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Abstracts
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Esophagus

Esophageal Resection for Esophageal Cancer: Songklanagarind Hospital Experience from 1999 to 2003

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Background: There have been previous review of morbidity and mortality of esophagectomy between 1982-1992 at Songklanagarind Hospital, a tertiary center in Southern of Thailand. The objective of this study was to compare the results in the recent years with previous report.

Methods: Retrospective study was carried out of all patients who underwent esophageal resection from 1999 to 2003. The morbidity and hospital mortality rate were analysed.

Results: Complete data was available for 111 patients. There were 105 cases of squamous cell carcinoma and 6 cases of adenocarcinoma. Male to female ratio amongst esophageal cancer patient was 3.2:1 with age ranged from 45-74 years (mean 62.6 years). Twenty-five percent of patients experienced post-operative pneumonia. Anastomosis leak was 6.3%. The hospital mortality rate was 5.4%, which is significantly different from previous study (10.0%).

Conclusion: The hospital mortality rate for esophageal resection has declined over the past 10 years.

Thoracoscopic and Laparoscopic Esophagectomy for Esophageal Cancer

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Objective: To assess our early experience outcomes after minimal invasive esophagectomy.

Background: Traditional esophagectomy may be associated with mortality, morbidity and lengthy recovery. Minimal invasive esophagectomy has the potential advantages of being a less traumatic procedure with an easier postoperative recovery and fewer wound and pulmonary complications.

Methods: A retrospective analysis of 14 patients who underwent thoracoscopic or laparoscopic esophagectomy was performed.

Results: There were 11 men and 3 women with a median age of 63 years (range 36-77). Indications for operation included esophageal cancer (n = 12), pyriform sinus cancer (n = 1) and neurilemmoma of the esophagus (n = 1). Thoracoscopic esophageal mobilizations were successfully completed in 11 patients and laparoscopic transhiatal esophagectomies were performed in 3 cases without the need for open surgery. Only one patient required a minithoracotomy with video-assisted thoracoscopic surgery due to adhesions. The median surgical time of surgery was 6 hr 20 min (range 4-8). The

median estimated blood loss during surgery was 500 mL (range 100-1,000). The median intensive care unit stay was 6 days (range 1-20) and average hospital stay was 26 days (range 13-46). There was no postoperative mortality. Postoperative complications developed in 7 patients (pneumonia 5, pleural effusion 4, wound infection 2, and anastomosis leakage 1).

Conclusions: Minimal invasive esophagectomy is a feasible approach that can be safely performed by surgeons with experience in that field. Given these results, we are now developing lymph node and periesophageal tissue dissection techniques to improve surgical oncological aims.

Esophageal Surgery: Experiences at Siriraj Hospital

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Background: Esophageal surgery is one of the most complicated surgeries involving thoracic cavity, abdomen and the neck region. The patients with esophageal cancer also present late in stage of disease, making complication rates for esophagectomy very high. In recent years, however, morbidity and mortality of esophageal surgery decrease due to refinement of surgical techniques and progress in perioperative care.

Patients and Methods: In this study, we examined the results of 65 cases of esophageal surgery operated during 2002-2005 at the Department of Surgery, Siriraj Hospital, Mahidol University. The esophagectomy for esophageal cancer was done with lymph node dissection in the mediastinum, the abdomen, and in selected cases in the neck region. We routinely anastomosed in the neck using gastric conduit when possible.

Results: Complications included anastomotic leakage (7.69%), recurrent laryngeal nerve paresis (4.61%), graft necrosis (1.54%), postoperative hemorrhage (1.54%) and chylothorax (1.54%). Two patients developed ARDS postoperatively. Mortality rate was 3.07%.

Conclusions: We concluded that esophageal surgery is safe and can be undertaken in most of the patients. However, serious complications can develop and intensive perioperative care with team approach is preferred.

Pharyngocolostomy for Total Corrosive Injury of the Esophagus

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Background: Corrosive esophageal injury is common in Thailand. Most injured patients suffered from ingestion of strong acid and alkali agents for suicidal attempts. Total corrosive injury of the esophagus is not common but poses difficult problems because the entire length of esophagus is injured; therefore the site of anastomosis is at the pharynx and sometimes laryngectomy has to be done. Colonic interposition with inappropriate correction results in dysphagia and aspiration from recurrent nerve paresis.

Patients and Methods: We examined the results of 13 cases of colonic interposition with pharyngocolostomy for totally injured esophagus during 2002-2005 at the Department of Surgery, Siriraj Hospital, Mahidol University. Right-sided colon was used in all cases.

Results: Twelve cases had excellent results with the patients resuming eating activity within the first month. Half of the cases needed postoperative dilatation of the anastomosis.

Conclusions: Colonic interposition with pharyngocolostomy is a safe technique for patients with totally injured esophagus and most of the patients can resume eating while laryngectomy is preserved.

Transthoracic Esophagectomy

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Introduction: Esophageal cancer has poor prognosis. However, today we have multimodality treatment of cancer i.e. surgery, chemotherapy and radiation. Surgery is the main treatment. Advanced techniques have been developed and transthoracic esophagectomy is one of the most successful techniques to treat esophageal cancer because of the direct visualization of tumor and lymph node during dissection. The technique of intraluminal stapler and intrathoracic anastomosis improves outcome with low morbidity and low mortality of esophageal cancer.

Objectives: The prospective study of esophageal cancer patients treated at Suratthani Hospital was carried out between October 2002 and September 2005. Morbidity, mortality and efficacy of transthoracic esophagectomy for esophageal cancer were analysed.

Patients and Methods: There were 81 cases of esophageal cancer, but 17 cases were excluded because of the contraindication to surgery. Sixty-four patients underwent surgery. They were 44 males and 20 females. In 18 patients, the tumor located at upper thoracic and 46 patients the tumor located at middle thoracic, lower thoracic, E-G junction and cardia. Because of the tumor

location, operative techniques were different. Three-phase esophagectomy was done for cancer located at upper thoracic (20-25 cm); and for tumor in the middle thoracic, lower thoracic, cardia and E-G junction (below 25 cm) lvor Lewis operation was performed.

Results: Complications developed in 18 cases (28.1%) and 5 cases (7.81%) died.

Conclusions: In this study, transthoracic esophagectomy was effective because the tumor and lymph nodes can be directly visualized.

Upper Gastrointestinal Tract

Advanced Gastric Carcinoma: Clinicopathological Profile in Young and Old Patients in a Tertiary Care Hospital in Western Nepal

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Introduction: Gastric carcinomas usually present with advanced stages and metastasis in developing countries. Their presence in surprisingly younger age may have poorer prognosis. The limited treatment options, poor survival, various difficulties and conditions peculiar to the region add to the problem.

Material and Methods: This is a retrospective analysis of case records of 128 operated patients (1999-2005) of advanced gastric cancers (M:F=3.3:1). They were grouped into age 40 years (n = 7), 40-70 years (n = 81) and >70 years (n = 40) and were evaluated for clinical presentation, site of growth, extent of disease, pathology, presence of metastasis, operative procedure, adjuvant treatment, follow-up and survival. Investigative modalities used were endoscopy, Ultrasonography and CT scan.

Results: 128 patients out of 162 of advanced gastric cancers were operated. Sites of growth were antral (n = 68) and proximal (n = 28 - total gastrectomy done). In irresectable/inoperable patients (n = 32) due to metastasis or local spread, palliative procedures were done. Six of seven (6/7) young patients of group I had proximal disease with aggressive presentation. Adjuvant treatment was given in 64% of the patients and 48% of these group were lost to follow-up. Two-year survival in the rest of the patients was 38%. Recurrences were seen in 10% of patients.

Conclusions: Curative resections are difficult. Refusal for treatment and in affordability of adjuvant therapy, unavailability of modern palliative methods, poor follow-up and residual limit were the causes of high recurrences and poor survival. Younger patients had more undifferentiated and aggressive cancers. We emphasize specially the presentation in younger patients as they represent the special class of patients who need to have an early diagnosis through endoscopy for any dyspeptic symptomatology.

Diagnosis of Helicobactor pylori by Re-used Pronto Dry Test

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Introduction: Clotest is widely accepted as rapid urease test to diagnose H. pylori infection. In 1999, Lee et al reported diagnosis of H. pylori infection with re-used Pronto Dry test with 98.6% sensitivity and 98.2% specificity. Nowadays we use new rapid urease test (Pronto Dry) instead of clotest because it could be kept in room temperature. There was no data available on re-used Pronto-Dry test in clinical use for diagnosis of H. pylori infection.

Objective: To determine sensitivity, specificity and accuracy of diagnosis of H. pylori in dyspepsia patients by re-used Pronto Dry test.

Design: Diagnostic cross-sectional study

Setting: Rajavithi Hospital

Methods: 202 patients with symptom of dyspepsia that needed diagnostic endoscopic procedure were enrolled in this study. After complete examination of duodenum and stomach, 3 pieces of gastric mucosa each from antrum and body were biopsied and randomly allocated for histology with immunohistochemistry, new Pronto Dry, re-used Pronto Dry. Results of all these tests, age, and sex were recorded.

Results: This study showed that sensitivity, specificity and accuracy of re-used Pronto Dry test were 61.70% (95% CI 47.29-74.70), 96.77% (95% CI 92.99-98.81) and 88.61% (95% CI 83.66-92.46) respectively. The kappa agreement between re-used Pronto Dry test and new Pronto Dry test was 0.63 (95%CI 0.51-0.74). Prevalence of functional dyspepsia was 7.9% and prevalence of H. pylori infection was 23%. There was no adverse event in this study.

Conclusions: Re-used Pronto Dry test could be used to diagnose H. pylori infection with intermediate sensitivity, and high specificity. Therefore, it is not recommended to be used for screening test for H. pylori infection.

Colorectal Surgery

Anatomical Appearance of Ileocecal Junction: Intussusception of Terminal Ileum into the Cecum

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Objective: To prove the hypothesis that the terminal ileum is intussuscepted into the wall of cecum creating the ileocecal junction, contrary to previous valvular concept that is widely believed.

Materials and Methods: This study based on gross and microscopic examinations of fresh specimens derived from colonic operations (right hemicolectomy or subtotal colectomy). Data compiled from observation and dissection of specimens of 7 patients were examined both gross and microscopic appearance of ileocecal junction.

Results: Intussusception of the terminal ileum was found in every specimen. However, the length of intussusception was different in each specimen.

Conclusions: Gross and microscopic appearance studies suggest that the terminal ileum is intussuscepted into the wall of cecum.

Key words: Ileocecal valve, Ileocecal junction, Intussusception

Anorectal Myectomy in Adult Hirschsprung's Disease

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Objectives: Adult Hirschsprung's disease is a rare and frequently misdiagnosed because of long-standing refractory constipation. Most of the cases are of short-segment diseases, so the clinical features may be different from those in children. Few successful surgical treatments have been used with different results and complications. The aim of this report was to evaluate the results of anorectal myectomy in adult Hirschsprung's disease.

Methods: All medical records of all cases from January 1st, 1997 to April 30th, 2006 were retrospectively reviewed. Histologic criteria for diagnosis included an increase in the number of cholinergic nerve fibers in the lamina propria, muscularis mucosae, and submucosa, and the absence of ganglia in the submucosa. The cut-point ages were fifteen years old or more.

Results: There were 7 patients that met the criteria. All patients had chronic constipation. Pathognomonic findings from contrast enema and anorectal manometry were found in only one case from each study. Anorectal myectomy was performed as the first operation in all patients. Four patients (57%) had good results, without complications and no further operation was needed up to last follow-up (2-62 months). Other two cases underwent subtotal and total colectomy after myectomy to achieve good results eventually. Only one patient had poor result even after several operations.

Conclusions: Anorectal myectomy, a simple and complication-free procedure, provides a satisfactory result for adult Hirschsprung's disease. It is worth being the first operation for this condition.

Treatment of Rectovaginal Fistula: A 5-Year Experience

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Purpose: Several procedures have been described for the management of rectovaginal fistula. Operative repair of rectovaginal fistulas should be tailored to the specific etiology, type of fistula, patients' physical status and anatomic defect. Although endorectal advancement flap provides successful fistula closure, but in case of radiation injury or injury associated with anal sphincter or perineal body injury, a more extensive repair is required. We present our 5-year experience with rectovaginal fistula repair.

Methods: A retrospective chart review was performed. Data collected included demographic detailed, etiology, location, size, operative procedure, morbidity and length of stay.

Results: From 2001-2005, 34 consecutive patients were treated for rectovaginal fistula. Fistula etiology included obstetrical injuries (7), radiation (8), radiation with recurrent gynecological cancer (8), CA rectum with preoperative chemoradiation (4), CA ovary (1), post LAR (4) and unknown etiology (2). Types of repair were endorectal flap (7), endovaginal flap (4) and one of these patients included gracilis muscle flap, sphincteroplasty (2), LAR with coloanal anastomosis with protective ileostomy (5), abdominoperineal resection (APR) (2), transsacral repair (2), colostomy alone (10), direct repair

(1), and tumor resection (1). There were no outcome differences between techniques.

Conclusions: All types of repair for rectovaginal fistula at our department can offer high rate of healing, thereby, choice of operative procedure should allow for good healing rate and optimal functional outcome. The choice of operative procedure should depend on etiology, type of fistula, associated anatomical defect and patients' physical status.

Closed Hemorrhoidectomy: A 6-Year Experience at King Chulalongkorn Memorial Hospital

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Purpose: To evaluate the results of closed hemorrhoidectomy in the Division of Colorectal Surgery at King Chulalongkorn Memorial Hospital.

Methods: This is a retrospective study from January 2000 to December 2005. The records of 1,352 patients who underwent closed hemorrhoidectomy were reviewed. A total of 1,184 (87.57%) patients with complete follow-up at 2 and 4 weeks after the operation were included in this study. Patients' profile and postoperative complications including bleeding, urinary retention and wound dehiscence were reviewed. Complications from urgent and elective hemorrhoidectomy were retrospectively compared by chi square test.

Results: From 1,184 patients, there were 559 males and 625 females and the median age was 46.3 _ 13.9 years (16-83 years). The operation was performed electively in 768 cases (64.9 %) and urgently in 416 cases (35.1 %). The number of hemorrhoidectomy at each operation was single in 21.7%, two in 37.2%, three in 30.6%, four in 9.3%, five in 1.2% and six in 0.1%. Postoperative bleeding occurred in 16 cases (1.4 %), 5 in urgent group and 11 in elective group. Two had significant bleeding requiring a reoperation. One hundred cases (8.4 %) required urinary catheterization for postoperative urinary retention, 31 in urgent group and 69 in elective group. At two-week follow-up, wound dehiscence was found in 23 patients (1.5 %), 9 in urgent group and 14 in elective group. Complete healing was achieved without further intervention at four weeks follow-up. No differences in all complications between urgent and elective hemorrhoidectomy were found.

Conclusions: The considerable experiences of closed hemorrhoidectomy at King Chulalongkorn Memorial Hospital's colorectal surgery division demonstrated low postoperative complications of bleeding, urinary retention and wound dehiscence. Urgent and elective closed hemorrhoidectomy showed no differences in complications.

A Comparison of Postoperative Complications between Urgent and Elective Hemorrhoidectomy in King Chulalongkorn Memorial Hospital

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Purpose: To compare hospital length of stay and post-operative complications between urgent and elective closed hemorrhoidectomy in the following aspects: urinary retention, post-operative bleeding and wound dehiscence at the 2nd and 4th weeks.

Research design: Retrospective, matched case-control study.

Methods: All patients with the diagnosis of hemorrhoid hospitalized at King Chulalongkorn Memorial Hospital, from January 2000 to December 2005, were identified through an International Classification of Disease-10 code (ICD-10) search of medical records. Patients with hemorrhoid undergoing urgent and elective hemorrhoidectomy during this period were matched and studied by retrospective chart review. Demographic data and number of hemorrhoidectomies of both groups were collected. Hospital length of stay and immediate post-operative complications i.e. bleeding, urinary retention and wound dehiscence at 2nd and 4th week were analyzed and compared by the McNemar test.

Results: There were 1,440 patients with the diagnosis of hemorrhoid hospitalized during the study period. At the 4th week after the operation, 1,184 patients with inclusion criteria came for follow-up completely. 710 patients could be matched by gender, age, number of hemorrhoids resected and operation in the same period. There were 30 (8.5%) and 25 (7.5%) patients with urinary retention in the urgent and the elective group respectively. In the urgent group, 5 patients (1.4%) had bleeding which ceased spontaneously. In the elective group, there were 3 patients (0.8%) with post-operative bleeding. An operation to stop bleeding was performed in one of them and the bleeding ceased spontaneously in the other two. Hospital length of stay was 1.21 ± 0.44 and 1.12 ± 0.32 days in the urgent and the elective group respectively. At the 2nd week, there were six wound dehiscences (1.7%) in each group. At the 4th week, no more new wound dehiscence was detected and all were completely healed. There was no significant difference in any complications between the two groups.

Conclusions: There was no difference in hospital length of stay, postoperative bleeding, urinary retention and wound dehiscence between urgent and elective hemorrhoidectomy cases.

Stapler Hemorrhoidectomy for Left-Handed Surgeon

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Background: Stapler hemorrhoidectomy or named PPH (procedure for prolapse and hemorrhoid) is the new technique for hemorrhoidectomy. The official PPH's multimedia demonstrates this technique in the form of graphic animation. Although it looks clear and simple but it does not make sense of the real surgery.

Objective: To demonstrate this technique in a hemorrhoid patient step by step. Some tips were guided for left-handed surgeons like the author.

Methods: A male grade III hemorrhoid patient was placed in lithotomy position and under spinal anesthesia for stapler hemorrhoidectomy. Beside video camera, the laparoscope was an additional camera for taking clearly close view during surgery. For left-handed surgeons, it was suggested to start the first purse string stitch at 1 o'clock and then advancing in the anticlockwise direction. In female patient, starting this first stitch will reduce the incidence of posterior wall vagina injury. Rotating of PPH's anoscope (that marked 3 cm distance) in the same direction for each stitch make purse string suture simple and in good proper plane.

Conclusions: Although this technique is more specified for left-handed surgeons but the right-handed ones can follow in the opposite direction. Under well-done technique, the result of PPH surgery was excellent and satisfactory.

Coloport: An Instrument for Intra-operative Colonic Lavage and Intra-operative Colonoscopy

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Background: Obstructed left-sided colonic carcinomas have traditionally been treated by staged operative procedures that have several disadvantages, which include multiple admissions and operations with prolonged hospital stay. The principal objection to primary resection and anastomosis of unprepared bowel is the high incident of leakage. Until Miur demonstrated the technique of intra-operative colonic lavage and primary anastomosis was a safe procedure, now this is accepted as a standard procedure for obstructed left-sided colon.

However, the problem of colonic cancer is more concerned about the synchronous lesion that may be present somewhere in proximity to the obstructed part which cannot be identified during the operation. The patient needs a post-operative colonoscopic examination to rule out the lesion. With bad luck, the patient may suffer a second operation if the synchronous lesion is found and cannot be removed via endoscope. To solve this problem, a COLOPORT, an instrument for intra-operative colonic lavage and intra-operative colonoscopy is invented.

Objective: To present an instrument for intra-operative colonic lavage and intra-operative colonoscopy

Materials and Methods: COLOPORT is a four-way tube, designed as a "T"-shape tube with another small tube joining at the head of tube at an angle of 30 degrees. To apply the instrument, the obstructed lesion is identified and dissected as in the conventional technique. A segment of colon that lay proximal to the obstructed point is selected and transversely incised. The head of the tube is placed into the lumen of the colon and ligated its both ends with cord tapes. The leg of tube is connected to a corrugated tube which uses as a draining tube. To irrigate the colon, an NG tube is inserted via the small tube, and maneuvered to reach the cecum. The water is rinsed and the content in the cecum is manually decompressed antegradely to the draining tube. When the content is clear, the NG tube is removed and an endoscope (gastroscope or colonoscope) is applied. After complete examination, the obstructed lesion is resected and primarily anastomosed as in the conventional technique.

Results: From June 6, 2001 to November 5, 2004, the instrument was applied in 15 patients who had lesions at left side of colons. Fourteen patients had colon and rectal cancer. One patient had obstruction by foreign body (santol seeds). None of the patients received pre-operative bowel preparation. The endoscope was successfully applied and the mucosa clearly visualized. No other abnormal lesion was detected. In two patients the primary anastomosis failed and the patients ended up with Hartmann's procedure. One patient developed colostomy necrosis and was re-operated for colostomy revision.

Conclusions: COLOPORT is a new device that makes intra-operative colonic lavage a convenient procedure. It also enables the surgeon to detect a synchronous lesion during the operation and this may help preventing the patient from a second operation.

Colonic Detoxification in General Surgical Outpatient: An Epidemiological Study

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Introduction: Colonic detoxification is claimed to be of substantial health benefits and has gain increasing

popularity in alternative medicine proponent while skeptic viewed as lack of evidence and potential for adverse effects by conventional medicine community. There are clinical reports and no refuting research of its effectiveness. Recently, exaggerated campaign moved it away without scientific study of efficacy. In this study, we sought to determine the epidemiologic data of colonic detoxification in general surgical outpatients.

Methods: Questionnaire consisting of items measuring demographic variables, method and resource of colonic detoxification, factors associated with the preference to undergo colonic detoxification, and results of colonic detoxification was administered to new patients in the general surgical outpatient department. Patients were classified as colorectal and non-colorectal group. The statistical difference of colonic detoxification between both groups was calculated with Chi-square test, p-value less than 0.05 was considered significant.

Results: 1,939 questionnaires were distributed and returned. The prevalence of colonic detoxification in general surgical outpatient is 91 per 1,939 patients (4.69%). Female patients had colonic detoxification much more than male patients (83.52 VS 16.48%). The mean age of patients who had colonic detoxification was 50.04 ±11.25 years (22-71 years). Coffee was the most commonly used substance for colonic detoxification (90.11%). Lemon juice, pure water, electrolyte fluid, and normal saline solution were used in 4.40%, 3.30%, 4.40%, and 1.10% respectively. The majority of patients performed the procedure themselves (73.63%). The frequency of procedures was 1-5 times per month in 26.37% of patients. Seventy percent of patients felt better, while 17.58% felt no change and 4.4% felt worse after the procedure. Patients who performed colonic detoxification had no significant colorectal problems more often than patients who did not. The risk ratio was 1.50 (95% CI, 0.88 to 2.57) and p = 0.137. The complication rates in colonic detoxification was 2.19% (rectal bleeding).

Conclusions: The recent medical attitude towards colonic detoxification is obscure from a lack of information about the historical debate on their safety and efficacy. This is the first study of colonic detoxification in Thai population. The result of this study suggests that colorectal diseases are not a preferential factor for the patient who performs colonic detoxification.

New "Sutureless" Technique of Ileostomy and Colostomy

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Objective: The objective is to prevent infection and subsequent complications of ileostomy and colostomy. The technique is based on delayed primary wound healing and established basic sciences.

Methods: Discovered by serendipity in 1986 during an ileostomy, the procedure was used for ileostomy and colostomy. Stomal end of bowel (small/large) was left obstructed with staples. Mesenteric corner was brought out of the skin opening. A cone was formed by lifting the anti-mesenteric corner of bowel as the apex of the stoma. Serosa was sutured circumferentially to opening in the rectus sheath starting at the mesenteric corner. This neutralized the pulling effect of peristalsis on mesenteric corner. Stoma was covered using an appliance with a transparent pouch. Obstructed stoma prevented wound contamination by feces. Postoperatively, the serosal surface was covered by angiogenesis, making the stomal wound refractory to infection. When peristalsis returned, depending on pathology, the bulging stoma was opened using electro-cautery as a bedside procedure. Mucosal cuff protrudes, everts on angiogenesis over a single layer of serosa, and fuses with dermis, completing natural maturation of stoma. Absence of sutures reduced tissue trauma and eliminated foreign body reaction resulting in better wound healing. This new procedure was named çDelayed-Primary Self-Maturation (DPSM)é.

Results: 17 Colostomies and 3 ileostomies were performed using DPSM. Infection in the stomal and main wounds and associated complications were prevented.

Conclusions: DPSM prevents infection and complications associated with ileostomy and colostomy operations. It is technically easier and more scientific than a conventional stoma and is recommended for all types of intestinal stomas.

Stapler Hemorrhoidectomy at Chao Phya Hospital

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Background: Conventional hemorrhoid surgery makes most hemorrhoid patients fear of anal wound pain and anal incontinence or stricture. Stapler hemorrhoidectomy or PPH (procedure for prolapse and hemorrhoid) is promoted to minimize these unsatisfactory events.

Objectives: To evaluate short-term results of these techniques regarding pain, bleeding, defecation and other complications.

Methods: The study focused on only the author's surgically fulfilled hemorrhoid patients at Chao Phya Hospital during 6 months from October 2005 to March 2006. There were 21 cases, aged between 24-81 years, average age was 44 years with male to female ratio of 4:3. The PPH surgery was performed only under spinal anesthesia and in lithotomy position in all situations of third degree, fourth degree and severe edematous prolapsed hemorrhoids. However, there were also associated rectoanal diseases at the time of surgery; such

as 2 cases of perianal abscess, 1 case of multiple rectoanal warts and 2 cases of rectal polyps that needed combined PPH and definitive surgery for each circumstances. Pain evaluation was graded as none, mild, moderate or severe depending on pain medication requirement. Rectal examination and proctoscopy were used to determine staple line, bleeding and wound healing. The follow-up was at one week and then once a week until without pain.

Results: Most patients were satisfied with the procedure. 80% had mild pain on operative day but looked well and were discharged the following day. Hospital stay was 1-3 days, averaged 1.2 days. Only one case had severe pain and needed many doses of morphine injection. This was because of bleeding and partial disruption of staple line. Fortunately, the disrupted wound healed within 2 weeks. The longest follow-up cases were 5 weeks. They were patients who had combined PPH with rectal polypectomy.

Conclusion: Under well-done technique, the result of PPH surgery was excellent and satisfactory. This procedure will be more popular if the cost of the instrument is lower.

Outcome of Familial Adenomatous Polyposis: A Retrospective Study at King Chulalongkorn Memorial Hospital (KCMH)

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Background: Familial adenomatous polyposis (FAP) is characterized by the presence of numerous colorectal adenomatous polyps which progress to colorectal cancer if left untreated. Following colorectal cancer, periampullary cancer and aggressive desmoid tumor are among the common causes of death. The purpose of this study is to describe the clinical outcomes of FAP patients who were treated at King Chulalongkorn Memorial Hospital (KCMH).

Material and Methods: The authors conducted a retrospective study of 31 FAP patients who were treated at KCMH between March 2000 and March 2006. Demographic data, family history, symptoms, extracolonic manifestations, operative procedures, pathologic findings and postoperative results were collected. The patients were divided into 2 groups according to colon pathology. Descriptive statistics were used for all patients. To compare between 2 groups with different colon pathology, student's T-test and Fisher's exact test were used. P value less than 0.05 was considered significant.

Results: Two patients were excluded from the study. The average age of 29 patients was 33.48 years with the sex ratio (male/female) of 0.93. Seventeen of 29 patients (58.6%) had family history of FAP. Mucous bloody stool was the most frequent symptom and most of the patients with this symptom (11/13) had colorectal cancer. Extracolonic manifestation was found in 17 of 29 patients. Gastroduodenal polyps and desmoid tumor were common extracolonic manifestations. The most common operative procedure was restorative proctocolectomy with ileal J pouch (RPC). Total proctocolectomy with permanent ileostomy was performed in 4 patients diagnosed with advanced rectal cancer. Postoperative morbidities were found in 15 patients. Wound infection and gut obstruction were the frequent complications. Functional outcomes of patients with RPC were good. Mean age of patients with colon cancer was more than mean age of patients without colon cancer. However, there was no significant difference between the 2 groups. The sex ratio and family history of FAP were not statistically different. No significant differences were found in surgical procedures and postoperative complications between the two groups. On the follow-up period, two patients in group I died of desmoid tumor and pancreatic cancer while 7 patients in group II died of metastatic colon cancer and 1 with desmoid tumor. However, no significant differences were observed among these groups.

Conclusions: Late diagnosis with advanced disease is a major detrimental factor. Early diagnosis, early treatment and good surveillance will provide good patients outcome.

Key words: Familial adenomatous polyposis, Colorectal cancer, Extracolonic manifestations, Gastroduodenal polyps, Desmoid tumor, Restorative proctocolectomy, Ileal J pouch.

Laparoscopic Anterior Resection: Cases Report

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Background: Previous study reported that becoming an accomplished laparoscopic surgeon would require performing at least 15 laparoscopic colectomies. The average surgeon would have to perform at least 25 hand-assisted cases and 50 totally laparoscopic cases. The mean operating time for accomplished surgeons was 130 minutes. Earlier series demonstrated learning curve effects with operative time up to a mean of 240 minutes. The advantages of laparoscopic approach included earlier return of bowel function, less pain and hospital stay reduction. Many studies found no differences in recurrence and survival levels. Laparoscopic colon resections are technically challenging surgical procedures.

Objectives: Although awaiting the final reports from large randomized trial and with advancing learning curves

and technology, the ease of operation has improved, leading to progression of laparoscopic colon resection. It requires advanced skill, thorough knowledge of gastrointestinal anatomy, and an ability to recognize structures from unusual angles and perspectives. It also requires the same principles of conventional procedures. The techniques of laparoscopic assisted, hand-assisted laparoscopic and totally laparoscopic anterior resections are advisable for the purpose of this paper.

Materials and Methods: We report four cases (2 females and 2 males) with sigmoid colon cancer, aged between 52-90 years, who underwent laparoscopic anterior resection. Two laparoscopic assisted, one hand-assisted laparoscopic, and one totally laparoscopic colectomies were performed.

Results: The operative time ranged 135-270 minutes with postoperative hospital stay from 6-12 days. No serious complications were detected.

Conclusions: We are certainly at an early stage in the evolution of laparoscopic colon surgery. In addition, it is important that we develop our experience and report in the time-honored fashion, through peer-reviewed journals, at scientific meetings, and in consensus panels. Laparoscopic anterior resection is one of the challenging techniques that every laparoscopic surgeon needs to practice.

Appendix

A New Demographically Targeted Application of the "MANTRELS" Principles in a District General Hospital Setting

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Background: The pre-operative diagnosis of appendicitis is usually established clinically. The original Alvarado score uses 8 criteria forming the acronym MANTRELS to facilitate objective diagnosis. It is recognised that the presentation of appendicitis varies widely amongst different demographic patient groups.

Objectives: 1) To quantify the differences in presentation of appendicitis in different demographic groups. 2) To determine whether the use of pairs of related criteria are superior to single criteria in the pre-operative diagnosis of appendicitis.

Methods: The population was subdivided into 4 demographic groups; adult male (16-60y), adult female (16-60y), child (<16y) and older person (>60y). The variables evaluated were anorexia, vomiting, anorexia or vomiting, rebound tenderness, guarding, rebound or guarding, raised WBC, raised CRP, raised WBC or CRP, fever, tachycardia and good localization of RIF tenderness. Thirty-nine consecutive appendicectomies over a six-week period were evaluated.

Results: The combined use of the variables anorexia and vomiting favoured a positive diagnosis in the paediatric group. The combined use of rebound tenderness and guarding favoured appendicitis in both the paediatric group and the adult male group. The combined use of WBC and CRP favoured a diagnosis of appendicitis in the adult male group. No other variables singly or in combination identified appendicitis better in any of the patient groups.

Conclusions: 1) The clinical and biochemical presentations of appendicitis differ amongst various demographic groups. 2) The quantification of features of appendicitis in pairs rather than singly is more useful in pre-operative diagnosis.

Further Studies: This study is being continued prospectively. It has hoped that a larger series will provide a concise algorithm that assists surgical decision-making in equivocal cases.

Role of Laparoscopy for the Patients with Uncertain Diagnosis of Appendicitis

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Background: Laparoscopic surgery has become a new standard approach for many surgical procedures such as cholecystectomy. Its major benefits are decreased postoperative pain, shorter hospital stay and better cosmetic results. Whereas laparoscopic appendectomy remains controversial because the open surgery has a small incision, a little more pain, and comparable length

of hospital stay. The problem of open approach is the high rate of negative appendectomy in patients with uncertain diagnosis.

Objective: To evaluate the benefit of laparoscopy in the patients with uncertain diagnosis of appendicitis at Ratchaburi Hospital.

Methods: Between June 2000 and January 2006, patients who had right lower quadrant abdominal pain with equivocal diagnosis of appendicitis were enrolled to the study. Laparoscopy was performed and laparoscopic appendectomy was done thereafter if the appendicitis was intra-operatively diagnosed. Pathological examination of appendices was achieved.

Results: Thirty patients were enrolled in this study (7 male, 23 female). The mean age was 35.3 years (male=51.3, range 28-62 and female=30.4, range 16-92). All male patients (100%) were finally diagnosed with appendicitis, including 5 acute and 2 ruptured appendicitis while only 52.2 % (12/23) of female patients had appendicitis. The majority of female patients who did not have appendicitis (9/11) had gynecologic condition i.e. pelvic inflammatory diseases (4), ruptured corpus luteal cyst (2), ovarian cyst (2) and tubo-ovarian abscess (1). The others had adhesion (1) and nonspecific abdominal pain (1). The mean operative time was 83.8 min (40-140). The conversion rate was 6.67 % (2/30) and wound infection rate was 3.33 % (1/30). The median length of hospital stay was 5 days (2-17).

Conclusions: The laparoscopic approach of appendectomy should be beneficial in female patients whose diagnosis of appendicitis is uncertain.

Ganglion Cell in Vermiform Appendix

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Background/Purpose: Absence of ganglion cells in the appendix is thought to correlate with aganglionosis of the distal intestinal tract. The aim of the study was to count and compare with numbers of ganglion cells found in vermiform appendices.

Methods: 132 appendectomy specimens were available for study. Group I: 5 total colonic aganglionosis (TCA); Group II: 12 Hirschsprung's disease (HSD); Group III: (control) 38 incidental appendectomy without HSD; Group IV: 77 appendicitis. Each specimen was examined randomly for ganglion cells.

Results: The number of ganglion cells in any given high power field (HPF) varied in all groups; Group I-0, Group II-1.03 (0-2.9), Group III-0.67 (0-2.4), Group IV-0.46 (0-1.8) cells/HPF. There was significant difference between the HSD group and the groups with TCA or appendicitis. There was no significant difference between the control group and the other groups. There was no significant difference between the appendicitis group and the TCA groups.

Conclusion: There was no significant difference between the control group and the other groups. Therefore, the appendix is not reliable for the identification of ganglion cells in suspected case of TCA.

Hepato-biliary-pancreatic Surgery

Laparoscopic Biliary Bypass for Distal Common Bile Duct Obstructions

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Background: Nowadays laparoscopic cholecystectomy is rapidly replacing open cholecystectomy as the procedure of choice in every country. The advanced laparoscopic procedures in the hepatobiliary system are being practiced by the laparoscopic surgeons. The relief of obstructed bile duct can usually be achieved by endoscopic sphincterotomy, but occasionally surgical drainage is still necessary. Indications for biliary bypass of the common bile duct stone obstructions are dilated common bile duct, multiple stones, intrahepatic stones, biliary tree packed with stones and stenosis of the papilla of Vater. Choledochoduodenostomy, choledocho-jejunostomy or sphincteroplasty can provide definitive treatment. Another indication for bypass of the biliary tract is malignant obstruction of the distal common bile duct by the unresectable tumor. Adenocarcinoma of the pancreatic head is the most common cause. Most of these

patients will be offered the chance of insertion of endoscopic stents; this is a reasonable initial approach. The surgical biliary bypass procedure reserved for those unable to be stented or where difficulty with the stent, and dislodgement or blockage occurred. A choice must be made between enteric bypass to the gallbladder or directly to the bile duct. In unselected patients undergoing bypass to the gallbladder, approximately 25 percent will require reoperation for subsequent jaundice caused by malignant encroachment, most often a result of low insertion of the cystic duct. This is avoided by preoperative or intraoperative imaging of the cystic duct and bypass directly to the bile duct for those patients seen to have low cystic duct insertion or partially or complete obstruction of the cystic duct. Morbidity related to laparoscopic surgery is minor, the ileus induced is minimal, and most stoma function within a few days. It is reasonable for second laparoscopic procedures to be reserved for those with subsequently developed further symptoms.

Objectives: The potential advantages of laparoscopic surgery for major organ surgery have been well documented, ie. a decreased hospital stay, less operative pain, and quicker return to normal function. With improved technique and experience with laparoscopic surgery, morbidity and mortality rates are similar to open operation. The following laparoscopic techniques, choledochoduodenostomy, cholecystojejunostomy and hand-assisted hepaticodochojejunostomy, may be useful for the interested surgeons who practice laparoscopic surgery.

Materials and Methods: Three patients, each with one impacted stones and two unresectable malignant obstructions of the distal common bile duct underwent laparoscopic biliary bypass procedures. The laparoscopic techniques, choledochoduodenostomy, cholecystojejunostomy and hand-assisted hepaticodochojejunostomy were performed.

Results: All patients were successfully managed by laparoscopic procedures. Neither perioperative complications nor postoperative problems were detected. The satisfactory improvements appeared on the follow-up schedules.

Conclusions: Most surgeons are not familiar with laparoscopic techniques, which can be used in every branch of surgery. In the future, every surgeon will need laparoscopic skills. Training by practicing themselves and following advisable techniques may be useful for improvement of the laparoscopic surgical skill. The more advanced laparoscopic procedures such as common bile duct exploration and biliary bypass procedures can be achieved in the hepatobiliary system than in simple cholecystectomy.

Laparoscopic CBD Exploration for Stones: Is it Worthwhile?

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Aim: To evaluate the current status of laparoscopic CBD exploration and compare it with endoscopic and open surgical approach.

Methods and Materials: The author started with open surgical exploration of CBD till 1976, thereafter switched to endoscopic technique, supplemented by mechanical lithotripsy and ESWL. With the advent of laparoscopic cholecystectomy and CBD exploration, the outcomes were analyzed. World literatures were reviewed.

Conclusions: Laparoscopic CBD exploration is considered an advanced laparoscopic procedure. At present, selected centers are doing it regularly. Majority of laparoscopic surgeons are reluctant/not confident to attempt this procedure. Only 20% of GB stones have concomitant CBD stones. Laparoscopic approach is not recommended if 1) CBD size is less than 10 mm. 2) in the presence of acute cholangitis 3) biliary pancreatitis and 4) intra hepatic stones.

A Same Day Approach for Choledocholithiasis Using LC after ERCP with Complete Stone Removal: Lessons from 13 Cases

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Background: The role and timing of endoscopic retrograde cholangiopancreatography (ERCP) in the patients with suspected choledocholithiasis remains a controversial subject. Therefore, we set out to collect prospective data of 13 patients who underwent preoperative ERCP and LC (ERCP/LC) on the same day (a same day approach). The aim of this study was to assess the feasibility of the same day approach for these patients.

Materials and Methods: We performed preoperative ERCP and LC as the same day approach in 13 patients from October 2005 to April 2006. The success rates, postoperative complications, overall operative time and length of hospital stay were analyzed.

Results: 12 patients (92.31%) underwent successful preoperative ERCP and then LC as the same day approach. One patient (7.69%) had to be converted to opened

cholecystectomy (OC) because of bleeding complication during laparoscopic surgery. There was no postoperative complication or mortality. The median operative time was 105 min. (range: 75-225 min.). The mean length of hospital stay was 4 days.

Conclusions: A same day approach can be performed safely in choledocholithiasis patients. The advantages of the approach include one-day treatment of cholelithiasis and choledocholithiasis, shorter hospital stay and elimination of the chance of recurrent choledocholithiasis.

Key words: laparoscopic cholecystectomy, ERCP, choledocholithiasis

Endoscopic Drainage of Pancreatic Pseudocyst

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Objective: Endoscopic drainage, either by transmural or transpapillary route, has become an acceptable alternative to surgical drainage of pancreatic pseudocysts. The aim of this study was to evaluate the results of transmural endoscopic drainage procedure at Ratchaburi Hospital, a regional referral center

Methods: A retrospective study was conducted. The clinical data was obtained for all patients with pancreatic pseudocysts managed with transmural endoscopic drainage from 2001 through 2006, inclusive. Outcome measures were successful drainage of the pseudocyst, complications and recurrence rates.

Results: Twelve patients were considered suitable for endoscopic transmural drainage. Successful drainage was achieved in all patients. Two patients had complications, one had cyst infection and one had migration of the stent. There were two early recurrences, all of them were successfully redrained endoscopically. The median follow-up was 13 months. No further recurrence of the pseudocyst was found.

Conclusions: Transmural endoscopic drainage provides an effective and safe minimally invasive approach to pancreatic pseudocyst management.

Role of Portal Vein Embolization in Hepatobiliary Malignancy

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Background: One of the dreadful complications of major liver resection, sometimes leading to fatality, is postoperative liver failure. Inadequate remnant liver volume is the major cause of this event. Preoperative portal vein embolization (PVE), proposed by Professor Makuuchi in 1990, is a well accepted procedure to increase future remnant liver volume and decrease the incidence of postoperative liver failure. This study described the author's experience of preoperative PVE at King Chulalongkorn Memorial Hospital since 2002.

Materials and Methods: The clinical data of 29 patients who underwent PVE were reviewed. The ratio of remnant liver volume and total liver volume (RLV/TLV) was calculated by CT volumetry before and after the procedure. The author performed PVE when RLV/TLV was less than 25% in normal liver and less than 40% in injured liver (cirrhosis, cholestasis, postchemotherapy, major liver resection combined with major intraabdominal surgery). The complications after PVE and hepatectomy were recorded.

Results: There were no deaths or complications after PVE. The mean growth of future remnant liver was 11%. Sixteen patients underwent liver resection (resectability rate 55.17%). There were 2 cases of postoperative hyperbilirubinemia (12.5%). The hospital mortality rate was 1/16 (6.25%) from post hepatic resection sepsis in the case of colorectal carcinoma not related to preoperative PVE.

Conclusions: Preoperative PVE is a useful and safe optional procedure to increase future remnant liver volume. It does not only reduce the postoperative liver failure but also increases the chance of curative resection. With the use of PVE, more patients with previously unresectable hepatobiliary malignancy due to inadequate remnant liver volume can benefit from resection surgery.

Key words: Portal vein embolization, Postoperative liver failure, Remnant liver volume

Management and Outcome of Severe Acute Pancreatitis

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Background: The treatment of severe acute pancreatitis (SAP) varies among several institutes. It has been evolving from routine surgical management to conservative management in the early stages. The surgical management plays a role in the later stages of the disease.

Purposes: The purpose of this study was to review the management and outcome of the patients with SAP at

King Chulalongkorn Memorial Hospital, Bangkok, Thailand.

Methods: Two hundred and ten patients with the diagnosis of acute pancreatitis at King Chulalongkorn Memorial Hospital, Bangkok, Thailand from December 2001 to April 2005 were studied by retrospective chart review.

Results: Forty patients had severe acute pancreatitis, 27 men and 13 women. Severe acute pancreatitis was most commonly caused by alcohol abuse (47.5%) and biliary tract disease (37.5%). Eighteen patients (45%) had pancreatic necrosis. Among them, seven patients (38.9%) had infected necrosis, and the rest had sterile necrosis. All patients with infected pancreatic necrosis underwent open pancreatic necrosectomy, and three of 7 died. Four of 11 patients with sterile necrosis died. The overall mortality was 25%.

Conclusions: Patients with SAP have high morbidity and mortality. The patients with infected pancreatic necrosis require surgical management, whereas those with sterile necrosis or SAP without local complication can be managed with conservative treatment and/or intervention. Post-operative complications might occur which require long-term follow-up.

Hepatopancreaticoduodenectomy for Cholangiocarcinoma

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Background/Aim: Hepatopancreaticoduodenectomy is an unusual radical surgery for advanced hepatobiliary tract cancer with high rates of post-operative complications and mortality. Most series of this extensive surgery were reported from Japan. The aim of this study was to demonstrate this procedure by DVD presentation.

Materials and Methods: From May 2001 to May 2006, more than 200 patients underwent hepatectomy by the author for benign and malignant hepatobiliary tract diseases. Of these, one hepatopancreaticoduodenectomy was performed in a 51-year-old female patient who presented with progressive jaundice for two weeks. CT scan revealed the large puffy enhancing polypoid mass in the common bile duct and common hepatic duct. The tumor extended to the hepatic duct confluence particularly into the left hepatic duct. Hepatopancreaticoduodenectomy was planned for enbloc resection of the tumor.

Results: Enbloc resection including left hepatectomy, caudate lobe resection, extrahepatic duct excision and pyloric preserving pancreaticoduodenectomy was performed. Intraoperative blood loss was 1,500 ml. Neither Pringle maneuver nor blood transfusion was required. The patient was discharged on post-operative day 10 without leakage of the anastomosis. Histopathology revealed well-differentiated cholangiocarcinoma.

Conclusions: For the advanced hepatobiliary tract cancer with invasion of intra and extrahepatic bile duct, hepatopancreaticoduodenectomy may be required for curative resection. With the progress and experience in hepatobiliary tract surgery and perioperative management, hepato-pancreatico-duodenectomy can be performed safely in selected cases.

Thymidylate Synthase Expression and Survival Correlation in Intrahepatic Cholangiocarcinoma

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Background: Thymidylate synthase (TS) is a key enzyme in the synthesis of pyrimidine in the de novo pathway of DNA synthesis and a major target of 5-fluorouracil (5-FU). There is a systematic review and meta-analysis of TS expression in colorectal cancer, tumors expressing high levels of TS appeared to have a poorer overall survival compared with tumor expressing low levels. However, the implications of TS regarding intrahepatic cholangiocarcinoma have not been reported.

Objectives: To study TS expression in intrahepatic cholangiocarcinoma and correlate with survival in patients who received surgery and adjuvant chemotherapy.

Material and Methods: We carried out a retrospective evaluation of TS expression in tumor tissue and its relation to survival from 84 patients who came to operation for intrahepatic cholangiocarcinoma (IHCC) in Srinakarind Hospital. We studied the enzyme expression by immunohistochemistry technique, then analyzed TS expression and correlated with survival by Kaplan-Meier log rank test.

Results: The expression of TS was divided into four categories: negative, positive 1+, 2+ and 3+. Forty had negative (47.62%), 18 had positive 1+ (21.43%), 15 had positive 2+ (17.86%) and 11 had positive 3+ (13.10%). When classified into high expression TS group (Pos. 3+ & 2+) and low expression TS group (Pos. 1+ & neg.) compared with survival, there were no differences in survival between these two groups. However, in patients

who received complete course of chemotherapy (14 of 84), the survival rate of the low expression TS group was significantly higher than high expression TS group.

Conclusions: TS expression in intrahepatic cholangiocarcinoma was 52.38%. Unfortunately, the expression of this enzyme cannot be used as the prognostic indicator. However, tumor expressing low level of TS appeared to have a better overall survival compared with tumor expressing high level in patients who received complete course of adjuvant chemotherapy. This may be used to predict the response of tumor to chemotherapy (5-FU). Prospective studies are needed.

Key words: Thymidylate Synthase, Survival, Intrahepatic cholangiocarcinoma

Randomized Controlled Trial of Mini-Laparoscopy and Conventional Laparoscopic Cholecystectomy

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Background: The advantages of mini-laparoscopic cholecystectomy (MLC) are still controversial. This study aims to evaluate its efficacy in term of pain, convenience and complications.

Methods: In a randomized controlled study, 60 patients were allocated to undergo either MLC using one 10-mm, one 5-mm and two 3 mm trocars or conventional laparoscopic cholecystectomy (CLC) using two 10-mm and two 5-mm trocars. The VAS score of pain after operation, operative time, hospital stay and complications were recorded.

Results: Data from 56 patients were analyzed. Four patients who were converted to open cholecystectomy were excluded. No intra-operative or major post-operative complications occurred in either group. The mean (+sd) post-operative pain score at 1-hr, 4-hr, 8-hr, 12-hr, 16-hr, 20-hr,24-hr and 48-hr period in MLC vs in CLC were 6.9 ± 2.7 vs 6.7 ± 2.9, 5.0 ± 2.8 vs 4.8 ±2.4, 4.6 ± 2.5 vs 4.6 ± 2.6, 3.9 ± 2.2 vs 4.2 ± 1.5, 4.0 ± 2.3 vs 3.8 ± 2.5, 2.9 ± 2.1 vs 3.3 ± 2.1, 2.4 ± 1.8 vs 2.7 ± 2.2, 1.3 ± 1.5 vs 1.6 ± 1.8 respectively. The pain scores between two groups were not significantly different. The average operative time of MLC vs CLC group were 50.8 ± 24.1 vs 47.8 ± 22.6 minutes (p-value = 0.63). The hospital stays were 3 ± 0.3 vs 3.2 ± 0.5 days (p-value = 0.07).

Conclusions: Mini-laparoscopic cholecystectomy was safe but it did not reduce pain and hospital stay.

Involvement of SDF1/CXCR4 Pathways in Cholangiocarcinoma Cell Invasion and Its Therapeutic Inhibition with Specific Signal Transduction Inhibitor

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Introduction: Stromal cell-derived factor (SDF)-1 and its cognate receptor (CXCR4) play an important role in chemotaxis of lymphocytes and in cancer cell metastasis. The present study evaluates the effect of SDF-1/CXCR4 and its downstream signaling molecules in cholangiocarcinoma cell lines.

Materials and Methods: The expression of CXCR4 and its signaling cascade were determined in RMCCA1 and HuCCA1 cholangiocarcinoma cell lines by Real-time PCR and Western blotting. Small interfering RNA (siRNA) specific for CXCR4 and their signal transduction inhibitors were used to suppress the stimulation of CXCR4. The proliferation and invasion assay were tested in these cholangiocarcinoma cells treated with SDF-1. For detection of actin polymerization, cholangiocarcinoma cells were stained with phalloidin and examined under confocal fluorescent microscope.

Statistical Analysis: The experiments were all performed in triplicate. Values were expressed as the mean and SD. The student's t-test was used for analysis of the cell proliferation and invasion assay. The p value of less than 0.05 was considered significant.

Results: Activation of CXCR4 with SDF-1 triggered the signaling via the ERK cascade mediated by sequential phosphorylation of MEK1/2 and MAPK and induction of cholangiocarcinoma cell invasion. The activation of CXCR4 signal cascades in cholangiocarcinoma cells was suppressed by treatment with small interfering RNA (siRNA) specific for CXCR4 or MEK inhibitor (U0126). Furthermore, treatment with siRNA specific for CXCR4 or MEK inhibitor U0126 inhibited cholangiocarcinoma cell invasion induced by SDF-1. For actin cytoskeleton study, SDF-1 treated cholangiocarcinoma cells displayed high levels of actin polymerization and a distinct pseudopodia formation. Treatment of cholangiocarcinoma cells with siRNA caused eradication

of actin polymerization.

Conclusions: These results indicated that SDF-1 and CXCR4 involved in the mechanism of cholangiocarcinoma cell invasion. It implies a potential role for the inhibition of CXCR4 signal cascades in the treatment of cholangiocarcinoma.

Key words: cholangiocarcinoma, CXCR4, SDF-1, migration, invasion, MEK1/2

Hernia

Surgical Outcomes of Hernioplasty for Incarcerated Inguinal Hernia

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Objective: In clinical practice, tissue swelling found in incarcerated inguinal hernia could tamper with mesh graft usage during emergency surgical repair. The aim of the study was to evaluate short and intermediate-term surgical outcomes of Lichtenstein tension-free hernioplasty for incarcerated inguinal hernia.

Materials and Methods: We carried out a retrospective study of patients with incarcerated inguinal hernia who underwent emergency Lichtenstein hernioplasty between September 2002 and August 2005 in the Department of Surgery, Faculty of Medicine, Siriraj Hospital. Early postoperative complications and surgical outcomes were analyzed.

Results: The nineteen consecutive patients were included. They were all men. The mean age was 57 years (range 19-83). Two postoperative complications (10.6%) were recognized. One was a subcutaneous fluid collection, which spontaneously resolved after two weeks. The other was a wound infection which was successfully treated by intravenous antibiotics. The mean length of hospital stay was 4 days (range 2-12). All patients had regular follow-up visits after discharge (mean 22 months, range 8-42). Clinical recurrence was detected in one patient (5.3%) who had untreated benign prostatic hypertrophy at 7 months after the operation.

Conclusion: Hernioplasty with prosthetic mesh can be successfully used not only in elective operation, but also in emergency operation for incarcerated inguinal hernia.

Breast

The Comparative Study between the Intraoperative Scrape Imprint Immunocytochemistry and Serial Section Combine H&E with Immunohistochemistry Technique for Detection of Breast Cancer Cell Metastasis in the Sentinel Lymph Node

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Background: The multidiscipline for the improvement of the accuracy of sentinel lymph node (SN) is beneficial for being less invasive procedure of breast cancer patients. The trend is to avoid axilla dissection which decreases the morbidity after operation. The intraoperative technique for the detection of tumor cells in SN by imprint immunocytochemistry (ICC) was investigated for use as a guide to avoid axillary dissection.

Objectives: This study was performed to compare the result of intraoperative scrape imprint ICC and the result of serial section stained by combined H&E staining and subsequently immunohistochemistry (IHC). The accuracy, sensitivity and specificity test were used as parameters.

Material and Methods: From April 2005 to March 2006, 33 cases of breast cancer patients were enrolled. Sentinel nodes were removed and sent to the pathologist for scrape imprint cytology. Anticytokeratin ICC was performed for the detection of metastatic cancer cell.

The sentinel lymph nodes were then routinely H&E stained. If no cancer was detected by the routine H&E study, the negative nodes were subject to 20-micron serial section and stained by anticytokeratin IHC subsequently to rule out false negative result. The axillary content of all cases was removed following the SN dissection for complete pathologic examination and backup of SN nodes examination results.

Results: Seventy-two sentinel nodes were removed from the 33 cases of operable breast cancer patients. The results of imprint cytology were compared with the results of serial section of SN which stained with the combined H & E and IHC method. The sensitivity of intraoperative SN imprint cytology ICC was 33.3%, the specificity was 94.4% and the accuracy rate was 66.7%. The positive predictive value of ICC was 83.3% and the negative predictive value was 63%.

Conclusions: The intraoperative SN imprint cytology by ICC was studied with 33.3% sensitivity, 66.7% accuracy and low negative predictive value when compared with serial section with combined H&E and IHC. The intraoperative SN imprint cytology by ICC alone is not effective enough to be used as a guide to avoid axillary lymph node dissection in operable breast cancer.

Comparative Study between Compressible Brassiere and Conventional Pressure Dressing for Seroma Prevention after Mastectomy in Breast Cancer

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Introduction: Seroma is a common complication after mastectomy in breast cancer. Its incidence is about 30-53%. Various techniques such as fibrin glue, sclerosing agents, dissection instruments and shoulder exercise did not show advantages. From previous study, conventional pressure dressing could not maintain the pressure at surgical wound. Then, newly developed compressible brassiere was selected for comparative study after pressure and acceptable testing.

Research Design: Randomized controlled trial

Materials and Methods: A total of 56 patients with stage I-III breast cancer who underwent modified radical mastectomy at Vajira Hospital from December 2004 to October 2005 were randomly allocated into 2 groups. Compressible brassiere and conventional pressure dressing after surgery were applied to 27 and 29 patients respectively. The surgeons did not know the type of dressing until finishing the operation. The demographic data, total volume of drainage, drainage period and occurrence of the seroma were recorded and compared between the two groups.

Results: The drainage volume in compressible brassiere group and conventional group was statistically not significantly different (774.3 ml and 725.5 ml, $p = 0.73$). The drainage period between two group was not different too (11.1 days and 9.3 days, $p = 0.19$). Seroma occurred in 6/27 and 4/29 cases ($p = 0.49$). Skin complications from adhesive dressing especially excoriation or bleb formation occurred in only conventional group (8/29).

Conclusions: The incidence of seroma after mastectomy in breast cancer was statistically not significantly different between compressible brassiere and conventional pressure dressing. However, surrounding skin complications from adhesive dressing were not found in compressible brassiere.

Trauma

EMS Rally, the Innovation for Pre-Hospital Care Personnel Development in Thailand

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Background: Pre-hospital care system in Thailand is rapidly developed in this decade. The most important factors in getting best care of critically ill patient in pre-hospital setting are qualified personnel and well-planned and well-practiced team approach.

Most of the training programs nowadays are held in the classroom with limited practice. In real situation, they find difficulty in applying their training and knowledge to practice in the field.

Objectives: EMS rally in Khon Kaen, established for the first time in Thailand, was an innovative, rapid,

most effective method in raising capacity of pre-hospital care personnel not only in their individual knowledge but in team practice, communication and lesson for the team leader. This activity was also an innovation in developing model for field practical evaluation. The activity was also shown big room for public education and public awareness emphasizing on the necessity of knowledge-based care in pre-hospital setting in Thailand at present time.

Methods: The project was run on behalf of 4 parties: Khon Kaen Regional Hospital, Srinakarin Hospital, Sirinthorn Health College Khon Kean and Khon Kaen Provincial Health Office. The budget for implementing this project was supported by National Health Security Office and Bureau for Emergency Medical Service, Ministry of Public Health. The evaluation model was based on ACLS, ATLS and PALS. The rally was set around the Kaen Nakorn public swamp in the middle of the city of Khon Kaen Municipality. There were 19 stations, seven of which were stations for practical examination, 12 of which were for relaxing and entertainment. The topics of question in practical examination stations were as follows: ACLS, Mass casualty, Motorcycle injury, Stab wound to the chest, Obstetric emergency, Spinal injury and Drowning.

Results: There were more than 200 people preparing for the contest. There were 19 teams, 10 persons in each team, total of 190 persons participated in this rally, one team from each province in the northeast and each team rotated through all stations. There were more than 200 observers from 40 provinces. It took 7 hours to complete the contest. After thorough evaluation, the team from Nakornrajsrima won the first prize, Surin the second and Udornthani the third.

Conclusions: EMS Rally seemed to be good and effective strategy to build up the capacity of pre- hospital care personnel. It was planned to hold this activity annually and extend it to every region of Thailand within this fiscal year. The concept of the activity could be well modified to several levels of pre-hospital care program such as the district EMS, etc.

Vascular Surgery

The First 12 Months of Vascular Service: An Iceberg Unveiled

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Purpose: To determine the magnitude of vascular problems in a tertiary care hospital in the first 12 months of service, from January 2005.

Methods: All vascular procedures performed in vascular surgery service in the first 12 months at Songklanagarind Hospital were reviewed. Vascular procedures performed by other specialty services were not included. Minor procedures such as debridement and skin graft were excluded from the study. All of the elective and emergency cases were categorized into organ-related procedures.

Results: There were 391 vascular procedures during this 12-month study period, 286 elective and 105 emergency procedures. The average procedures in the first 6-month was 27 per month, while it was 38 procedures per month in the last 6-month period. Of the 286 elective procedures, the three most common were dialysis access surgery (130), bypass procedures for peripheral arterial occlusive disease (PAD) (53), and surgery for varicose veins (46). Of the 105 emergency procedures, the three most common were procedures for acute arterial occlusion (43), vascular trauma (21), and ruptured abdominal aortic aneurysm (20). There were no procedures performed for carotid artery stenosis during this study period. There were 40 abdominal aortic aneurysms (AAA) procedures, half of which were for ruptured aneurysms. Endovascular treatment was performed in 10 cases, 6 in elective AAAs, and 4 in complicated aortic diseases (2 mycotic aortic aneurysms, 1 aorto-enteric fistula, and 1 aortic dissection). Of 53 procedures for PAD, 22 were distal bypass procedures, femoral or popliteal arteries to dorsalis pedis or posterior tibial arteries bypass.

Conclusions: There were a significant and growing number of vascular surgery patients. This data may reflect picture of health care problems in the country of which a separate vascular surgery service is needed to deal with growingly needs. Under-diagnosis of major health issues, such as carotid stenosis or asymptomatic AAA, is an important problem that needs to be addressed. Public education to prevent chronic renal failure is urgently needed for an alarmingly high number of chronic renal failure related procedures.

Endovascular Treatment for Aortic and Arterial Diseases: An Early Experience from Songklanagarind Hospital

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Purpose: To report our experience of treating aortic and arterial diseases with endovascular techniques.

Methods: The endovascular program at Songklanagarind Hospital has been initiated in September 2005. All patients treated with endovascular technique were reviewed.

Results: There were a total of 13 cases treated with endovascular technique between September 2005 and April 2006, 7 infrarenal abdominal aortic aneurysms (AAA), 2 mycotic aortic aneurysms, 1 aorto-enteric fistula, 1 aortic dissection and 2 peripheral vascular trauma. All procedures but one were performed in the angio-suite, under local anesthesia. Of the 7 AAA patients, there were 4 males and 3 females. The average age and AAA diameter were 71 years (range, 59-80) and 6.7 cm (range 5.5-10 cm), respectively. Devices used were 5 bifurcated AneuRx endograft and 2 aorto-uniiliac Talent endograft. There was no mortality; however, one patient developed myocardial infarction postoperatively. There was no endoleak or device migration at up to 6-month follow-up. The 2 mycotic aneurysm cases were treated with AneuRx endografts, one bifurcated and one straight. Severe abdominal pain, the major symptom leading the patient to the hospital, was dramatically improved after the procedure. Patients were on long-term antibiotics and showed no signs of graft infection at 6-month follow-up. Follow up CT scan showed significant improvement of inflammatory tissue around aorta compared to preoperative CT study. The aorto-enteric fistula patient presented with massive GI bleeding at 5 years after AAA repair. Aortogram demonstrated leaking at the proximal anastomotic area which was covered with a Talent endograft. The patient was doing well without recurrent bleeding at 3-month follow-up. One patient with multiple comorbidities had aortic dissection which was treated with Talent endograft with good result. However, this patient expired 2 months after the procedure due to multiple organ failure, not related to the procedure. Two patients with peripheral vascular trauma, carotid false aneurysm and femoral arteriovenous fistula, were treated with Viabahn stent-graft, under local anesthesia. Complete occlusions of the lesions were achieved.

Conclusions: We have reported our experience with endovascular treatment in a wide range of aortic and arterial diseases. Endovascular surgery is an attractive option particularly in high-risk patients or complicated aortic or arterial diseases.

A New Vascular Anastomosis Model: Relation between Outcome and Experience

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Background: Vascular anastomosis is a complex task that has multiple requisite skills. The process of learning requires practice and multiple attempts in order to integrate the multiple skills required. Existing training methods lack ability to objectively quantify surgical skill. In this study, we proposed and tested a new vascular anastomosis model for bench training. Satisfaction and outcome after practicing with the model were evaluated in the context of previous experience with the model and level of surgical training.

Materials and Methods: Surgical performance was assessed based on the new vascular anastomosis training model. Thirty-eight subjects were asked to (1) close the end of a 6-mm polytetrafluoroethylene (PTFE) graft, using a continuous suturing technique with 6-0 polypropylene; (2) perform end-to-end and (3) end-to-side anastomosis using the same materials and techniques. Tests for the effects of age, gender, levels of training and previous experience (with the vascular anastomosis training model) on the time to procedure completion were done within a linear statistical model framework with random effects for the individual trainee. The effects of the same variables on grades of leakage were assessed using an ordinal logistic regression model. Finally, effects on the diameter of the vascular anastomosis were tested using an ordinary linear regression model. Statistical significance was defined as a p-value of 0.05 or less.

Results: The mean age (sd) of all participants was 28.3 (2.1) years. More surgically experienced trainees did better in all measures of technical skill. Although there was a tendency for those with previous experience with the training model to do better in terms of the technical outcomes, these differences were not statistically significant. The only significant factor related to grades of leakage was the diameter of the anastomosis. A tenth of a millimeter increase in the anastomosis diameter was dramatically associated with lower grades of leakage. Multivariable analysis revealed that level of surgical training and types of anastomosis were the only significant factors related to completion time.

Conclusions: Our study confirmed the impact of increasing surgical experience on the technical skills of surgical trainees. Trainees with higher levels of training made fewer errors and completed the procedures faster than those with lower levels of training.

The Power Setting of Endovenous Microwave Ablation Use to Treat Varicose Vein (in Vitro Study)

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Introduction: Traditional treatment of great saphenous vein (GSV) reflux has been surgical removal of the GSV. Ablation of the vein by endovenous laser therapy (EVLT) and radiofrequency endovenous ablation (VNUS Medical Technologies) are newer procedures that are less invasive than surgery and have a lower complication rate. Microwave ablation is a sub-type of radiofrequency, which has the same characteristic as radiofrequency ablation. This study aims to find out the appropriate power setting of microwave ablation that will be applied for treating varicose vein and has no further damage to other surrounding tissue.

Material and Methods: Two patients who had symptom of varicose vein were enrolled in this study. Greater saphenous vein stripping was performed and used in this study. Six segments of greater saphenous veins (each segment 10 cm. long) were inserted into subcutaneous layer which adhered to pork muscle via the probe. The pork was divided into 6 groups and labeled as C (control), S (sham), 40, 50, 60 and 70. Heparinized blood was filled into the lumen of greater saphenous vein of every group. Microwave generator (MICROTAZE OT -110M) with catheter was used in this study. No adding procedure was done with labeled C. Endoluminal microwave catheter was applied with power generator 0, 40, 50, 60 and 70 watts to pieces of pork labeled S, 40, 50, 60 and 70 respectively. Every endoluminal microwave catheter was pulled back 0.5 cm. per 10 seconds. Each labeled piece of pork was sent to pathologist and sectioned into10 pieces.

Results: Normal venous walls were found in C and S groups. In 40-watt group, the burning depth to tunica adventitia was found in 5 of 10 pieces. In 50-watt group, the burning depth to tunica adventitia was found in 9 of 10 pieces with 20% extra luminal tissue damaged (mean distance 897 micron). In 60-watt group, the burning depth to tunica adventitia was found in all 10 pieces with 75% extra luminal tissue damaged (mean distance 843 micron). In 70-watt group, the burning depth to tunica adventitia was found in all 10 pieces with 51% extra luminal tissue damaged (mean distance 1207 micron).

Conclusions: The appropriate power setting of endovenous microwave ablation used to treat varicose vein is in the range of 50-60 watts with best result to make all layers venous tissue damage with minimal extraluminal tissue damage (just only 0.8 mm.)

Risk Factors Associated with Early Failure of Permanent Arteriovenostomy for Hemodialysis

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Introduction: Brescia-Cimino or snuffbox arteriovenous fistulas are standard surgical techniques for hemodialysis for more than 40 years. The early success rate is about 70-80%. There are many factors associated with early success that include preoperative and intraoperative factors.

Objective: This study is to evaluate preoperative and intraoperative factors in Thai people.

Research Design: Cross-sectional study.

Methods: Hospital and operative records of 51 patients with chronic renal failure who underwent Brescia-Cimino or snuffbox arteriovenous fistulas at the Department of Surgery, BMA Medical College and Vajira Hospital during April 2004 - March 2006 were retrospectively reviewed and analyzed.

Results: The mean age was 54.2 ± 12.7 years. 45.1% of patients were female and 76.5% had associated diseases (DM, hypertension or both).The early success rate was 76.5% (95%CI: 62.5-87.2) and was not associated with associated diseases (p-value = 0.52), arterial size (p=0.71), venous size (p = 0.38), fistulous size (p = 0.67). Younger age (p-value = 0.02), or venous compliance (p=0.04) were associated with early success rate of arteriovenostomy.

Conclusions: Associated disease, arterial size, venous size and fistulous size were not associated with early success rate of arterio-venostomy. Younger age and venous compliance were associated with early success rate of arteriovenostomy.

Cardiothoracic Surgery

Factors Associated with ICU Length of Stay after VSD Closure in Pediatric Patients

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Background: Ventricular septal defect (VSD), the common congenital heart problem in Thailand, is the anomaly of inter-ventricular septal formation leading to growth and development retardation by decreasing oxygenated blood via this internal cardiac left to right shunt. To prevent late consequences such as heart failure, pulmonary hypertension, VSD closure is usually considered. However, the surgery has high morbidity and mortality.

Objective: To identify the factors influencing the outcome of surgery in terms of ICU length of stay (ILOS), post-operative echocardiogram and patients' status after surgery.

Methods: The records of congenital VSD patients who had elective VSD closure at Songklanagarind Hospital from January 2002 to December 2005 were reviewed. The patients were divided into two groups according to ILOS, that of less or more than 48 hours postoperatively. Peri-operative data were compared between the two groups. The Fisher's Exact test and Mann Whitney U test were used for statistical analysis.

Results: Forty-six (32.6%) and 95 (67.4%) of total 141 VSD patients were in group I (ILOS less than 48 hrs) and in group II (ILOS more than 48 hrs) respectively. The significant statistical preoperative factors associated with ILOS of more than 48 hrs (Group II) were age ($p < 0.001$), size of VSD ($p < 0.001$), VSD gradient ($p < 0.001$), ASA classification III-IV ($p < 0.001$) and type of VSD ($p = 0.006$). The significant intra-operative factors were cardiopulmonary bypass time ($p=0.004$), aortic cross clamp time ($p=0.037$), dosage of midazolam ($p<0.001$), dosage of fentanyl ($p=0.02$) and acidosis ($p = 0.016$). The significant postoperative factors were intubation time ($p < 0.001$), time of dopamine usage ($p = 0.001$), time of dobutamine usage ($p = 0.001$), time of adrenaline usage ($p = 0.001$), post-operative complications, reoperative rates ($p = 0.034$), respiratory failure ($p<0.001$), infection ($p < 0.001$), low cardiac output state ($p = 0.001$), residual shunt ($p = 0.005$) and arrhythmia ($p = 0.018$). Multivariate analysis indicated that prolonged intubation time of more than 24 hours, ASA class III-IV and postoperative infection were significant risks for ILOS group of more than 48 hrs.

Conclusions: The factors correlated with ILOS after VSD closure in pediatric patients were prolonged intubation time of more than 24 hours, ASA class III-IV and postoperative infection.

Ramathibodi Intracoronary Shunt

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Background: The outcome of off-pump Coronary Artery Bypass Grafting (CABG) is highly dependent on surgical techniques. To overcome problems of intraoperative hemodynamic instability and avoid potential injury to coronary artery arising from occlusive technique, we have modified the strategy of performing distal anastomosis by using our home made intracoronary artery shunt.

Objectives: To modify and to invent our own homemade device from medical supplies in the operating room to use as an intracoronary shunt for off-pump CABG.

Methods: Ramathibodi Intracoronary Shunt or Rama ICS is the device to be inserted into the coronary artery via arteriotomy while performing distal anastomosis in off-pump CABG. Rama ICS is modified and invented from the material easily found in the operating room. The making process is simple, easy and not expensive. One set of the Rama ICS consists of silicone tube, midpoint attachment silk and titanium hemostatic clip. The sizes include four transverse diameters and three lengths. The sizes can be selected to match the diameter of each coronary artery. Rama shunt has its own characteristics that are different and potentially better than the commercially available shunt in the country.

Results: The homemade shunt had been successfully applied for clinical use in off-pump CABG. It improved the efficiency of surgery and was cost effective. The making process, characteristics and clinical results will be shown in VCD.

Conclusions: The shunt has been used at the Faculty of Medicine, Ramathibodi Hospital, for over 3 years in 250 patients including 1,000 distal anastomoses. It helps in saving operating cost and complies with the hospital policy to modify the existing medical supplies for optimum use and benefit.

Efficacy of Omental Flap Transposition for Deep Sternal Wound Infection with Mediastinitis after Cardiac Surgery

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Background: Deep sternal wound infection (DSWI) with mediastinitis is a severe complication of cardiac surgery when performed by median sternotomy and it results in increased morbidity, mortality, as well as a rise in hospital costs. The surgical treatment of DSWI with mediastinitis remains a challenge. Omental flap transposition has been reported to be an effective surgical procedure for the treatment of DSWI with mediastinitis.

Objective: To review and report our experience with omental flap transposition in the treatment of DSWI with mediastinitis with an emphasis on the efficacy and intermediate-term results.

Patients and Methods: Between August 2001 and March 2006, cardiac surgery had been performed on 1,118 patients by median sternotomy. DSWI with mediastinitis developed in 9 patients (0.8%). Seven consecutive patients (1 female, 6 males) with DSWI were treated using the omental flap transposition. The mean age was 65.7 ± 11.9 years (range, 42 to 79 years). Five of the seven patients (71.4%) underwent coronary artery bypass grafting. The operative strategies included debridement of the sternal wound with delayed or single-stage omental flap transposition. Methicillin-resistant Staphylococcus aureus developed in 4 patients (51.4%).

Results: There were no in-hospital or late deaths. There were no early or late flap failures. One patient received an additional rectus abdominis muscle flap 3 months after the omental flap for chronic subxyphoid fistula. No late epigastric hernia was seen in any of the patients.

Conclusions: From our experience, omental flap transposition is a reliable option and provides good early to intermediate outcomes in the treatment of DSWI with mediastinitis.

Postinfarction Ventricular Septal Aneurysm Rupture: A Case Report

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This is a case report of 68-year-old female suffering from postinfarction ventricular septal rupture. Surgeons decided to stabilize the patient for 6 weeks in order to lower the operative risk before performing the operation. The VSD was closed by using bovine pericardium patch and coronary bypass grafting was done simultaneously. The patient had satisfactory short-termed postoperative result.

Catamenial Pneumothorax: Report Case of Combined Apical Lung Bleb and Pleuroperitoneal Fistula

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Background: Catamenial pneumothorax, first presented by Maurer in 1958, is defined as spontaneous pneumothorax occurring within 72 hours before or after onset of menstruation. Although catamenial pneumothorax is the most common clinical manifestation of intrathoracic endometriosis, this latter condition is not universally identified in women with catamenial pneumothorax and cannot fully explain the recurrent and cyclical episodes of pneumothorax. Therefore, the etiology of this syndrome is unknown, although many theories have been proposed.

Materials and Methods: We describe a 43-year-old woman with 2 episodes of spontaneous right-sided pneumothorax in 2003 and 2005 and chest pain that occurred close to her menstrual periods. The patient still developed the third episode of right pneumothorax after previous medical pleurodesis through the intercostal approach or after hormonal suppressive therapy at another institution. The patient was referred to us for further evaluation. A video-assisted thoracoscopic inspection of the pleural cavity and diaphragm disclosed the right apical lung bleb buried in the dense apical adhesion and the presence of large pleuro-peritoneal fistula that was closed surgically at that time. Postoperatively, the patient discontinued hormonal suppressive therapy, and menstrual cycles became regular. Six months after surgery, the patient remains asymptomatic with no evidence of recurrence of pneumothorax.

Conclusion: This case supports recent reports that diaphragmatic defects are often present in patients with catamenial pneumothorax. Surgical exploration to inspect the diaphragm and to close all Identified defects should be performed in patients who continue to experience pneumothorax despite effective hormonal suppression.

Mitral Valve Repair and Duran Ring Implantation: Queen Sirikit Heart Center, Khon Kaen University Experience

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Patients and Methods: From April 2005 to February 2006, thirty-three patients (age range 9-74 years, average 49 ± 17) underwent mitral valve repair and ring implantation with Duran ring. Besides valve ring implantation, various surgical techniques were used to restore the mitral function depending on the hemodynamic and pathological findings that include segmental resection, chordal transfer, shortening chordae. Preoperative and postoperative assessments with echocardiography and chest roentgenography were used to check the quality of the procedure. The physical improvement was also evaluated.

Results: Of the 33 patients, there were no hospital deaths. One patient needed reoperation with valve replacement due to severe cardiac failure postoperatively. Other 32 patients were followed from 2-12 months with improved physical activity (71%). The chest roentgenograms revealed significant decrease in cardiothoracic ratio (0.59+.095 versus 0.56 ± 0.81). Residual mitral regurgitation was detected in 9 patients (28 %) with trivial regurgitation in 6, mild regurgitation in 2 and moderate regurgitation in one.

Conclusions: In mitral valve preservation operation, Duran ring implantation concomitant with surgical repair showed significant improvement in both roentgenographic findings and the quality of life.

Neurosurgery

Frameless Deep Brain Stimulation in Parkinson's Disease: the First Experience in Asia

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Background: Deep brain stimulation (DBS) of the subthalamic nucleus (STN) has been reported to be effective in alleviating the symptoms of advanced Parkinson's disease. The procedure, which requires accurate localization, is widely performed with a frame. The rigid fixation of the patient to the operating table can restrict mobility and make the patient uncomfortable. The introduction of image-guided surgical systems without the use of stereotactic frame for localization of intracranial targets over the past decade has become a commonplace. The new approach using frameless localization can be an alternative to frame-based stereotactic in functional neurosurgery.

Objective: To demonstrate the technique of frameless DBS surgery in Parkinson's disease

Materials and Methods: Between August 2005 and April 2006, 5 patients underwent DBS surgery with frameless technique. Three of these patients had advanced Parkinson's disease.

Results: All patients had satisfactory placement of bilateral DBS leads and had improvements of all Parkinsonian motor symptoms after surgery. There was no morbidity or mortality.

Conclusions: Frameless approach to DBS surgery in Parkinson's disease is an alternative to frame-based stereotactic surgery. The procedure allows time saving in the morning of surgery for frame placement and allows the patient free movement of the head. We report the first time of frameless DBS technique in Asia.

Hemiballism Successfully Treated by Pallidotomy

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Background and Objective: Hemiballism is a rare but the most violent form of movement disorder caused by subthalamic nucleus (STN) lesion. Fortunately, most cases have spontaneous remission. Ventro-oral, ventrointermedius thalamotomy and posteroventral pallidotomy have been sparsely reported to cure persistent hemiballism. This is the first report of persistent hemiballism induced by STN deep brain stimulation

(DBS) successfully treated by pallidotomy.

Materials and Methods: Stimulation-induced dyskinesia was common among our 35 cases of Parkinson's disease treated by STN-DBS. Most cases manifested as chorea and disappeared after levodopa reduction. However, one case manifested as hemiballism (2.85%). This was a 40 year-old male with young onset Parkinson's disease. During operation, the optimal STN was found by one tract of microelectrode recording (MER). Intraoperative microstimulation and macrostimulation by DBS lead showed satisfactory clinical improvements without adverse effects. Postoperative images revealed ideal lead position and no hemorrhage. However, the left STN could not be programmed after the operation. Low voltage stimulation produced violent right hemiballism. Though very slow voltage increment, lead contacts change and long wait for ten months, the violent hemiballism had been persisting. Thus posteroventrolateral pallidotomy was decided in order to suppress the hemiballism and able to turn the left STN-DBS on. Direct targeting at globus pallidus interna (Gpi) was planned by inversion recovery MRI. The final target was refined by MER to identify motor subterritory of Gpi and macrostimulation by recording electrode along with radiofrequency thermocouple electrode. Ablation up to 75 degree Celsius for 60 minutes spanning the whole length of Gpi was performed.

Results: MER of striatum, globus pallidus externa and interna showed typical pattern of Parkinson's diseases. Intraoperative high frequency stimulations and thermal ablation at the ventral Gpi could induce hemiballism. However, it occurred briefly and disappeared shortly after the operation. The left STN-DBS could be turned on to high voltage without any evidence of hemiballism. There were no cognitive, capsular or optic adverse effects after the pallidotomy.

Conclusions: Hemiballism induced by STN-DBS was rare. All previous reports showed spontaneous remission by delay and slow voltage increment. This is the first report of persistent hemiballism successfully cured by pallidotomy. It gives insight as an evidence to support lesioning mechanism of DBS.

Deep Brain Stimulation for General Dystonia

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Background and Objective: Global reports of deep brain stimulation (DBS) for general dystonia are sparse. This is the first and largest series in Southeast Asia. Clinical and technical results are reported.

Materials and Methods: Seven patients with general dystonia were treated by globus pallidus interna (Gpi) DBS. There were one case of primary general dystonia and six cases of secondary general dystonia, of which three were secondary from cerebral palsy, two from structural lesion at midbrain and putamen, and one from head injury. Direct targeting at posteroventrolateral Gpi was planned by inversion recovery MRI. Final targets were refined by microelectrode recording (MER) and macrostimulation by recording electrode and DBS lead. Five patients with very severe symptoms were operated under general anesthesia.

Results: 1) Primary general dystonia improved gradually and significantly. 2) Secondary general dystonia improved variably ranging from significant improvement to no improvement. Patients with phasic mobile dystonia improved faster and better than tonic postural dystonia. All three secondary dystonia from cerebral palsy failed to improve. 3) Pain responded disproportionately with dystonic improvement. Those with modest or no motor improvement still reported pain relief. 4) Anesthesia adversely suppressed MER of recording nuclei and optic tract. 5) MER of striatum, globus pallidus externa (Gpe) and Gpi in dystonia did not have specific firing patterns, being varied by etiology and depth of anesthesia, and were different from Parkinson's disease. The striatum was more active. Gpe and dorsal Gpi were much alike having moderate frequency, irregular firing and pausing pattern. Ventral Gpi was more active than dorsal Gpi having higher frequency and larger amplitude firing. 6) Under general anesthesia, detection of capsular threshold by macrostimulation was unreliable or not possible.

Conclusions: 1) As a syndrome of various etiologies, dystonia had diverse surgical outcomes. Primary general dystonia improved well and secondary dystonia was less conclusive. Phasic mobile type might be a good predictive factor and dystonia from cerebral palsy was a poor surgical candidate. 2) Gpi-DBS modulated pain perception by other unclear mechanisms in addition to decrease muscular contraction. 3) Lack of specific MER pattern of Gpe and Gpi by etiology and anesthesia, identification of border cell, pallidal lamina and ansa lentricularis were more useful to define the target. 4) Under general anesthesia, information from macrostimulation was lost so multiple tracts of MER to fully map Gpi and its borders were needed to ensure no capsular side effects.

Procedure Solution of Subthalamic Nucleus Targeting

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Background and Objective: There is no consensus for one best technique of subthalamic nucleus (STN) targeting. This report shows our perspectives learned from 50 cases of movement disorder surgery and over 100 tracts of microelectrode recording (MER).

Materials and Methods: Fifty patients of various movement disorders were operated upon, forty-one of which were Parkinson's disease and thirty-five were treated by bilateral STN deep brain stimulation (DBS). Direct targeting at posterolateral STN was planned by T2W MRI. Final target was refined by MER to identify motor subterritory of STN and macrostimulation by DBS lead. In addition, microstimulation was also done in the earlier cases and was replaced by macrostimulation by recording electrode in the later cases of the series.

Results: 1) One tract of MER per side could identify the optimal target in most cases. Bilateral procedure and pulse generator implantation could be achieved mostly within 5 hours. 2) Either too short STN or long STN with capsular side effect were the most common problems encountered. 3) Long STN did not always guarantee no adverse effects and needed to confirm by some kinds of electrical stimulation. Recently we favored macrostimulation by recording electrode over microstimulation. Volume of microstimulation was much smaller than that of macrostimulation by DBS lead and we ever encountered situations those capsular side effect induced by DBS lead could not be detected by microstimulation. In these cases, stunt effect produced by the large DBS lead made next MER tracts problematic. In contrast, macrostimulation by recording electrode had comparable effect with macrostimulation by DBS lead. Clinical improvements and adverse effects were more accurately predicted before DBS lead insertion. Stunt effect produced by small recording electrode was minimal and next tracts of MER were still possible. 4) When the first tract of MER was suboptimal, information analyzed from stereotactic atlas, overlay mapping, macrostimulation by recording electrode, somatotrophy of movement related cells and error from the second tract (if happened) guided where the next tract should be. We developed algorithms guiding how to place the next tract and unusually needed for more than two tracts per side. 5) There was one case of deep small hemorrhage without permanent neurological deficit. Bleeding risk was 1.4% per side of STN procedure.

Conclusion: Direct STN targeting by T2W MRI, sequential MER and macrostimulation by recording electrode plus DBS lead can effectively, quickly and safely define the optimal targets.

Pediatric Surgery

Pull-Through Operation for Hirchsprung's Disease: What is the Most Suitable Technique in a Provincial Hospital?

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Background: Hirchsprung's disease is a common cause of neonatal intestinal obstruction. Many operative techniques were developed to treat this disease. What is the most suitable technique, when there is limitation of personnel and financial resources in a provincial hospital?

Objective: To review the experience of one surgeon in the treatment of Hirchsprung's disease with Duhamel, Soave and transanal endorectal pull-through techniques in Maharat Nakorn Sri Thammarat Hospital.

Materials and Methods: The medical records of all Hirchsprung's patients treated with pull through operation at Maharat Nakorn Sri Thammarat Hospital from June 1, 2003 to April 30, 2006 were reviewed and analysed.

Results: There were 24 boys and 7 girls with age ranging from 30 days to 16 years. The diagnosis was made by barium enema in twenty-five patients and tissue pathology in six patients. The aganglionic segments included short segment (26 patients), long segment (3 patients) and total colonic aganglionosis (2 patients). Eight patients were treated with Duhamel's technique, twelve patients with Soave's technique and eleven patients with transanal endorectal pull-through technique. Three

patients had enterocolitis (2 after transanal and one after Soave procedure) and one patient had cuff abscess in the postoperative period. Late complications developed in ten patients in Soave's technique (83%), four patients in Duhamel's technique (50%) and two patients in transanal technique (18.2%). One patient died from enterocolitis with sepsis.

Conclusions: The choice of pull-through operation depends on the patient's condition and the available medical team. Transanal endorectal pull-though operation is a safe and effective technique for patients in provincial hospital.

Intussusception at Songklanagarind Hospital

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Introduction: Management of pediatric intussusception has changed from operative to non-operative technique over the last decades. Ultrasonography has been accepted as an accurate diagnostic tool and pneumatic reduction has been widely used for intussusception reduction.

Material and Methods: To review the experience at Songklanagarind Hospital in the management of children with this condition, medical records of 62 consecutive cases admitted between 1998 and 2005 were studied.

Results: Most cases were under 1 year of age, with peak incidence at 5 months. Vomiting and bloody stool were the most common presenting symptoms, being found in 79 % of the patients. Abdominal pain and palpable mass were found in 75% and 41% of the case respectively. Ninety percent of the patients were diagnosed by ultrasonography. The success rate of pneumatic reduction was 71.6 %

Conclusions: Recent management of intussusception at Songklanagarind Hospital has changed from operative to non-operative technique. Pneumatic reduction was used for intussusception reduction in most of cases with high success rate.

Surgical Abdominal Mass in Children: A 6-Year Experience

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Background: Abdominal mass is one of common problems that bring medical attention to patients and parents. It is a challenging condition for surgeons.

Objective: The purpose of this study was to analyze our experience with surgical abdominal mass at a single institute in a 6-year period.

Materials and Methods: A retrospective study was designed for analysis of children with abdominal mass who underwent surgical management between January1997 and December 2002. Medical records of these patients were reviewed focusing at the incidence, operative findings and pathological reports based on gender and age group.

Results: Three hundred and forty two patients were operated during this period. One hundred and sixty eight were male and 172 were female (male:female = 1:1). Age at the diagnosis ranged from 2 days to 14 years (average 3.42 years). Two hundred and sixty one patients (76%) were below 5 years. Hydronephrosis was the most common cause of abdominal masses in all age groups (66 cases or 19%). Wilms' tumor, choledochal cyst, neuroblastoma and teratoma were noted in about 12%, 11%, 10% and 9% of cases, respectively. Uretero-pelvic junction (UPJ) obstruction was found to be the major cause of hydronephrosis. More than 50% of all abdominal masses in this study were neoplasm in nature and 155 cases (45%) were malignant. Wilms' tumor was the most common malignancy. Overall, there was male predominance in children with surgical abdominal mass below 5 years of age, but female predominance was noticed in older children.

Conclusions: Experience from the present study revealed that the numbers of children with abdominal masses are rising yearly. Until promising treatment could be carried out, abdominal mass will still be one of the common problems in pediatric surgery.

Cystic Partially Differentiated Nephroblastoma: A Rare Differentiated Variant of Wilm's Tumor

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Cystic partially differentiated nephroblastoma (CPDN) is a rare variant of Wilm's tumor (Nephroblastoma). It is an unusual neoplasm with a well-differentiated cystic lesion of the kidney.

We reported a 4-month-old boy presented with an asymptomatic left flank mass. The abdominal ultrasonography and CT scan showed multiseptae, cystic mass arising from the lower pole of the left kidney.

Laboratory studies were within normal limit. There was no evidence of metastasis found from other investigations. He underwent exploratory laparotomy and a left nephrectomy was performed. The section revealed a cystic tumor composed of multiple cysts lined by cuboidal and hobnailed cells. The septa was composed of predominantly fibrous tissue and molded into the cystic spaces. A small foci of blastema was found and abortive tubules that lacked the proliferative activity were present in the septa. No extension to renal capsule and perinephric lymph nodes was seen. The diagnosis was CPDN. The post-operative course was uneventful. Oncologists suggested no further chemotherapy. The patient has been doing well.

Renoduodenal Fistula Due to Actinomycosis Infection: A Case Report with Review of Literatures

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Objectives: To demonstrate the rare complication of renal actinomycosis and review the historical reported cases to find out common presentation, pathogenesis and appropriate management.

Materials and Methods: The reported cases were reviewed in the Medline searching for abdominal, actinomycosis, renal, renoduodenal, duodenorenal fistula case, and reports. The results showed 60 cases of renal actinomycosis with 2 cases of renoduodenal fistula reported previously. Studying how to diagnose and confirm this condition and its complications, in comparison to our case may lead to the effective and successful treatment.

Results: A 12-year-old girl was referred from another medical center. She had suffered for 3 months with right flank pain, low-grade fever and night sweating. Her ultrasonography and computerized tomography showed a right renal mass, invading adjacent tissue and liver. Histological diagnosis of ultrasound-guided needle biopsy showed a pseudotumor and she was referred for further management. Exploratory laparotomy was planned because of the uncertain diagnosis. Abdominal exploration revealed a right renal mass with perinephric necrotic collection extended into the second part of duodenum as a renoduodenal fistula. A small amount of necrotic tissue was sent for frozen sections and the result showed actinomycosis. Radical right nephrectomy with primary repair of the duodenal defect was performed. The final diagnosis was judged to be renoduodenal fistula, a rare complication of renal actinomycosis. According to the literature review, in most cases, a tumor, an abscess, or tuberculosis is also suspected and the final diagnosis is left to the pathological examination. Therefore, tissue diagnosis is the most important factor for this specific infection because medical treatment could be successful without any operation if there are no associated complications.

Conclusions: Awareness of the problem by physicians is the initial key to a successful treatment. Tissue diagnosis is the most important factor for this specific infection because long-term medication can cure this lesion without any operation. Surgery is expected to be only an adjunctive procedure especially when complications occur. Due to the rarity of this complication, future management guidelines may require more case-collections to obtain more experience.

Biliary Atresia Type III with Cystic Structure Mimicking Correctable Biliary Atresia or Choledochal Cyst: A Report of Two Cases

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Biliary atresia constitutes a serious problem in early state of infancy with cholestasis. Conventional classification falls into 3 main types: type I, atresia of common bile duct; type II, atresia of hepatic duct; and type III, atresia of porta hepatis. We report 2 unusual cases of biliary atresia type III with true cystic structures which might be mistaken as correctable biliary atresia or choledochal cyst.

A rare variant based on morphologic classification of biliary atresia has been demonstrated. White bile in the gallbladder or in extrahepatic cyst is an important finding. Awareness of this type of biliary atresia (atresia of porta-hepatis with cystic structure of common hepatic duct or common bile duct) may facilitate the surgeons during dissection of hepatoduodenal ligament in patients with suspected biliary atresia.

Plastic and Reconstructive Surgery

Various Perforator Flaps in Leprosy Patients

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Since the introduction of perforator flap in 1980s, the concept has evolved constantly with the introduction of new perforator flaps. Soft tissue defects were the prominent features in leprosy patients especially in lower extremity area. We illustrate the multipurpose use of perforator flaps such as deep inferior epigastric artery perforator flap (DIEP), anterolateral thigh perforator flap (ALTP), superior gluteal artery perforator flap (SGAP), thoracodorsal artery perforator flap (TAP) and deep circumflex iliac artery perforator flap (DCIAP) in such defects with satisfactory results.

In conclusion, perforator flap is a versatile flap and is the state of the art in microvascular surgery with less donor site morbidity but requires more learning experience.

Anatomy of Skin Paddle Flap Supplied by Septocutaneous Perforator of Radial Artery

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Background: Radial forearm flap has been used for wound coverage especially ones with exposed joints and/or tendons. This flap sacrifices main radial artery that occasionally is the main blood supply of the forearm and the hand. The aim of this study was to analyze the anatomy of septocutaneous perforators of radial artery and its skin paddle. A perforator flap based on reversed radial artery has been used for coverage of small complex wound of distal forearm and hand by preservation of main radial artery.

Materials and Methods: A prospective study included five fresh cadavers (10 samples). Dissection of the main radial artery and its perforator branches near the wrist (occlusion of main radial artery and injection with methylene blue). The number, size of perforators and the size of skin paddle supplied by perforator branches of radial artery were recorded.

Results: The anatomical septocutaneous perforators of radial artery were found at 3-5 cm. from radial styloid process, with diameter about 0.5-1 mm, 1-2 branches and about 4 x 6 cm. diameter of skin paddle.

Conclusions: The distal perforator(s) of radial artery can perfuse about 4 x 6 cm. diameter of skin paddle. This small perforator flap may be used as an island flap for coverage of small complex wound or defect of distal forearm and hand. The benefits of this flap are 1) preservation of the main radial artery and 2) low donor site morbidity.

Timing of Surgery for Facial Plexiform Neurofibromatosis: The Chang Gung Memorial Hospital Experience, 1981-2005

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Objective: To determine if the age at which surgery is first performed will effect the progression of the disease and to identify age group at which surgery would have the best benefit.

Methods: A retrospective review of 50 patients with facial plexiform neurofibroma who had been operated over a 24-year period at a single craniofacial center. One hundred and thirty procedures were performed in total on these 50 patients. The average time interval between first and second surgery and the number of operations performed were collected. Patients were divided into three groups according to the age of the first operation; <10, 10-19, >19 years old. ANOVA and Chi-square tests were used to analyze the relationship of age groups to intervals between surgeries and to the number of operations.

Results: 44% of the patients underwent single operation. The mean operations per patient were 2.6. The mean surgical free interval was 3.52 years. The mean operations of group I, II, and III were 2.53, 3.21, and 2.17 respectively. The mean surgical free intervals of each study group were 3.75, 3, and 3.9 years respectively. No statistical significant difference between each group in those parameters was found.

Conclusions: Patients with facial plexiform neurofibroma suffer from either cosmetic or functional deformities. Most lesions could not be completely excised. We can conclude that the age of the first operation did

not affect the progression of the disease and hence surgery can be conducted at any age.

Carboxymethylchitosan, Alginate and Tulle Gauze Wound Dressings: A Comparative Study in the Treatment of Partial Thickness Wound

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Carboxymethylchitosan was copolymer that derived from chitin. It had shown, in animal model and pathological study, its potential in having efficacy as an accelerator of wound healing. This study involved prospective randomized controlled clinical trial to compare healing and pain at split-thickness skin graft donor sites dressed with traditional tulle gauze, alginate membrane and carboxymethylchitosan sponge. The results showed that carboxymethylchitosan and alginate facilitated more rapid wound re-epithelialization than tulle gauze, however, there was no difference in healing rate between carboxymethylchitosan and alginate groups. In addition, pain scores were rapidly decreased in carboxymethylchitosan and alginate groups.

Key word: chitosan, carboxymethylchitosan, wound healing, wound dressing, donor site dressing

Comparative Study of End-to-Side Neurorrhaphy With and Without Opening Window of Epineurium

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Background: The innovation of microsurgery has revolutionized the field of plastic and reconstructive surgery. The technique of nerve repair has no exception. End-to-side neurorrhaphy in which the donor nerve is not sacrificed is becoming a treatment of choice as far as nerve reconstruction is concerned. The distal stump of the injured nerve is anastomosed to the side of the donor nerve. Two techniques of end-to-side neurorrhaphy have been reported, either a window of the epineurium is open or intact epineurium. The open window of the epineurium is nowadays more popular.

Materials and Methods: A prospective study was performed in 15 female Sprague-Dawley rats, weighted between 150-200 gm, aged about 4 weeks. The rats were divided into 3 groups of five. Group I, end-to-end neurorrhaphy of transected peroneal nerve. Group II, distal stump of peroneal nerve was anastomosed end-to-side to tibial nerve with opening window of its epineurium. Group III, distal stump of peroneal nerve was anastomosed end-to-side to intact epineurium of the tibial nerve. Timing of reinnervation of the gastrocnemius muscle by observation of the hind legs during swimming was recorded.

Results: Timing of reinnervation of the gastrocnemius muscle in group l, ll and lll was at 16, 20, and 22 weeks respectively. There was no statistically significant difference among the three groups.

Conclusions: End-to-side neurorrhaphy, open window of the epineurium and intact epineurium yielded timing of reinnervation of the muscle without statistically significant difference.

Neuro-Vascular Island Flaps for Reconstruction of Fingers and Thumbs

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Finger defects can be challenging to reconstruct. Personal experience of different methods of reconstruction of finger defects with vascularized island pedicle flaps is presented. A series of 66 flaps from personal experience is presented. These include proximally- and distally-based types of homo- and hetero-digital flaps. Except of three cases, all others were performed as single stage. Technical details, long term follow-up and complications are discussed.

Urology

Reducing Blood Loss in Extraperitoneal Laparoscopic Radical Prostatectomy (ELRP): The New Approach for Localized Prostate Cancer

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Methods: From December 2005 to May 2006, 27 cases of ELRP were performed at our institute for clinically localized prostate cancer by one surgeon (SS). Operative data was compared to those 55 patients underwent open radical prostatectomy for early prostate cancer by the same surgeon. Early post-operative results, clinical outcomes and complications were analyzed between the two groups using Chi-Square, T-Test and Mann-Whitney tests.

Results: Patients, age and clinical staging were not different between the two groups. Average blood loss were 674 ml. and 1,313 ml. in laparoscopic and open groups, respectively (p = 0.07). The likelihood of transfusion in open group is higher than laparoscopic group, with odd ratio of 8.75 (2.09, 39.86-95% CI), p = 0.001. Recovery time and pathological stage were not different between the two groups. In laparoscopic group there were two rectal complications, including rectal injury and rectal necrosis which were treated laparoscopically and conservatively without long-term problem.

Conclusions: Our early experience has shown that ELRP is feasible. Although operative time was longer, the patients may gain the benefit of minimally invasive surgery and decreased operative blood loss. Oncological outcomes are equal with open surgery, however long term follow-up is needed.

A Case of Signet Ring Cell Carcinoma of Prostate

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A Thai man of 45 years of age came to the hospital in May 2003 with the symptoms of hematospermia, dysuria, difficult urination and low back pain. Rectal examination revealed stony hard prostate of 3 finger breadth. Urine analysis showed WBC 50-100/HPF, RBC 30-50/HPF, PSA 1.5 ng/ml, IVP showed large filling defect at right lateral wall, irregular surface with normal upper tract.

Cystoscopy revealed tumor mass at prostatic fossa with involvement of verumontanum, bladder neck, right posterior and lateral wall. Right ureteric orifice could not be identified, left ureteric orifice was normal. Bone scan showed negative result. Prostate needle biopsy was done but the finding was negative. Then TUR prostate and tumor at right lateral wall was done. Histologic diagnosis was mucinous adenocarcinoma with signet ring cells, suggestive of colorectal or gastric origin.

Gastroscopy and colonoscopy were done with negative findings, the patient was then subject to radical cystoprostatectomy and ileal conduit. Histologic section was mucinous carcinoma with signet ring cell carcinoma involving bladder base, bladder neck, prostatic urethra, both lobes of prostate glands and seminal vesicles with transmural invasion into perivascular and posterior capsular invasion.

The patient was doing well after operation. In November 2004, on every three months routine follow-up, rectal examination showed a 1-cm. nodule. Transanal excision was done and the histology was signet ring cell carcinoma. Then chemotherapy and local external beam radiation therapy were given.

The patient's course was uneventful until October 2005, when he came with the symptoms of dyspepsia and abdominal distention. CT scan of abdomen showed peritoneal seedlings and carcinomatosis peritonei. The patient had partial intestinal obstruction. He was cachetic and terminated on January 1, 2006.

TURP-Like-Cavity PVP: New Laser Treatment for Big Prostate

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TURP Prostate treatment has been a standard treatment for a long time, though several urologists and patients are still reluctant to do it due to many major side effects, especially in very big benign prostatic hypertrophy (BPH).

PVP (Photoselective Vaporization of Prostate) has now become available for BPH for over three years after 5 more years study at Mayo Clinic. This technique uses

KTP laser at 80 W. which can do total vaporization of the prostate down to capsule.

Advantage of PVP is the ability to avoid almost all side effects and complications of TURP with equal or even better result, and can be done as day case or over night stay. Most patients developed significantly good urine flow just one day after operation with no serious side effect of bleeding, TURP syndrome, CBN or sexual dysfunction, etc. With traditional technique of PVP when finished, the surface outlook of prostatic urethra is somewhat irregular, rugged but healed beautifully like normal cavity in long term.

Applied technique of PVP by using very near contact or even contact to the tissue, which gave very nice finish similar to good TURP finish, was developed giving the patients more comfortable and quick strong flow since the first day. The technique will be presented by VCD. The author strongly recommends this technique as a standard technique for TURP in the near future.

Robotic Laparoscopic Radical Prostatectomy: Real Benefit or Marketing Tool

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The advent of application of tele-robotic laparoscopic prostatectomy has allowed a computer interface between surgeon and patient. The tools of laparoscopic surgery in radical prostatectomy do have limitations. It is very difficult to suture fine anastomoses using a pure laparoscopic technique. Rigid laparoscopic instruments move only in two axes, i.e. in and out, clockwise and counter-clockwise. There are only 4 degrees of freedom. Surgeons can add pitch and yaw with their wrist action in open surgery. Performing laparoscopic radical prostatectomy has been likened to operating with chopsticks.

In addition, the robotic vision system contrasts starkly with the laparoscopic vision system. Laparoscopy is performed in two dimensions whereas robotic surgery is performed as a three dimensional surgery with 12X magnification. Laparoscopy appears better for extipation as robotic surgery done laparoscopically appears better for reconstructive techniques. Robotic surgery will take the surgeon to unaccommodating places where with human open surgery is not optimized. Specific sites where there is an advantage for robotic surgery relate to the prostate in uterosurgical applications and cardiac surgical applications.

It would appear from data published from several centres where a large volume of robotic prostatectomies has been performed, the outcomes which include return to potency, earlier return to continence, and surgical margin rates have improved using the robotic approach. Intuitively this would seem to be a reasonable claim given the improvement in vision and dexterity forwarded by robotic surgery. This does not take into account the advantage to the patient of a short hospital stay, absence of incision and wound infection, minimal pain relief requirements, early discharge, and return to normal activity. We are in a digital surgery revolution, the next advance would seem to be image overlay, and image guided targeted therapy using robotics.

Anatomical Relations of the Neurovascular Bundle and Application to Radical Prostatectomy

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The major long-term morbidity from radical prostatectomy is erectile dysfunction. Ranges of erectile dysfunction vary from 25% to 75% for many series. It is difficult to determine the veracity of some claims of excellent potency outcomes following nerve sparing radical prostatectomy. What is the aetiology of erectile dysfunction post radical prostatectomy? It would seem to be a combination of neural and vascular injury.

Two clinical issues relate to the anatomy of the neurovascular bundle at radical prostatectomy. The first being the feasibility of placing a nerve graft as a conduit along the neurovascular bundle course if the neurovascular bundle has to be excised. The second is the more recent postulate from the group led by Menon in Detroit who suggests that by sparing the anterior fascia an excellent outcome can be achieved following nerve sparing radical prostatectomy. The postulate here is that there are nerves in the anterior fascia, which related to erectile function. An alternate hypothesis would be that a higher release allows the nerve to cavernous tissue situated more inferiorly swept out of the way during the dissection.

In our medical school, we have performed anatomical dissections to define the composition and course of the components of the neurovascular bundle. We have found that there are four different nerve groupings arranged in a bundle postero-inferiorly to the prostate running between levator ani and rectum. These nerves comprise the nerves to the levator ani which are the most laterally and superiorly placed. There are prostatic nerve fibres approximating to the capsule of the prostate. Below that are the cavernous nerves, which run

along to the cavernous tissue under the pubic arch, and more inferiorly the rectal nerves are found. We performed 12 cadaver dissections to demonstrate these neural courses.

In conclusion, an understanding of the neurovascular anatomy of erection helps the surgeon plan the operation of radical prostatectomy to maximize the opportunity for potency preservation.

Miscellaneous

Weaning from Respirator in Surgical Intensive Care Unit: Efficacy of Multidisciplinary Approach Weaning Protocol

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Background: About 90 % of patients in intensive care unit need mechanical ventilator and 40% of these is in the weaning process. Prolonged ventilator day increases rate of ventilator-associated pneumonia and lung injury. But weaning of ventilator in the compromised patients who still need the ventilatory support results in worst outcomes. The strategy to develop a protocol for appropriate weaning might be the solution.

Objective: To compare liberal physician-based weaning process and multidisciplinary-based weaning protocol.

Methods: This is the retrospective and prospective uncontrolled before and after intervention study. We retrospectively recorded the liberal physician-based weaning process (pre-intervention group) between July 1, 2003 to December 31, 2003 and prospectively recorded the multidisciplinary-based weaning protocol (post-intervention group) between January 1, 2003 and June 30, 2004. Demographic data, indication for ICU admission, severity score, weaning process time, ventilator day, ICU length of stay and complications were collected and analysed by SPSS program.

Results: 248 patients were included in this study (128 in pre-intervention group and 120 in post-intervention group). Weaning process time, ventilator day and ICU length of stay were reduced significantly (73.51 ± 91.98 vs 10.83 ± 23.30 hrs, 4.66 ± 4.82 vs 2.93 ± 2.34 days and 5.99 ± 5.26 VS 4.47 ± 2.78 days respectively; $p < 0.01$) and without complication in the intervention group.

Conclusions: Multidisciplinary approach weaning protocol was effective and not harmful in discontinuing from ventilator use in surgical critically ill patients.

Total Mesorectal Excision Training in Soft Cadaver: Feasibility and Clinical Application

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Background: The major problem in the treatment of rectal cancer is local recurrence. After the introduction of total mesorectal excision (TME), the recurrent rate decreased from 100% to around 10%.

Objectives: The purposes of the present study was to evaluate the quality of organ and tissue plane preservation in soft cadaver and quality of performing procedures (mobilization of colon and rectum, total mesorectal excision and stapler anastomosis) in soft cadaver.

Setting: Colorectal Division, Department of Surgery and Surgical Training Center, Department of Anatomy, Faculty of Medicine, Chulalongkorn University.

Study design: Prospective descriptive study.

Materials and Methods: Seven soft cadavers were used for the training in total mesorectal excision (TME). Twenty-one participants (1 soft cadaver for 3 participants) performed these procedures. Procedure was done under supervision of experienced colorectal surgeons. The success and satisfaction in performing the procedure, and the quality of organ preservation was evaluated using questionnaires.

Results: Participants were satisfied with TME training in soft cadaver (mean 8.24-8.71). Internal organs and tissue plane of the soft cadavers were well preserved (mean 7.19-8.19) (0=extremely unsatisfied, 10=extremely satisfied).

Conclusions: Training of TME in soft cadaver is a

good method and very useful. The technique of organ preservation and the feasibility of the operative procedure help the trainee better understand the procedure and improve their skills.

Key words: total mesorectal excision, soft cadaver, training

The Use of Yanin Bed and Its Ability to Prevent and Cure Pressure Sores

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Background: The prevention and treatment of pressure sores are a serious problem especially pressure sores in patients who are immobile.

Objective: To conceive design and manufacture a bed, which is able to prevent or treat pressure sores, even though the position of patient is unchanged.

Materials and Methods: The pathophysiology of pressure sores was summarized and all of the problems were listed. A process of problem solving was undertaken and the concept of the bed grew from the need to solve these problems. The bed consists of two parts: part A and B. Part A is a slated structure fixed to the bed. Part B is a slated structure which moves independently and between the slates of part A. Part B can move up and down using a hydraulic jack, an electrical motor or an air pressure jack. A control board controls the function of the bed. The movement of Part B can be adjusted from 1-30 minutes and has a circuit breaker which is designed to protect an electrical circuit from damage caused by overload or short circuit.

Volunteers for the clinical testing of the bed were selected from patients who could not move their bodies. All of them lay down on the bed and did not change their position unless it was necessary. The back, sacral area and heels were monitored for the duration of the test. Photographs were taken at regular intervals for comparison of results.

Results: Seven patients took part in this experiment. The duration of the experiments were 16 days, 5 days, 6 days, 4 days, 14 days, 11 days and 60 days. At the end of each experiment, the patient's skins were observed to be normal with no evidence of pressure sores. In patients who had pressure sores before joining the experiment, the process of healing was not disturbed by the function of the bed and pressure sores healed naturally.

Conclusions: The experiment showed that the bed could prevent the development of pressure sores in patients with normal skin. In patients who had pressure sores before joining the experiment, the healing process continued to occur, even if the patient was lying on the wounds. The infection can then be controlled and sufficient nourishment taken either by mouth or by oral tube. The pressure sores can then finally heal.

Laparoscopic Training Box

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Today, minimal Invasive procedures are coming, everyone cannot run away from the most innovative and development of medical knowledge and equipments such as the robotic surgery i.e. Davinci System or any other laparoscopic equipment. But the fact is nobody knows how to really utilize the current available tools, and the level of skills that need to operate the tools requires a tremendous amount of time to practice. In addition, the raising numbers of the medical malpractice lawsuits have increased the limitation in doctors and use of equipments; they are also required to have prior experiences to be able to use the equipment in their treatment.

Currently, there are several kinds of laparoscopic training tools available from the developed countries but it seems to be more complex and is not suitable for the under developing countries, for example; the scope of the system, the progress monitor and the prices are too high. That is the primary reason why we have been spending a lot of time searching for the best tool that fits our country's medical need and the practical solution for practicing the hand-eye coordination. Therefore this box is developed. The box is the first laparoscopic training program which surgeons can use anywhere without any other expensive equipment or complex training system.

It's all in one box and the surgeon can practice after plugging it on and having the sight comparable as the laparoscopic's view. In addition, they can make the laparoscopic cholecystectomy training with this box without killing any animals, just to get their gallbladder for practice. With this box, they can learn and earn the skills in laparoscopy to become an experienced surgeon with reducing risk of real complications that might happen in the training hospital. Comparison between the sight of leparoscopic's view and the sight from this box is the next step of our development in laparoscopic training tools.

We hope that this training box will help to strengthen the surgical skills for all Thai surgeons and to be able to compete in the Western Medical World for the fraction of the cost.