technically more difficult, the technique can be extended to those who have had previous balloon dilatation with complications and success rates are nearly similar to published results in patients who have not undergone previous dilatation.

Low Pressure versus Standard Pressure Pneumoperitoneum in Laparoscopic Cholecystectomy, A Prospective Randomized Clinical Trial

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Background: A post laparoscopic pain syndrome is well recognized in the gynecological literatures and is characterized by abdominal and particularly shoulder-tip pain 1 to 3 days after laparoscopy. The aim of this randomized clinical trial was to compare standard and low pressure pneumoperitoneum in patients undergoing laparoscopic cholecystectomy on the frequency and intensity of shoulder-tip pain.

Patients and Methods: One hundred and forty con-

secutive patients undergoing elective laparoscopic cholecystectomy for benign gallbladder disease were randomized prospectively into low pressure -7 mmHg (group A) and normal pressure -14 mmHg (group B) laparoscopic cholecystectomy groups. Postoperatively, the visual analog scale, shoulder tip or back pain, total analgesic required and length of postoperative hospital stay were recorded.

Results: There was no difference in demographic data such as age, sex and weight between two groups. There were no significant intra-operative or post-operative complications in either group. The incidence of shoulder-tip pain was significantly lower in group A than in Group B ($P < 0.055$) and length of postoperative stay was also significantly shorter in group A than in group B (1.14 VS 1.29, $P < 0.005$). There were no significant difference in visual analog scale and analgesic required in both groups.

Conclusions: Low pressure pneumoperitoneum is superior to standard pressure in terms of lower incidence of shoulder-tip pain and shorter postoperative hospitalization and should be recommended in laparoscopic cholecystectomy for elective uncomplicated cases.

Thirteen Cases of Endoscopic Transaxillary Thyroid Lobectomy: Preliminary Report of Using a Rigid Laparoscope

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Problem/Background: The use of endoscopic procedure for thyroid lobectomy in benigh solitary thyroid nodule has been developed rapidly and has been increasingly refined in recent years. The incidence of thyroid disease is markedly higher in women than in men and operations for these diseases result in a scar on the anterior neck that is exposed when open-necked clothing is worn. The early results showed that the procedures were technically feasible, safe and mainly provided promising cosmetic results, some showed a quicker recovery. But because of the technically demanding, most surgeons are reluctant to invest the time in mastering the procedure. Another main reason is the technology damanding, most of the published techniques are using the flexible laparoscope. The authors adopt to use the 30 degree rigid laparoscopes which are available in many surgical centers. Therefore the endoscopic thyroid lobectomy is more likely to be performed and become more popularized.

Objective: To evaluate the accessing view, feasibility and safety of using 30 degree rigid laparoscope for endoscopic transaxillary thyroid lobectomy in selected benigh solitary thyroid nodule.

Setting: Department of Surgery, Faculty of Medicine, Chulalongkorn University

Results: Thirteen cases underwent endoscopic transaxillary thyroid lobectomy. Flexible laparoscopes (4 Fujinon EL2-TF410, 5 Olympus LTF-V3) were used in 9 patients and rigid laparoscope (Olympus 5295 A 30O) in 4 patients. We used 4 incisions: 1.5 cm X I and 0.5 cm X III. Subcutaneous and subplatysmal operative space was created under direct vision. Then CO_2 insufflation was introduced at 4 mm Hg of pressure. The thyroidal vessels and the parenchyma of the gland were dissected and divided with harmonic scalpel (G 300, LCSC5) and commonly used laparoscopic instruments. The mean operative time was 170 mins (105-225); 173.13 (105-225) mins for flexible laparoscope and 161.67 mins (145-180) for rigid laparoscope. There was only one case in the flexible laparoscope group which required conversion due to the internal jugular vein injury. There was no recurrent laryngeal nerve injury, or subcutaneous emphysema. The patients were satisfied with the cosmetic results. On the basis of our experiences with these 13 patients, we believe that endoscopic thyroidectomy is feasible and safe for the resection of thyroid tumors and the use of rigid scope showed no difference in the accessing view, feasiblility, safety and the operative time.

Conclusions: The 30 degree laparoscopes which are available in many surgical centers provide excellent accessing view for the endoscopic transaxillary thyroid lobectomy. It is feasible, safe and comparable to the flexible laparoscopic techniques. This procedure will provide another surgical technique for the treatment of thyroid tumors, with maximized cosmetic effect.