The THAI Journal of SURGERY 2010; 31:138-156.
Official Publication of the Royal College of Surgeons of Thailand

Abstracts of the 35th Annual Scientific Meeting of the Royal College of Surgeons of Thailand, 25-28 July 2010, Ambassador City Jontien Hotel, Jomtien, Pattaya, Cholburi, Thailand (Part 2)

NEUROSURGERY

THE ROLE OF DECOMPRESSIVE CRANIECTOMY IN SEVERE BRAIN INJURY

Jeffrey V Rosenfeld, DJ Cooper, L Murray

Decompressive craniectomy (DECRA) is used in neurotrauma to manage brain swelling and reduce intracranial pressure. It is common practice to do this following the evacuation of an acute subdural hematoma where the underlying hemisphere is swollen. It has been used as a therapy of last resort to control intractable intracranial hypertension due to diffuse brain swelling. However, a large bilateral craniectomy carries risks, may be being performed too late, may not improve outcome, and may worsen outcome for those who survive. We initiated a multi-centre randomized trial of early DECRA for patients with diffuse brain swelling after trauma. The surgery is initiated within 72 hours of the injury. The operation is a large bifrontal and bitemporal craniectomy with sparing of the sagittal sinus. The recruitment has been completed and now has 155 patients entered. The results are due to be available at the end of 2010. The control group receives more intensive medical management instead of surgery. The end point is the Glasgow Outcome Score at 6 months and so far the follow-up has been 100%. There is also another randomized controlled trial from Cambridge (Rescue-ICP) which includes intracranial hematoma cases as well as brain swelling. Craniectomy can also be used as a damage control strategy by the remote general surgeon and extensive craniectomies are performed for blast injury to the head where there may be multiple penetrations, intracranial hematomas and gross brain swelling. The bone is stored in a subcutaneous abdominal pocket or cryopreserved or discarded if contaminated. DECRA is also used for patients with life-threatening cerebral swelling due to acute middle cerebral artery occlusion.

ETHICS OF EMBRYONIC TRANSPLANTATION FOR SPINAL CORD INJURY AND OTHER CNS DISORDERS

Jeffrey Rosenfeld

The intense desire for a çcureé in individuals with spinal cord injury (SCI) has resulted in the transplantation of stem cells, embryonic and other cell types into the injured spinal cord and blood stream so that they may regain the use of their limbs. A brief survey of the current state of human SCI transplantation is presented. The interface between basic science and the clinical management of SCI will be presented. At what point is it ethical to conduct human experiments when the experimental data is still at an early stage of development? Is it ethical to perform these operations on a vulnerable group of patients without adequate scientific controls and analysis of the results? "Medical tourism" of desperate patients and their families to India, China, and parts of Europe is increasing. This is usually expensive treatment and usually involves therapies with poor follow-up and no objective evidence of efficacy except for the testimonials of the operator and the patients which appear on websites and publicity material but not in the scientific literature. This is unethical and should be discouraged. Embryonic transplants are also being used for humans with Parkinson's disease, Huntington's disease and stroke and in animals with traumatic brain injury, stroke and experimental neurodegenerative disease. The same ethical principles apply.

HEAD INJURY: MILD TRAUMATIC BRAIN INJURY MANAGEMENT

Jeffrey Rosenfeld

There are several excellent Guidelines for the management of mild traumatic brain injury (m-TBI) such as NICE (UK), EAST (USA) and MAA (Australia) which give recommendations for assessment, frequency of observation, admission criteria and imaging criteria. It is critical to recognize the higher risk patients and any clinical deterioration and act on it rapidly. Concussion in sport will be discussed. Most concussion in sport is minor in degree but it is very important that players be given adequate time to recover completely before returning to the sport. Return while there are still post-concussional symptoms present will increase the chances of "second impact syndrome" which can result in a sudden collapse into deep coma seconds to a few minutes following the second concussion. This has a high mortality and needs urgent ICU and neurosurgery involvement. Malignant brain edema syndrome may occur after concussion in children due to loss of autoregulation and is also life-threatening. Multiple concussions are to some degree cumulative and recovery is slower following repeated concussion. There has been attention to the prevention of head injury in sport by improvement of the rules of contact and better head protection. Prevention of the severe consequences of concussion is important with education of players and coaches about the symptoms of concussion and the importance of honest reporting. Computer-based cognitive tests are being increasingly used to identify cognitive deficits post concussion but these do not replace clinical guidelines. Boxing should be under tight regulation but there is still the potential for severe traumatic brain injury and death and also the chronic brain damage causing dementia pugilistica with its Parkinson's disease like features and specific neuropathological changes.

TOTAL EXCISION (EN BLOC) OF A RECURRENT PELVIC CHONDROSARCOMA: A CASE REPORT

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Objective: A patient with recurrent chondrosarcoma of the pelvis that involved sacrum and spine is presented, in order to show the difficulties of the surgical resection and reconstruction technique.

Methods: A 43-year-old man underwent removal of pelvic chondrosarcoma 8 years ago, presented with a large mass of the left iliac crest, extending into the left gluteal region. Preoperative imaging revealed a large tumor occupying the left iliac crest, extending into the soft tissues of the left gluteal region with partial destruction of adjacent lumbar and sacral bones. Intraoperatively, a radical excision of the tumor was performed, including removal of the osseous substrate of the ilium, left part of sacrum, laminar and pedicle of L4-5, transverse processes of L2-3. Spinal instrumentation fixation with structural bone allograft reconstruction was performed and the abdominal wall was supported with a synthetic mesh. Histological examination showed grade I chondrosarcoma. The patient's postoperative course was uncomplicated.

Results: At the latest follow-up 30 months post-operatively, the patient is pain free and ambulatory with no signs of tumor recurrence, genitourinary complications or visceral herniation.

Conclusions: This case supports the current trend that wide resection should be the treatment of choice for such tumors even in the case of recurrence, in which a long period free from recurrence with good quality of life can be obtained.

PLASTIC & RECONSTRUCTIVE SURGERY

COMPARATIVE STUDY OF EFFECT OF BOTULINUM TOXIN TYPE A vs DELAYED FLAP PROCEDURE ON SURVIVAL OF RANDOM CUTANEOUS FLAP IN RAT

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Background: There are controversies about the effect of Botulinum toxin type A (BoNTA) on cutaneous vascularity and survival of random-pattern skin flap. Therefore, the authors used animal model to compare the effect of botulinum toxin type A (BoNTA) and delayed flap procedure on survival of random cutaneous flap model.

Methods: Thirty six 10-week-old Sprague-Dawley rats weighing 350-400 g were randomly divided into 4 groups. Group 1 underwent 2 × 4 cm. dorsal rat flap operation without any preconditioning, Group 2 were injected with subdermal BoNTA (Dysport) 1 unit/cm^2 5 day before operation (total 8 unit). In Group 3 dorsal rat flap were

modified with 2-stage delayed procedure, and group 4 received both BoNTA and delayed procedure. Photographs were taken on post operative day 7 and tissues were collected for histological examination.

Results: Area of skin flap necrosis in BoNTA injected group were significantly larger than the group without injection (11 vs 31). Although effect of BoNTA can be alleviated by the use of delayed procedure, the group received BoNTA before delayed procedure developed larger area of flap necrosis. (3.01 vs 10.21)

Conclusion: The results suggested that subdermal injection of BoNTA has an adverse effect on survival of random cutaneous flap, with or without delayed flap procedure.

EFFICACY OF PREOPERATIVE COLOR DUPLEX ULTRASOUND SCREENING FOR THINNING ANTEROLATERAL THIGH FLAP

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Objective: The purpose of this study is to examine the accuracy of color duplex ultrasound in locating perforators and to examine the accuracy in measuring distance between skin and subdermal plexus for thinning anterolateral thigh (ALT) flap.

Methods: A prospective study was performed at a single center from May 2009 to January 2010 of the patients submitted to anterolateral thigh flap. Patients were examined by using color duplex ultrasound 1 day before surgery to locate the perforator and measure the distance between skin to subdermal plexus and skin to muscle, and compare with the same distance measured intraoperativly.

Results: A total of 7 patients with 14 perforators were identified. There was no statistically significant difference between both distance measured by color duplex ultrasound and intraoperation ($p > 0.05$). There was no misidentification for locating perforator. The average distance from skin to subdermal plexus and skin to muscle measured by color duplex ultrasound were 3.61 and 10.47 millimeters, and 3.63 and 10.4 measured intraoperativly. Mean average flow velocity of the perforator was 9.85 cm/s. Mean duration for dissection both entire flap and during thinning were 171.4 and 6.3 minutes. Mean duration to perform color duplex ultrasound was 84.3 minutes, highest in first patient (118 minutes) and gradually lowest in last patient (48 minutes).

Conclusions: Preoperative color duplex ultrasound is noninvasive, simple, and is easily to identify small perforator and eventually also measure distance and flow velocity of very small perforator.

ANATOMICAL CONSIDERATION OF MEDIAL PLANTAR ARTERY FOR HEEL RECONSTRUCTION

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Background: In plastic and reconstructive surgery, the medial plantar artery (MPA) is most commonly employed for medial plantar flap survival. Many studies about medial plantar flap for reconstruction of the heel defects and their applications have been shown but there were few studies in the anatomy of MPA. The idea of this study concentrated on the course of medial plantar artery for surgeons to identify its location easily during harvesting the medial plantar flap. Materials and Methods: Twenty three cadaveric feet (17 males and 6 females) with an average age of 59.69 years were dissected to study the course of MPA starting from the posterior tibial artery to its bifurcation into the deep and superficial branches of MPA. The anatomical landmarks such as medial malleolus (M) and first metatarsal bone (MT) were used for estimation of the percentage length of MPA in relation to the reference line M-MT and analyzing the course of the MPA. In this study, three distances were measured as the following: 1) M-MT, distance between medial malleolus (M) and the first metatarsal bone (MT), 2) M-MPA, distance between M and the origin of MPA, and 3) the length of MPA, distance starting from the origin of MPA to its bifurcation to be the deep and superficial branches of MPA.

Results: The results showed that the reference line M-MT was 12.52 ± 0.33 cm (mean ± SEM). The M-MPA of 2.31 ± 0.11 cm (mean ± SEM) was also used to estimate the origin of MPA. The length of MPA was calculated as the percentage of line M-MT and also classified into three groups. The first group with the length (0.83-0.97 cm) less than 10% of M-MT was found in 13%. The second group with length (1.27-4.08 cm) between 10 and 35% of M-MT was mostly found in 69.6%. The last group with the length (4.82-6.89 cm) more than 35% of M-MT was 17.4%. There was no significant difference between sides. In addition, the course of MPA was shown using the polar plot, it mostly runs parallel to the reference line M-MT.

Conclusion: The origin of MPA could be localized about 2.31 ± 0.11 cm postero-inferiorly to the medial malleolus. The preoperative measurement of the M-MT line may be very useful in the estimation of the bifurcation of MPA to be the deep and superficial branches of MPA. The prediction will aid in dissection of foot reconstruction flaps namely medial plantar artery and medialis pedis flap.

NORMATIVE DATA OF THE INTERORBITAL DISTANCE IN THAI POPULATION

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Objective: To identify the normative data and the growth patterns of the bony interorbital distances and other dimensions of the orbit according to age among Thai population through the axial computed tomography (CT).

Methods: A retrospective study was undertaken to define normal values for a series of the bony craniofacial measurements - medial and lateral interorbital distances (MOD and LOD), length of the medial and lateral orbital walls (MOW and LOW), orbital diameter (OD). The CT images, in the PACS system, of the patients undergoing CT scan of the craniofacial, orbit or brain for complaints of unrelated craniofacial and orbital abnormalities from January 2006 to January 2010 were enrolled. The cases with any pathology of the bones, globes and orbits were excluded. The actual bony measurements were calculated. The data were gathered and plotted according to age in years. Graphs were generated using Stata version 9.

Results: Three hundred and forty nine CT scans (147 females, 202 males, age of 0-21 years, mean age of 10.2 years) were studied. There was no significant difference between male and female for all measurements after adjusting for age. Eight normative curves of the normal Thai population were created, composed of MOD, LOD, left and right MOW, left and right LOW, left and right OD. All curves showed that the growth rates of the bony orbit rapidly increase in the first 8 years of life. Then they continue increasing in a slower rate until the age of 20.

Conclusion: Knowledge of the differential growth patterns and normal measurement values in the orbital region through the CT images will help improving diagnostic accuracy, staging of reconstruction, precision of corrective surgery, and follow-up of the Thai patients with craniofacial abnormalities such as Fronto Ethmoidal Encephalo Meningocele (FEEM), hypertelorism, etc. These data may possibly be applied to the related population in the Southeast Asian countries.

PROSPECTIVE COMPARATIVE CLINICAL TRIAL OF EFFECTIVENESS BETWEEN INTERMITTENT AND CONTINUOUS NEGATIVE PRESSURE WOUND DRESSING WITH GAUZE USED FOR SKIN GRAFT IMMOBILIZATION

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Background: Negative pressure dressing with foam in the dressing of split skin grafts has shown good results by a variety of mechanisms. However, patient was unsatisfied or discomfort with these dressings due to limit activity. We have an alternative negative pressure dressing by using gauze as a wound contact material and applied negative pressure dressing at certain time intervals.

Objective: To determine effectiveness of negative pressure dressing with gauze in each group and to determine patient satisfaction when using and not using negative pressure at any given time.

Methods: A prospective comparative clinical trial was performed on sixty patients undergoing split-skin grafting. Patients were divided to four groups : 1. Simple occlusive dressing group (Control); 2. Continue negative pressure group (CNP); 3. Intermittent negative pressure (INP) group I, Applied pressure 12 hr. (8.01 PM - 8.00 AM) then Off pressure 12 hr. (8.01 AM - 8.00 PM); and 4. Intermittent negative pressure (INP) group II, Applied pressure 6 hr. (0.01 AM - 6.00 AM and 12.01 AM - 6.00 PM) then Off pressure 6 hr. (6.01 AM - 12.00 AM and 6.01 PM - 12.00 PM). Percent of graft taking was recorded on fourth and seventh postoperative day in each group and pain score was recorded daily on day 1-3.

Results: Percent graft take day 4 was 89.9 ± 3.0 (Control), 95.8 ± 1.1 (INP group I), 96.4 ± 1.2 (INP group II), 98.9 ± 1.0 (CNP) And Percent graft take day 7 was 91.1 (±2.7) (Control), 96.9 (±0.9) (INP group I), 97.6 (±1.2) (INP group II), 99.7 (±0.3) (CNP), $P < 0.001$. Pain score between on and off negative pressure in INP I was day 1 (2.3 vs 1.3), day 2 (2 vs 1), day 3 (1.4 vs 1.1) ($P < 0.05$) and INP II was day 1 (2.4 vs 1.4), day 2 (1.9 vs 1.1), day 3 (1.5 vs 1) ($P < 0.05$).

Conclusions: The use of negative pressure with gauze in skin graft is an alternative for physician because it is simple, easy to use, has a good result and can be applied at any time.

SURGICAL EDUCATION

ROLES OF DUNLOP-BOONPONG FELLOWSHIP PROGRAMME IN THE FUTURE

Russell L. Gruen

Professor of Surgery & Public Health, The Alfred & Monash University; Director, The National Trauma Research Institute. 2010 Weary Dunlop Boon Pong (WDBP) Thai Traveling Fellow.

The Dunlop-Boonpong Fellowship Programme provides outstanding opportunities for two-way exchange between Thai and Australian surgeons. The Weary Dunlop Boon Pong (WDBP) Thai Traveling Fellowship aims to provide opportunities for mentors of WDBP Scholars to visit their WDBP Scholar in Thailand at his/her hospital for a follow-up support/educational visit, 6 to 18 months after the WDBP Scholars' completion of their Australian/New Zealand experience. The Travelling Fellow can follow up on their protégé to see how they are applying their new skills in their home environment as well as act as an invited visiting Fellow to appropriate Thai institutions.

THE DEVELOPMENT OF THE ETHIC E-LEARNING PROJECT

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Background: The surgical ethics is essential for medical education like the heart of human being. The principles of e-learning for surgical ethic promotion are freedom of self learning, every where, every time, and convenience for student. After the success of neurosurgical e-learning pilot study initiated since 2008, the ethical e-learning project was created to solve ethical problem at the root cause and to ensure a good professionalism in Phramongkutkloa Hospital.

Objective: To develop ethics e-learning for surgical ethic promotion and to evaluate the result of ethical e-learning by compare between e-learning (self learning) group and control (traditional learning) group.

Material & Method: Experimental, prospective, randomized control trial study. The ethical e-learning course was initiated in Phramongkutkloa Hospital from August 2009 to September 2009. One hundred students (80 of the 5th year medical students and 20 of the 1st year surgical residents) were randomly selected to 2 groups : e-learning group and control group. The e-learning course was constructed in the internet at www.ebrain1.com, and Phramongkutkloa Medical College's intranet with MOODLE program. The students in e-learning group take course for 2 weeks which medical students can select their time, place to use computer (internet or intranet) for surgical ethic learning and self assessment. The evaluation of knowledge by examination, performance & attitude by observation and evaluation form, media quality by evaluation form were calculated with SPSS version 11.5 program by mean of examination score (percent) and Numeric rating scale (1-5 : least-most). The results of learning were evaluated by comparing results of e-learning group to control group with t-test.

Results: The students in e-learning group have significant higher scores than control group, ethical knowledge examination scores E-learning mean 75%, control mean 45%, P=0.001. For attitude and performance, students were satisfied to use of e-learning (Numeric rating scale mean = 4) on the observation no performance problem. The media quality was good (Numeric rating scale = 4)

Conclusion: The ethic e-learning project is useful for surgical ethic promotion. The project ensures a good professionalism and improves quality and moral of surgical training program.

MARK SITE : A SIMPLE WAY TO SAVE LIFE OF SAFE SURGEON

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Background: Wrong site operation is a serious risk for both patient and surgeon. Prevention is the most important. Mark site is a method to solve this problem

Method: During the period of 3 years (2007-2009), the numbers of surgical patients undergoing surgical procedures in the operating room were 27,765, 28,054 and 29,128 cases respectively. There were 2 cases in the year 2006 that the wrong sites were operated which created serious problem to the hospital. Mark site method had been employed in surgical patients that have two symmetrical side organs by residents and surgeons since 2007.

Result: From 2007 to 2009, "Mark Site" was implemented in surgical patients averaging 97.6 % in eye surgery, 68.3 % in urological surgery, 43.4 % in general surgery, 19.0 % in plastic surgery, 13.5 % in orthopedics surgery, 12.4 % in chest surgery, and 1.2 % in ear and nose surgery. The incidence of wrong site operation in 2006 was

2 cases. Since then, from 2007 to 2009 there had been no wrong site operation anymore. The patient's satisfaction rate was very high (>90%) Conclusion: Mark site for the surgical patient is safe, requiring minimal time, and easy to do. It can prevent the high risk of wrong site operation that means it can safe life of the surgeon.

CORRELATION BETWEEN INTERPROFESSIONAL PRE-OPERATIVE BRIEFING OF SURGEON TEAM, ANESTHETIC TEAM, OPERATING NURSE TEAM AND SATISFACTION OF TEAM MEMBER AND OPERATIVE TIME: A PILOT PROJECT IN MAJOR ABDOMINAL OPERATION

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Introduction: Preoperative briefing between Surgeon team, Anesthetic team, Operating nurse team shows improvement of surgical quality, surgical safety, surgical team satisfaction and surgical teamwork. However, the format and process of preoperative briefing is not well accepted and unpopular in surgical practice.

Objective:

1) Study correlation between preoperative briefing and satisfaction of surgical team.

2) Study correlation between preoperative briefing and operative time loss due to unreasonable causes.

3) Propose the preoperative briefing process to improve the quality of surgical treatment, surgical team satisfaction and decrease surgical time.

Methodology: Prospective experimental trial was done between pre and post implementation of preoperative briefing of major abdominal operation in 35 surgical personnel. (Surgeon team-11, Anesthetic team-10 and Operating nurse team-14)

Results:

1) Satisfaction to Surgeon teamwork increased 0.24 from 10. (no statistical significant)

2) Satisfaction to Anesthetic teamwork increased 0.21 from 10. (no statistical significant)

3) Satisfaction to Operating nurse teamwork increased 0.29 from 10. (no statistical significant)

4) Satisfaction to three interprofessional surgical teamwork increased 0.50 from 10. (no statistical significant)

5) Unreasonable operating time loss decreased from 2.8 to 1.6 minutes per 60 minutes operating time.

6) Satisfaction to format and process of preoperative briefing was 7.53 from 10.

7) The opinion to continue preoperative briefing were agreed-29, disagreed-5 and no opinion-1.

Summary: Preoperative briefing increased satisfaction level of surgical teamwork and decreased operating time due to unreasonable causes. Most of surgical personnel agreed to continue preoperative briefing but the format and process of preoperative briefing have to be revised for patient benefit and integrated to existing surgical system.

SKIN AND SOFT TISSUE

ACRAL LENTIGINOUS MELANOMA : NATIONAL CANCER INSTITUTE OF THAILAND EXPERIENCES

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Background: Melanoma is a rare disease for Thais. The superficial spreading melanoma caused by chronic sun damage is the most common subtype in Caucasian but for Asian, acral lentiginous melanoma is more common. We report our experiences with 15 cases of acral lentiginous melanoma seen at our institution.

Methods: We conducted a retrospective analysis of all 15 patients treated between July 2006 and December 2008. Information regarding clinical course, pathological diagnosis, treatment, recurrences and subsequent management were reviewed in detail from medical records and direct patient contact.

Results: The mean age at presentation was 58 years. Most patients (80%) presented with clinical stage III and IV disease. The principle treatment modality was wide local excision with nodal dissection. No patients received adjuvant chemotherapy, however three patients had adjuvant radiotherapy at node dissection field. No local recurrence was found. Nonetheless, frequent distant metastases were observed. Finally 10 of 15 patients had distant metastasis within one year and 3 patients had regional in-transit metastasis. The most common site of distant metastasis was lung. In these disseminated melanomas, only 3 patients received palliative chemotherapy but the results were

disappointing. Most of patients died from metastatic melanoma with mean survival of 11 months in stage III and only 4 months for stage IV.

Conclusion: The acral lentiginous melanoma is the most common subtype in our patients. Diagnosis of the lesions is often delayed because the area is not routinely examined by patients. Moreover these lesions often mimic other diseases which lead to misdiagnoses. Several differences in acral subtype melanoma exist when compare with others. From our data, this subtype arises in old age group, occurs in non sun-damaged area and has poorer prognosis.

MARJOLIN'S ULCER: NATIONAL CANCER INSTITUTE OF THAILAND EXPERIENCES

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Background: Scar cancer or Marjolin's ulcer was first described in 1828 by Jean Marjolin. Visuthikosol et al. hypothesized in 1986 that cancers arising in scar tissue because of impaired immunologic reactivity to tumor cells compared to normal skin. Poor lymphatic regeneration in scar tissue causes delay in host response to malignant transformation.

Methods: This retrospective case series was conducted at NCI from 2006 to 2008. Ten cases of Marjolin's ulcer were operated. Medical records of these patients were reviewed.

Results: There were 6 males and 4 females with an average age of 50.5 years. Burn wound scar was the most common cause. The mean latent period for malignant transformation was 29.2 years and all were squamous cell carcinoma. Wide local excision was primary treatment. Nodal dissection was performed in clinical palpable node only. Local recurrence occurred in one patient. Regional node metastasis was present as palpable node at the time of diagnosis in 5 patients, and lymphadenectomy was done simultaneously. In five patients who did not have node dissection, 3 of them (60%) had recurrence at regional node. Although they were high risk for nodal metastasis only one patient died from distant metastases.

Conclusions: Marjolin's ulcer is a long-term complication of the scar. It tends to be more aggressive with higher nodal metastatic rate and has poorer prognosis than other squamous cell carcinoma of the skin. However the treatment principle is the same with more caution on regional node metastasis. There is still no agreement in prophylactic node dissection. Indeed Marjolin's ulcer is a preventable complication of burn wound and may reflect the quality of wound care in our country.

SURGICAL INFECTION

VACUUM ASSISTED CLOSURE ABDOMINAL WALL TECHNIQUE IN ENTEROCUTANEOUS FISTULA

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Background: Enterocutaneous fistula is a bad dream for all of surgeons. All of patients have a long hospital stay. Conservative treatment of fistula can bring about spontaneous closure at around 60%. Management to control high output content from enterocutaneous fistula are varied, troublesome and challenging. Multiple dressing changes with protective skin barrier, catheter insertion into fistula tract for drainage, and endoscopic sealing fistula tract with fibrin, are difficulty to take care and poor control of fistula content. Vacuum assisted closure (VAC) system is a new technique and good method to apply to control high output fistula.

Methods: We applied VAC system technique in a 65 years old woman who developed enterocutaneous fistula in midline incision on postoperative day 10 after surgical exploratory laparotomy for proximal jejunal perforation which resulted in a segmental small bowel resection with end to side anastomosis. Postoperative diagnosis was eosinophilic gastroenteritis by pathological and laboratory reports. The VAC system was applied to enterocutaneous fistula wound by using sterile wet gauze 4 × 4" pack to the lower end of wound. The next layer lay the No. 14 NG tube and covered with additional dry sterile gauze 4 × 4". The skin was protected with Duoderm, after that the wound exterior was covered with Steridrape sheet. NG tube was connected to continuous suction with applied high pressure, about 350-450 mmHg, until surgical site wound appeared just hard in consistency. The content was recorded and changing the wound every 2 days. Total parenteral nutrition and octreotide were given during conservative treatment.

Result: After application of VAC technique, the fistula content was reduced from average of 700 cc/day to 5 cc/day, easily controlled, comfortable to patient and facilitating accurate improvement of nutritional and electrolyte status. Fistula opening closed in 10 weeks after conservative treatment with intravenous octreotide. The patient began oral diet after 12 weeks, Complete secondary wound healing at midline took 13 weeks and the patient was able to return to normal activity thereafter.

Conclusion: Vacuum assisted closure system is a good technique to control fistula output, and promote wound healing. It is easy to use, and is comfort to the patient.

TRANSPLANTATION SURGERY

ADULT RIGHT LOBE LIVING DONOR LIVER TRANSPLANTATION SECOND CASE IN CMU HOSPITAL

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Now, the best treatment for hepatocellular carcinoma (HCC) is liver transplantation especially in cirrhosis patient who cannot tolerate anatomical liver resection. Due to shortage of the cadaveric donor, living donor liver transplantation is the good option for these patients before the disease progresses beyond Milan criteria. In Maharaj Nakorn Chiangmai Hospital, this is the second case of adult right lobe living donor liver transplantation by surgical technique that more complicated than cadaveric liver transplantation or left lobe living donor liver transplantation due to vascular reconstruction of right and middle hepatic vein. A 54-year-old male patient had HCC at segment 5 and underlying HCV infection. He received RF ablation about a year ago and follow-up CT found new lesion at segment 6. His liver function test was classified in Child C. We harvested right lobe of liver from his daughter and reimplanted by Piggy back technique (without venovenous bypass) with HTK solution as preserving solution. The right, middle hepatic vein and short hepatic vein were anastomosed as outflow of the graft. The right hepatic artery was anastomosed to common hepatic artery of the recipient and common bile duct was anastomosed to common bile duct of the recipient. The patient extubated in operating room and stayed in ICU for 5 days in post operative period. There were no problem in both donor and recipient.

TRAUMA, BURN, CRITICAL CARE

TRAUMA QUALITY IMPROVEMENT

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Injury is a major cause of death and disability worldwide, and 90% or more of injury fatalities occur in low and middle income countries. Both injury prevention and care of injured patients are important in minimizing the burden of injury. The care of injured patients can be strengthened by improving the organization and delivery of trauma care services. Quality improvement (QI) programmes aim to achieve this through reflection on performance data about individual cases and series of cases to determine what is working well and what is not working well and therefore needs to be improved. Trauma QI programs have evolved over the past few decades. A spectrum of processes and tools are now available to trauma centres in all settings to assist in their quality improvement activities.

WHAT WE LEARN FROM WAR

Jeffrey V Rosenfeld

The mortality of battle injuries has reduced progressively since World War II (WWII) and reached approximately 10% in the Iraq and Afghanistan war which is the lowest level ever recorded. This is a remarkable

achievement considering the severity of the blast injury and the mass casualty environment. There are many reasons for the reduction in mortality which will be presented. Blast injury results in poly-trauma with penetration from metal fragments and other foreign bodies, blast wave injury to internal organs and extremities and burns including respiratory burns. Blast lung injury is very common following blast exposure and increases the complexity of management in the operating room and ICU environment. This severe multiple trauma produces gross physiological compromise and requires trauma care of the highest order in order to save lives and reduce morbidity. Improved vehicle armor and body armor save lives but more injured soldiers make it alive to hospital. The military trauma system has evolved to deliver immediate "buddy" and medic care at the point of injury, rapid road or aero-medical evacuation (AME), early initial wound (damage control) surgery at a forward operating base and then secondary assessment, further resuscitation more specialized damage control surgery at the major field hospital. This is a Level 1 Trauma Centre and includes computed tomography (CT) scan, intensive care unit (ICU). There have been advances in critical care and damage control resuscitation and surgical techniques and in the ongoing management of severe burns. When stabilized, the patients are transported in large aircraft with ongoing intensive care to Germany and then to the US. Rehabilitation techniques have also advanced particularly for prosthetic limbs and burns.

ROLE OF FIBER DIET IN SURGICAL CRITICALLY ILL SEPTIC PATIENTS

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Background: Diarrhea commonly occurs in surgical critically ill septic patients who received broad spectrum antibiotics. Some reports demonstrated that fiber diet with prebiotic properties could decrease risk of diarrhea in non-septic patient. However; most reports excluded septic patients who received broad spectrum antibiotics from their studies.

Objective: To compare risk of diarrhea and diarrhea score between fiber and non-fiber diet in surgical septic patient who received broad spectrum antibiotics.

Patients and Methods: We conducted prospective randomized control double blind study on general surgical ICU in university hospital. The patients who received broad spectrum antibiotics and no contraindication to enteral feeding were enrolled into two arms after informed consent. Allocation to intervention were randomized individually to receive fiber diet or non-fiber diet up to 14 days. Demographic data, disease severity, nutritional delivery and diarrhea score were recorded daily. Intention to treat analysis was performed after completed study.

Results: Thirty four patients from 189 enrolled patients were allocated to study (17 patients in each fiber group and non-fiber group). These two group patients were similar in demographic, disease severity, nutritional status, cause of sepsis and total feeding per day. Although proportion of patient who confronted with diarrhea score >15 was higher in non-fiber group than fiber group but did not show significant statistical difference [8/17 patients (47.06%) vs 4/17 patients (23.53%); P = 0.15]. However; The group of fiber diet had a lower mean diarrhea score (Fiber vs Non-fiber = 3.6 ± 2.3 vs 6.3 ± 3.6; P = 0.005) and generalized estimation equation model for repeated measurement (GEE) revealed lower global diarrhea score in fiber group than non fiber group of about 3.03 [Coefficient -3.03 (95%CI = -5.03 to -0.92); p = 0.005].

Conclusion: Enteral nutrition with fiber diet formula could reduce diarrhea score in surgical critically ill septic patients who received broad spectrum antibiotics.

MANAGEMENT OF BOMB BLAST INJURY TO THE HEAD, NECK AND BRAIN

Jeffrey Rosenfeld

Blast injuries to the head and neck comprise various combinations of primary blast injury to the brain with brain swelling and all types of intracranial hemorrhage; open wounds with multiple metal and bone fragments in the brain; head and neck, cervical and facial vascular injury; skull base fractures with CSF leak; pharyngo-laryngeal injury, acute airway compromise; facial and scalp burns, scalp defects; orbit and eye injuries; profound shock and multiple other systemic injuries. The principles of management include early tracheostomy, vigorous replacement of blood loss and correction of coagulopathy, nasal and wound packing, neck exploration and repair of carotid artery injury, early generous craniectomy, hematoma evacuation, removal of accessible fragments and debridement of devitalized cerebral tissue, ventriculostomy, duroplasty, and use of broad spectrum antibiotics. Repair of ocular injury or eye removal is often deferred. CT is required for planning the extent of the neurosurgery and CT angiography is useful when cervical vascular injury is suspected. The timing and extent of the neurosurgery must be balanced against the relative priorities of the other

injuries and the state of physiological compromise. The surgery for these injuries is generally more extensive compared with what is described in the literature for penetrating brain injury from previous wars. The management of these complex head and neck injuries is ideally conducted by a multidisciplinary team of head and neck (ENT) surgeon, neurosurgeon, ophthalmologist, oral and maxillo-facial surgeon and plastic/burns surgeon.

UPPER GASTROINTESTINAL SURGERY

THE THREE-FIELD LYMPHADENECTOMY FOR THORACIC ESOPHAGEAL CANCER

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Introduction: The three-field lymphadenectomy was first proposed by Sannohe et al in 1981, and has been developed as a standard operation for the thoracic esophageal cancer in Japan.

General Concept: The essence of TFL is not simply the extended area of lymph node dissection. The three fields for lymphadenectomy, i.e. cervical, mediastinal, and abdominal areas, should be dissected with thoroughness and continuity. It is highly invasive and risky if this is applied regardless of preciseness and the effort to preserve several important structures within the dissection field.

En bloc Dissection: En bloc dissection is the basic principle in cancer surgery. The main idea is the definite clearance of lymph nodes possibly containing metastasis together with interstitial tissue including lymph vessels connecting the nodes and the organ affected by the tumor. It is not necessary to resect adjacent structure such as the azygos vein or the pericardium unless there is direct tumor invasion. En bloc dissection is possible with precise knowledge of the layered structure surrounding organs. Detailed understanding of the layered structure is also important to prevent unnecessary damage to vital organs such as tracheo-bronchial system.

Preservation of Important Structures: The important structures which one should better preserve include the bilateral recurrent laryngeal nerves, the bilateral phrenic nerves, the bronchial arteries particularly on the right side, and the pulmonary branches of the vagus. The bilateral recurrent laryngeal nerves are particularly important. They are very easily paralyzed with slight mechanical stress, and the nodes along them (recurrent nerve chain) are the most frequent site of metastasis. The thoracic duct is dissected en bloc and resected in order to realize thorough lymph node dissection along the esophagus and the descending aorta for advanced esophageal cancer. The trachea and the bronchus are of course very important structures to be preserved. The recognition and preservation of the paratracheal sheath, a very thin fascia around the trachea, is also important.

Extent of Lymphadenectomy: The lower pretracheal nodes are rarely metastatic, and routinely preserved these days for better tracheobronchial circulation. Nodes below the aortic arch are also preserved in earlier stage diseases, particularly when the right bronchial artery cannot be preserved because the area is usually the point of origin of the left bronchial arteries.

Conclusion: With precise knowledge of surgical anatomy and caution to make the best use of it, TFL can be performed as a safe standard surgical procedure for the thoracic esophageal cancer.

RADICAL VIDEO-ASSISTED ESOPHAGECTOMY

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Purpose: To summarize the experience of our radical video-assisted esophagectomy (R-VAE) for more than 3 years to show its feasibility.

Methods: Review the clinical and pathological data of 93 R-VAEs undergone between Sept. 2006 and Dec. 2009 and check its safety, radicality, and prognosis retrospectively.

Results: One hundred and eight R-VAEs were attempted and 93 (86%) were completed. Clinical TNM stages of the 93 patients were St I in 34, St IIA in 18, St IIB in 23, St III in 10, St IVA in 2, and St IVB in 6 patients. The reasons of conversion to open esophagectomy was difficulty in dissection due to the advanced tumor stage or preceding radiotherapy in 8, narrowness of the mediastinum in 3, and loss of orientation (first case), pleural adhesion,

uncontrollable bleeding, intolerable one-lung ventilation in 1 for each. Hand-assisted laparoscopic surgery was adopted in 59 among 93 R-VAEs as their abdominal procedure. One operative death was experienced due to acute exacerbation of pulmonary fibrosis. One patient in 15 converted open esophagectomy died of postoperative pneumonia, whose preoperative condition is now regarded as contraindication. One reoperation was required due to postoperative bleeding. One chylothorax occurred but controlled conservatively. The average number of dissected mediastinal nodes was 33.6 ± 11.2 and the number of dissected nodes along left recurrent laryngeal nerve (106 recL + 106 tbL) was 7.9 ± 3.8. The 3-year survival rate was 86.2 ± 5.8% (100% for pSt I and pSt IIA, 75% for pSt IIB, 91% for pSt III, 67% for pSt IVA, and 68% for pSt IVB).

Discussion: With the accumulation of our experience, several merits of RVAE other than the less destruction of the chest wall have been recognized. Such merits include the magnifying effect which enables more meticulous operation, and the change of view point. There are several points to make R-VAE as radical as conventional open esophagectomy. The most important point is to understand the surgical anatomy and keep the dissection plane so that en bloc dissection can be realized. This point is important not only for radical surgery but also for safety.

Conclusions: R-VAE is acceptably safe. Its radicality is equal to conventional open radical esophagectomy of our own. Although the observation time is not sufficient yet, we think R-VAE is feasible surgical procedure for resectable thoracic esophageal cancer without preceding radiation therapy.

BARIATRIC SURGERY: EXPERIENCE IN KING CHULALONGKORN MEMORIAL HOSPITAL (KCMH)

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Objective: Obesity and its co-morbidities are the one of health care concern. While the bariatric surgery is the most durable way for control excess weight, not all health care centers in Thailand can provide this type of surgery. We study the outcomes of surgical treatment for morbidly obese patients in our institute.

Method: From January 2003 to April 2010, the data were collected from all patients who underwent bariatric surgery in KCMH.

Results: 41 patients (Mean BMI 49.7 kg/m^2) were treated with certain type of bariatric surgery. The most common procedure is Laporascopic Roux-en-Y Gastric By-pass. Mean Excess Weight Loss was 49.8% (2 weeks to 50 months follow-up). In Roux-en-Y Gastric By-pass patients who achieved 2 years followed up, mean Excess Weight Loss was 64.2%. After surgery, Diabetes Mellitus was resolved in 81.8% and improved in 18.2%. Hypertension was equally resolved and improved in 46.7%. Dyslipidemia was resolved and improved in 60% and 40% respectively, whereas Obstructive Sleep Apnea was resolved in 52.9% and improved in 47.1%.

Conclusion: We found that the outcomes of treatment in metabolic syndrome concurred with those of other reported series.

THORACO-LAPAROSCOPIC ESOPHAGECTOMY IN PRONE POSITION (TLEP) FOR ESOPHAGEAL CANCER

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Thoraco-laparoscopic dissection of esophagus is becoming popular in the treatment of esophageal cancer due to its minimal invasiveness. However, adequate exposure and complete lymph node dissection are difficult to achieve compared to open esophagectomy. Our technique (Thoraco-laparoscopic esophagectomy in prone position : TLEP) can provide excellent view of the anatomy of esophagus and mediastinum and help the surgeon to dissect with more precision.

Materials and Methods: We reported TLEP techniques and analyzed the results, including complications in 13 consecutive patients with esophageal cancer who were treated at the Department of surgery, Siriraj hospital, Mahidol university between June 2008 and December 2009.

Results: There were 11 males and 2 females with mean age of 59.36 ± 13.61 years. Regarding T staging, 82% of the patients were in T3 stage while 18% had T2 stage. Eighty three percent of the patients had N1 stage and 18% had N0 stage. Harvested lymph nodes were 15.80 ± 8.73 nodes. Average size of the tumor was 5.09 ± 1.84 cm. Average time for dissection in prone position was 150 minutes. Complication rate was 30%, with pneumonia (15.4%) and anastomotic leakage (15.4%) as the leading causes. We also had one case with tracheal injury (8%) which could be repaired without conversion to open

thoracostomy and with no mortality.

Conclusion: Thoraco-laparoscopic dissection of esophagus in prone position provides excellent exposure with minimal complications. It should be considered in the surgical treatment of the patients with esophageal cancer.

ESOPHAGEAL CANCER TREATMENT IN JAPAN

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In order to clarify the characteristics of esophageal cancer treatment in Japan, the guidelines issued by Japan Esophageal Society (JES) and the one by the National Comprehensive Cancer Network (NCCN) in USA are compared. Endoscopic mucosal resection (EMR) is recommended for Tis and T1a in NCCN, but such an early stage cancer is not as common in the US as in Japan. More advanced endoscopic therapeutic maneuver (endoscopic submucosal dissection: ESD) is already a routine procedure in Japan. Many treatment options including ESD are proposed and investigated in terms of detailed diagnosis of tumor depth. All the possible treatment options are listed for tumors with resectable locoregional stage in both guidelines. However, actual choice of treatments is largely different. The standard treatment in Japan is the combination of neoadjuvant chemotherapy and surgical resection (JCOG9907), and the neoadjuvant chemo-radiotherapy is not common. Although the definitive chemo-radiation therapy (DCRT) gathered huge attention until several years ago, it is now regarded as an alternative treatment option for those who do not want to be operated or those with severe complications. Except for the adenocarcinoma at E-G junction, the standard treatment for such resectable esophageal cancer in US seems NACRT or DCRT, and the recommended dose is 50.4 Gy for both. Such difference of the two guidelines is the result of the difference of their basic concepts of cancer surgery. In NCCR, transhiatal esophagectomy is still one of the treatment options, while such an operation is rarely done in Japan with curative intent. Although NCCR mentions the necessity of lymph node removal at the time of esophagectomy, their recommendation is "removal of more than 14 lymph nodes" and the purpose of lymphadenectomy is expressed as "accurate staging". In Japanese style esophagectomy, far more lymph nodes are dissected with çtherapeutic intenté. When western people use the word çloco-regionalé, it means narrower area than in Japan, and they tend to deny the effectiveness of lymphadenectomy beyond it. However, when we face the fact that it is from Japan that the positive results of adjuvant and neoadjuvant systemic chemotherapy added to surgery have been reported both in the field of gastric cancer and esophageal cancer, we cannot help feeling that thorough loco-regional control should be the basic requirement for the systemic chemotherapy to be an effective additional treatment, and to some extent, the Japanese style surgery fulfills such requirement.

MORBID OBESITY: SLEEVE GASTRECTOMY

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Case: Thai female 45 years old, truncal obesity apperance Underlying - ischemic heart and congestive heart failure on medical treatment

- hypertension, on medical treatment
- obstructive sleep apnea

Present illness

She has gained her weight for 3 years ,caused by uncontrolled eating and limited activity to exercise. Failed to loose weight by herself. One year ago, her condition detoriated. Her physician referred her to obesity clinic for surgery.

Measurements

Body weight 168 Kg. Body height 160 cm.
BMI = 61, ideal body weight = 60 Kg.
Excess body weight = 108 Kg.
Impression
Super morbid obesity (BMI >60)
Plan of treatment
Sleeve gastrectomy

SINGLE PORT LAPAROSCOPIC CHOLECYSTECTOMY

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A female 35 years old, no underlying disease
CC: Dyspepsia 1 years ago
PI: One years ago, she felt abdominal discomfort and epigastrium pain when she had a heavy meal. She got some medication from other hospital, but not improved.
PH: No medical allergy
Alcoholic drinking-sometime
No smoking

Physical examination

Vital signs - stable not pale, no jaundice
Abdomen - soft, not tender no mass

Investigation

Gastroscopy - no mass, no ulcer

Ultrasound upper abdomen - multiple small stone in gallbladder, no CBD dilatation

Liver function tests - within normal limit

Impression

Symptomatic gallstone

Plan of treatment

Laparoscopic cholecystectomy (single port site)

BOERHAAVE'S SYNDROME: A CASE REPORT

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Background: Postemetic esophageal injuries have wide range of clinical presentations. Partial esophageal tear, known as Mallory-Weiss tear, may present with upper GI bleeding or asymptomatic. Complete esophageal tear or Boerhaave's syndrome is rare but it is associated with high mortality and morbidity due to delayed diagnosis. The clinical presentations is a result from expulsion of oral, gastric secretion and bile that expands into mediastinum and pleural cavity which then leads to local inflammation and systemic sepsis. Surgical treatment with primary repair is a standard treatment while an endoscopic application of esophageal stent has been reported as a successful method.

Objective: To report a caese of Boerhaave's syndrome.

Materials & Methods: A 48-year-old man developed two episodes of hematemesis after number of days of heavy alcoholic drinking. Gastroscopy showed a large blood clot in lower esophagus, the diagnosis was esophageal hematoma, Mallory-Weiss tear and acute gastritis. At the 34th hours after admission he developed tachypnea, tachycardia and high fever. Chest X-ray showed pnuemomediastinum and subcutaneous emphysema at cervical region. Diagnosis was Boerhaave's syndrome with sepsis. Thoracotomy showed 2 cm. of lower esophageal perforation, primary repair with ICD were done. Contrast esophagogram performed on the 10th postoperative day showed leakage at perforation site, conservative treatment were given by NPO, total parenteral nutrition and other supportive treatment. Fistula closed in 5th week after operation.

Result: Patient was discharged in the 6th week after operation, no complication was detected during one years of the follow up period.

Conclusion: Early diagnosis is crucial, it solely upon the maintenance of high index of suspicion in patient who had forceful or repeated vomiting then followed by chest or epigastric pain and fever or hemodynamic instability. Patient should be promptly investigated as to confirm the diagnosis and to exclude the other critical emergent disease. Chest X-ray may show pneumomediastinum, pleural effusion, pneumothorax or subcutaneous emphysema. Leakage or perforation may be demonstrated by contrast esophagogram, CT scan or endoscopy.

ANTICOAGULANT-INDUCE TRANSMURAL JEJUNAL HEMORRHAGE: A CASE REPORT

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Anticoagulant induce spontaneous small bowel hemorrhage is an uncommon condition. Presenting symptoms varied and the common ones are acute abdominal pain, bloating, some degree of intestinal obstruction, fever, nausea and vomiting. Setting of patients is usually old age with chronic illness, and many underlying diseases and taking anticoagulant drug for long time. Common sites of bowel hemorrhage are located in duodenum and proximal jejunum. This patient presented with abdominal pain and some degree of intestinal obstruction. Four month later after first episode of spontaneous small bowel hemorrhage with successful conservative management, he developed recurrent small bowel hemorrhage. The diagnosis was confirmed by clinical finding and CT scan abdomen. After admission, he developed severe abdominal pain and showed sign of peritonism. The abdominal pain did not improve by analgesia for 3 day after correction coagulopathy. On the third day after conservative management, patient developed sudden hypotensive episode. Emergency exploration was performed with segmental resection of hemorrhagic part of small bowel and end to end anastomosis. Intraoperative bleeding from hemorrhagic part of jejunum was about 800 cc. Pathological report confirmed transmural jejunum hemorrhage without thrombosis of mesenteric vessels. Two months later, the patient developed pneumonia, sepsis, status epilepticus and cardiac arrest. Treatment of this condition is mainly conservative until symptom subside. Operative management should be selected to some case of patient such as failure after conservative management, worsening of symptom, unstable vital sign, peritonitis, and uncertain diagnosis

VASCULAR SURGERY

ENDOVASCULAR REPAIR IN RUPTURED ANEURYSMS

Michael Denton
Australia

Ruptured abdominal aortic aneurysm (AAA) is manageable by EVAR provided the patient presents in a stable clinical state even if slightly hypotensive. The essential issues with this approach is the stable clinical status of the patient, the availability of multi-slice CTA, access to suitably equipped hybrid OR which is suitably stocked with disposable endovascular equipment including a range of sizes of endografts. Of course it is essential to have suitably trained endovascular surgeons with similarly skilled endovascular nurses and radiographers in an angiosuite or hybrid operating theatre where endovascular or open options can be undertaken as the situation demands. There are many important issues in relation to case selection, anesthesia, criteria for EVAR, timing of conversion to open, management of retroperitoneal hematoma, and management of perioperative and post operative endoleaks all of which will be outlined. However in the correct circumstances this endovascular approach is the ideal modality of treatment.

RECENT ADVANCES IN ENDOVASCULAR TREATMENT OF AAA

Michael Denton
Australia

80% of AAA can be treated endoluminally if recent advances in technology are applied techniques have been developed to allow endoluminal grafting in the presence of angulated, irregular and flared neck. However case selection is all important in achieving a successful outcome similarly, tortuous, angulated and dilated iliac arteries as well as stenosed access vessels can be managed with well established methods to gain access for the endograft in its delivery system short infrarenal neck has been a common contraindication for EVAR, but, now many of these cases can be managed successfully by fenestrated endograft aneurysms of the common iliac artery is manageable with iliac branch device and visceral segment aneurysms and thoracoabdominal aneurysms can also be treated with multi-branch device the options, indications and current state of the art will be discussed.

UROLOGY

LAPARO-ENDOSCOPIC SINGLE SITE (LESS) MANAGEMENT OF BENIGN KIDNEY DISEASES: EVALUATION OF COMPLICATIONS

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Purpose: To present our experience with Laparo-Endoscopic Single Site (LESS) management of benign urologic diseases.

Materials and Methods: From September 2008 to February 2010, 22 patients underwent single port transumbilical laparoscopic surgery: nephrectomy for a nonfunctioning kidney (9 cases), cyst decortications for symptomatic renal cyst (10 cases), redo-dismembered pyeloplasty with previously failed laparoscopic surgical repair (1 case), ureterolithotomy (1 case) and ureteral reimplantation (1 case). Patients underwent surgery through a single 2-3 cm infraumbilical incision with the single port. All pathological reports of LESS nephrectomy and cyst decortications confirmed with chronic pyelonephritis and simple cysts, respectively. Histology of xanthogranulomatus pyelonephritis was found in two cases of the nephrectomy procedure.

Results: LESS was a possible and safe approach in 81.8% of patients. All LESS cyst decortications, ureterolithotomy, ureteral reimplantation and redopyeloplasty were completed without major complications or conversion to open surgery. LESS intracorporeal suturing was successful in ureteral reimplantation. However, there was one case of each LESS cyst decortication and pyeloplasty requiring an additional 3-mm port for suturing due to bleeding and an instrument error, respectively. For LESS nephrectomy, two cases with higher waist circumference were converted to standard laparoscopic nephrectomy due to failure to progress. One post operative complication of incisional hernia occurred in a patient with chronic bronchitis and asthma.

Conclusions: LESS for the management of benign

kidney diseases is an effective and safe treatment option in well-selected patients.

LONG-TERM STUDY OF QUALITY OF LIFE OF 186 LIVING KIDNEY DONORS: AN EVALUATION BY USING THE 36-ITEM HEALTH QUESTIONNAIRE SURVEY

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Objective: To evaluate the safety of living related kidney donors after transplantation and study the long-term psychosocial outcomes in those donating a kidney by using Thirty six-item questionnaires (SF-36) health-relative quality of life.

Materials and Methods: Two hundred and forty cases of living related donor kidney transplantation from January 1997 to December 2006 were analyzed retrospectively. There were 72 males and 136 females aged from 19.5 to 68.9 years old, with a mean of 37.6 ± 10.46 years old. The indexes including serum creatinine (SCr), were compared before and after donation. Surgical complications were followed-up. SF-36 questionnaires health-relative quality of life was posted to all patients and the response rate was 186 (77.5%).

Results: The Intra operative complication rate was 1.08% (2 cases); one left upper ureter injured and one accidental tear of adrenal gland, respectively. No postoperative complication was reported. The mean follow up was 3.1 ± 2.5 years (2 months -11 years). Donors' serum creatinine was 0.94 ± 0.1 mg/dL before donation, and 1.09 ± 0.28 mg/dL at 2 years after donation ($p<0.01$). There was no significant difference in clinical between any 2 time points since the value was in normal range. The average donor quality of life after donation, as measured by the SF-36, was better than that of the general US population. However, when compare among the donors of many country, most of our score was not the highest, except the Bodily pain score. Although 94.9% of the donors would make the same choice again, 5.14% were dissatisfied and regretted their decision to donate a kidney.

Conclusion: Most living donors enjoyed not only the safety of living after transplantation but also the long-term excellent quality of life including psychological and social effects.

SURGICAL COMPLICATIONS AFTER KIDNEY TRANSPLANTATION

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Background: The gold standard treatment of end stage renal disease is renal transplantation, either living-related or cadaveric renal transplantation. The objective of the present study was to estimate the incidence of surgical complications and identify risk factors for these outcomes.

Methods: Records from 523 consecutive renal transplants in the period from 1998 to 2009, which included cadaveric and living related transplants, were reviewed. Surgical complications were classified as vascular, ureteric, lymphatic and wound complications.

Results: The incidence of overall complication was 12% of all transplants. Lymphovascular complications were seen in 9%. The incidence of renal artery stenosis was 4%, whereas renal vein complication was 1%. for ureteric, lymphatic, and wound complication, the incidences were 3%, 4%, and 1% respectively. On multivariable analysis, risk factors related to overall surgical complications are age (odds ratio 1.03; 95% CI, 1.00 to 1.05; $p = 0.026$) and time of surgery (odds ratio 2.10; 95% CI, 1.21 to 3.64; $p = 0.009$). Type of transplant was not a significant risk factor.

Conclusion: Surgical complications in our institute are comparable to previous reports. Risk factors for overall surgical complications from this study included the age of recipients and the time of surgery.

AN IMPROVEMENT OF BOTH VOIDING AND SEXUAL DYSFUNCTION IN 313 THAI MEN WITH LOWER URINARY TRACT SYMPTOMS AFTER AN UROSELECTIVE α1-BLOCKER TREATMENT

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Objective: To study the relationship between erectile dysfunction (ED) and lower urinary tract symptoms (LUTS) and analyze the effect of an uroselective α1-blocker, on sexual function of Thai patients with benign prostate hypertrophy (BPH).

Patients and Methods: Of the 488 Thai men with LUTS and treated with alfluzosin monotherapy at a men's health clinic, 313 men (64%) with LUTS completed 8 months of the treatment and all responded the questionnaires; (1) the International Prostate Symptom Score (IPSS)

which rates LUTS severity, and (2) Inter-national Index of Erectile Function (IIEF)-5 questionnaires, which evaluates the grading of ED symptoms. The relationship between IPSS score, IIEF-5 and selected clinical characteristics was analyzed using multiple regression analysis. For the comparisons at baseline and changes from baseline in the overall population, a Chi-square or Fisher's exact test was used for qualitative variables and a t-test for quantitative variables, with $p < 0.05$ taken to indicate statistical significance.

Results: Of the 313 men treated with alfuzosin 10 mg for 35.6 ± 2.2 month's follow-up (ranged 32.1-42.3). The percentages comorbidities presented with hypertension, dyslipidemia, diabetics, and heart disease were 43.8%, 42.8%, 40.3% and 28.4%, respectively. LUTS were categorized by IPSS score as moderate 100(31.9%), severe 231(68.1%) and ED were graded according to the IIEF-5 as normal 51(16.3%), mild 27(8.6%), mild to moderate 78 (24.9%), moderate 47(15.0%), severe 110(35.1%). Men considered ED were with a strong influence of LUTS severity. After 8 months of alfuzosin treatment there was a significant improvement from baseline in mean total IPSS and IIEF-5, from 19.95 ± 6.4 to 11.13 ± 4.6 ($p < 0.001$) and from 11.5 ± 6.9 to 14.9 ± 5.7 ($p < 0.001$), respectively. However, IIEF-5 score did not have statistical significant difference in the patients who had severe symptom score of IPPS.

Conclusion: Treatment with alfuzosin 10 mg OD is safe, and in this pilot study was the most effective therapy to enhance both voiding and sexual function in Thai men with LUTS and sexual dysfunction.

LAPAROENDOSCOPIC SINGLE-SITE (LESS) NEPHRECTOMY IN A PATIENT UNDERGOING CONTINUOUS AMBULATORY PERITONEAL DIALYSIS (CAPD)

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Objective: The aim of this study was to assess the feasibility, safety, and outcomes of transumbilical single port laparoscopic nephrectomy in a patient undergoing continuous ambulatory peritoneal dialysis (CAPD) treatment.

Patient and Method: A patient was a 62-year-old woman, who had been using CAPD for 4 months because of end stage renal disease (ESRD) secondary to diabetic nephropathy. She was referred to the urology clinic due to suffering from left pyonephrosis and non-functioning kidney with a proximal ureteric stone. Then she underwent percutaneous nephrostomy or PCN to drain the pus. After none of any infection had been found, she underwent LESS nephrectomy. Medical records were reviewed, and laboratory values and outcomes were analyzed.

Results: The procedure was successfully completed without conversion to conventional laparoscopic or open surgery. Operative time was 160 minutes. Moreover, the specimen was easily and rapidly extracted through the TriPort without the use of an additional entrapment bag. Estimated blood loss was 200 mL and pain scale was 0-1while no morphine requirements. On the same day of the operative procedure, a double-lumen HD catheter was introduced for postoperative HD. The patient underwent hemodialysis treatment via a subclavian catheter after the operation and she was discharged home on the sixth postoperative day with a functioning CAPD catheter and with no further problems. After 2 weeks, the patient switched from HD to CAPD without complications. Pathological analysis revealed chronic pyelonephritis. Post operative hematocrit, blood urea nitrogen, and creatinine were 39.3%, 22 mg/dL, 2.3 mg/dL respectively. The scars receded into the umbilicus and were hardly visible.

Conclusion: We reported our clinical experience with LESS nephrectomy in high risk patients with ESRD undergoing CAPD treatment. LESS nephrectomy is a feasible technique with advantages of less pain, shortened convalescence, improved cosmesis, and absence of wound complications.

LAPAROENDOSCOPIC SINGLE-SITE (LESS) NEPHROURETERECTOMY FOR OBSTRUCTIVE MEGAURETER TREATMENT IN A PATIENT WITH DIALYSISDEPENDENT END STAGE RENAL DISEASE

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Objective: To demonstrate transumbilical single port laparoscopic nephroureterectomy for treatment of obstructive megaureter in a patient undergoing hemodialysis (HD)

Patient and Method: A 36-year-old man with dialysis-dependent ESRD consecutively underwent LESS nephrouretectomy, due to a nonfunctioning kidney associated with the obstructive mega ureter. His ESRD was secondary to chronic glomerulonephritis and the comorbidities were hypertension and heart disease. He was referred to the urologic clinic due to a left upper and lower abdominal mass sized 10 × 7 centimeters. Medical

record including patient demographics, medical comorbidities, operative outcomes, and complications were reviewed. Nephrouretectomy with LESS was performed duplicating standard laparoscopic steps with the help of the articulate and straight laparoscopic instruments. The distal ureter was left with an open end.

Results: Hemodialysis was performed one day before surgery. Due to a very large diseased tumor, needle aspiration was performed through the port to decrease the size of tumor. Operative time was 200 minutes and the blood loss was minimal. There was no intraoperative complication. After complete mobilization, the left kidney was removed through the single infra-umbilical incision and a Jackson-Pratt drain is left in situ through the same skin incision. Estimated blood loss was 50 mL and Pain scale was 0-1while no morphine requirements. Although initial postoperative hemodialysis in the immediate 48 hours after surgery was performed without the use of heparin, the patient required reoperation to evaluate the active bleeding on the 5th post operative day. We could not find any site of active bleeding. The bleeding was stopped after platelet replacement. The patient was discharged at the 13th postoperative day. Post operative hematocrit, blood urea nitrogen, and creatinine were 32.3%, 52 mg/dL, 15.5 mg/dL respectively. The postoperative cosmetic result was excellent as the incision scar was hidden inside the belly button. Pathological analysis revealed severe hydronephrosis and hydroureter.

Conclusions: We demonstrated our experience with LESS nephroureterectomy for obstructive megaureter treatment in a patient undergoing HD.

HYBRID TRANSVAGINAL LAPAROENDOSCOPIC SINGLE SITE (LESS) NEPHRECTOMY IN A PORCINE MODEL

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Introduction: Hybrid -LESS is a novel technique for performing laparoscopic surgery through a single umbilical and vaginal incision that may offer all of the benefits of standard laparoscopy with reduced post-operative pain, decreased morbidity and improved cosmesis. The goal of our study is to determine if Hybrid LESS transvaginal nephrectomy with two types of single port is feasible in a porcine model.

Materials and Methods: A female pig with a weight of 50 Kg., was anesthetized under general anesthesia in flank position. The tri-lumen SILS port (Covidien, USA) was inserted through a 2-cm infraumbilical incision. The R-Port access laparoscopic system, a single port multichannel cannula (Advanced Surgical Concepts, Dublin, Ireland) was inserted transvaginally. An EndoEye, rigid 5-mm 30-degree digital laparoscope with an integrated camera head (Olympus Medical, Tokyo, Japan) was introduced. Standard laparoscopic instrumentations and roticulator instruments were used to perform right nephrectomy.

Results: Hybrid transvaginal LESS nephrectomy was successfully in the porcine model. A right kidney was extracted transvaginally. Visualized was not obscured by bleeding. No operative complications were encountered and there was no need for additional open procedure. The animal was sacrificed at the completion of the procedure.

Conclusions: We demonstrated a reproducible and feasible technique of Hybrid transvaginally LESS assisted nephrectomy in the living porcine model using currently available equipment and roticulator instruments.

SINGLE PORT BOWEL RESECTION: AN EXPERIMENT TECHNIQUE IN A PORCINE MODEL

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Objective: The purpose of the study is to define the techniques in performing laparoendoscopic single site (LESS) bowel resection by completely intracorporeal manner in a porcine model.

Materials and Methods: The study was conducted on a large-white female pig (20-25 kg) for the procedure of ileal conduit. All steps of the technique applied during open surgery were duplicated intracorporeally. The operation began with the introduction of the laparoscope via a single trocar. The harvest of ileum and restoration of bowel continuity were made using intracorporeal technique. The bowel was grasped in order to gain access to its mesenteric vessels which were clipped and divided, carrying out the dissection of the entire small bowel. Two modified Endo-GIA were then fired both cranially and caudally, in order to obtain a closed small bowel specimen and to maintain patent the lumen of the bowel. The bowel anastomosis was performed intracorporeally.

Results: The operation was technically feasible via a single port within a short time without intraoperative or immediate postoperative complications. Blood loss was minimal

Conclusion: Single port bowel resection and re-

anastomosis is readily achievable in this animal model. As an operative approach, it may both advance in its own right as much as facilitate the evolution and clinical incorporation of other developmental access routes.

REVISION OF MALFUNCTIONING PERITONEAL DIALYSIS CATHETER

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Objective: Continuous ambulatory peritoneal dialysis (CAPD) is a modality of renal replacement therapy in patients with end stage renal disease (ESRD). Catheter malfunction causes inadequate dialysate drainage and interrupts treatment. Malfunctioning catheter is resulted from catheter migration, catheter obstruction by fibrin and omental wrapping. Many surgical techniques have been reported including wire manipulation and laparoscopy. We present our surgical technique for revision of malfunction catheter.

Methods: During a period of four years, revisions of Tenckhoff catheters were performed in twelve patients who had outflow failure.Under local anesthesia, a 2-3 cm separated incision was made between previous scar and pubic symphysis, intraperitoneal part of the catheter was palpated and brought through the new incision. Catheter irrigation was performed and re-introduced into pelvic cavity.

Results: Catheter revision was technically successful in ten patients. No immediate complication was found. Two patients needed re-implantation of Tenckhoff catheter after failure of revised procedure.

Conclusion: Our described technique is relatively simple, straightforward, and no need for any special instrument. Moreover, this technique can preserve the catheter sites and reduce associated complication.

LAPAROENDOSCOPIC SINGLE SITE URETERAL REIMPLANTATION AS A TREATMENT OF THE SINGLE ECTOPIC URETER

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Objective: Single ectopic ureter is a rare malformation in adults. We describe the technique, feasibility, and effectiveness of laparoendoscopic single site (LESS) intracorporeal ureteroneocystostomy with the single ectopic ureter.

Patients and Methods: A 53-year-old woman was referred with chronic urinary tract infection. Intravenous urography and voiding cystoureterography revealed a double collecting system and incomplete double ureter of the left kidney with an ectopic ureter and a voiding ureteric reflux (VUR). No bladder overactivity was found during the urodynamic study. The patient underwent LESS ureteral reimplantation. The procedure was done transumbilically by using a SISL port, roticulator instruments and standard laparoscopic intracorporeal suturing with an Endo-stitch device. Patient demographic, preoperative symptoms, radiological imaging, complications, and postoperative outcomes were analyzed.

Results: LESS ureteral reimplantation was successfully performed in this patient. The operative time was 180 min with an estimated blood loss of less than 50 mL. No immediate postoperative complications were observed. Postoperatively, oral intakes were allowed on day 1. Drain and Foley catheter were removed on day 3 and 7, respectively. The hospital stay was 4 days. Double-J stent was removed 6 weeks after surgery. The time to return to normal activity was 2 weeks. (Urinary tract infection during follow up was not developed.) Follow-up intravenous urography confirmed reduction of hydronephrosis and good drainage.

Conclusion: LESS ureteral reimplantation is an effective procedure with good results. It is an advanced laparoscopic technique that closely resembles open and laparoscopic surgical techniques and provides a safe alternative to existing methods. We believe that this procedure will become an established treatment option.

LAPARO-ENDOSCOPIC SINGLE SITE (LESS) DECORTICATION OF SYMPTOMATIC RENAL CYSTS WITH SILS PORTS AND ROTICULATOR INSTRUMENTS

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Introduction: To present our experience with LESS management of symptomatic simple renal cysts with SILS ports and roticulator instruments (Covidien, USA). We demonstrated the simple techniques of LESS in cyst decortications.

Patients and Methods: August 2009, 2 patients underwent single port transumbilical laparoscopic renal cyst

decortications. Preoperative diagnosis was based on physical, laboratory, sonographic and computer tomography examinations. Cysts of all patients enrolled in the study were classified as simple cysts (Bosniak class 1-2). The patient position was a modified lateral decubitus. The trilumen SILS port was inserted through a 2-cm infraumbilical incision. Procedural success was defined as no recurrence of the cyst and complete pain relief. Symptomatic success was defined as a significant pain decrease. Patients underwent radiological followup.

Results: All LESS decortications of symptomatic renal cysts with a SILS port and roticulator instruments were completed without major complications or conversion to open surgery. Estimated mean blood loss during surgery was about 50 mL. Patients who experienced a complete pain relief had significantly larger cyst sizes compared with patients with a partial pain decrease. All patients had negative cytological and pathological findings of malignancy or any other abnormalities. At 3 months mean follow up, none of the patients reported symptomatic and/or radiologic failure.

Conclusion: Transumbilical Single-Port laparoscopic transperitoneal decortications with a SILS port and roticulator instruments represents an effective and safe treatment option in the management of symptomatic renal cysts.