

## Abstracts

# 26th Annual Congress of the Royal College of Surgeons of Thailand, July 2001

### GENERAL SURGERY

#### Self-Retaining Retractors for Biliary Tract Operation

*CS Monaiyapong, W Tiapanich, B Thongpan, C Poompanya*

**Objective:** We designed the self-retaining retractors for biliary tract operation in order to reduce assistants, stabilized the extension of operative field and ease the team in performing cholecystectomy, CBD exploration of bypass procedure such as Roux-en-Y choledochojejunostomy or choledochoduodenostomy.

**Materials and Methods:** The frame and retractors were made from 2 mm thick stainless steel. The rectangular shape frame was 9 x 11 inches to cover the right subcostal incision (Kocher's incision). The frame was attached with multiple nuts that have 1 inch spacing. The retractors were made in 4 sizes; 1,2,3,4 inches width with different depth that can be held with the frame and fixed with screws. The retractor can be applied rapidly without struggle. The mechanism of self-retaining retractors assisted frame is traction-countertraction mechanism without the use of any complicated table fixation arm. These retractors were used in eight patients. Five patients were explored common bile duct and had bypass procedures. The descriptive parameters of number of assistants, team satisfaction, operative time, body weight of patients, thickness of abdominal wall and intraoperative complications were recorded.

**Results:** The number of assistants was reduced from 2 to 1 person in all biliary tract operation even bypass choledochoduodenostomy and choledochojejunostomy. The remaining assistant can perform the operation in easier manner satisfactorily. The operative field can be stabilized e.g. hepatoduodenal ligament can be kept stretching steadily. This retractors usage can eliminate the usage of sponge holder as a serial regulator of the suture material in all bypass procedure because all suture material

can be serially regulated on the frame itself. The operative time is not longer than manual retracted operation which range from 50 to 80 minutes. Body weight ranged from 40 to 75 kg. Abdominal wall thickness ranged from 2.5 to 5 cm. There were no intraoperative complications such as hepatic subcapsular hemorrhage, hepatic parenchymal tear in all cases.

**Conclusion:** The benefit of self-retaining retractors is the reduction in assistants, better performance in the biliary tract operation. These retractors can be used without limitation of patient body status or thickness of the abdominal wall. There was no complication occurring intraoperatively. For the team, outcome of the usage of self-retaining retractor for biliary tract surgery is well accepted.

#### "Ouan-P" Tube, The 2 in 1 Feeding and Decompression Tube for Immediate Postoperative Enteral Feeding

*T Youngrod, S Chuthapisith, C Porupattanarak*

**Background:** A combined nasogastric-jejunal tube is functioning not only for enteric feeding but also for gastric decompression in one tube. From the principle of this tube, we created our self made intraoperative combined tube named "Ouan-P".

**Objective:** To evaluate the efficiency of our self made "Ouan-P" tube.

**Methods:** During January 2001 and May 2001, eight patients received placement of "Ouan-P" tube intraoperatively. Our self made "Ouan-P" tube consisted of Levin's type nasogastric tube the size of 18 F and a feeding tube 6 F size with our self made connector. We placed the end of Levin's tube in stomach and the end of 6 F-feeding tube in distal duodenum or proximal jejunum intra-

operatively in eight upper GI surgical patients. We recorded regarding the procedure feasibility, feeding-decompression function and complications after feeding.

**Results:** "Ouan-P" tubes were successfully placed in all eight patients. Both the functions of decompression and feeding were efficient without any clogging or kinking. Tube displacement was found in 3 patients and with one patient who could not tolerate feeding directly in jejunum but it was completely corrected by decreasing rate of feeding. The duration of tube removal ranged between 3-15 days, with an average of 6.5 days.

**Conclusion:** The combined tubes can be easily placed intraoperatively. It also allowed both effective gastric decompression function and enteral feeding to promote immediate postoperative enteral feeding.

### Is Reperfusion Injury Relevant to Structural and Functional Disorder After Intestinal Ischemia?

*S Wattanasirichaigoon, N Chatrikul*

After unclamping, plasma-to-lumen clearance (PLC) demonstrates abruptly higher permeability in a reperfused gut. In fact, mucosal structure is usually correlated with its function under various pathological conditions such as ischemia (I) as well as ischemia/reperfusion (I/R). Based on pathological grading, we compared the PLC technique with an averted gut sac technique to evaluate mucosal barrier function during I/R. Intestinal permeability was assessed in the lumen-to-plasma direction using an averted gut sac suspended in a bath containing FITC-dextran (FD4; M.W. = 4kDa), and is expressed as a mucosal-to-serosal clearance (MSC). Rats were subjected to occlusion of superior mesenteric artery I/R. Intestinal permeability of FD4 was then assessed by evaluation either PLC or MSC (ml/min/cm<sup>2</sup>) at baseline, 30 and 60 min of I, and 30 and 60 min of R (BL, I30, I60, R30 and R60, respectively). Mucosal damage score was assessed blindly. Linear regression analysis showed much stronger correlation of mucosal damage score with permeability as assessed by the MSC technique ( $r^2=0.19, p=0.017$ ). Although measurement of the PLC of various hydrophilic probes is a well-accepted method for evaluating intestinal permeability, the nonsignificant linear correlation was obtained between PLC and morphological appearance. With respect to histologically apparent mucosal injury, permeability of reperfused gut using the everted gut sac technique did not have significantly higher permeability than that of I60. These data suggest that ischemic insult is more important for the development of interstitial damage after a period of ischemia than the reperfusion effects.

### Retroperitoneoscopic Adrenalectomy for Aldosterone-Producing Adenoma

*S Patcharavtrakul, N Kunachaichot, P Sukosil, R Hakeem, W Wachirapunyanyukul, C Aungstiroch, A Ponnontarat*

**Background:** Laparoscopic adrenalectomy can be performed via transperitoneum, retroperitoneum or posterior extraperitoneum approaches. We report our first case of retroperitoneoscopic approach.

**Patient:** Retroperitoneoscopic approach has been successfully performed in 30 cases of different upper urinary tract pathology. With this approach, adrenalectomy was done in a 45 years old female presented with hypertension and hypokalemia, suppressed plasma renin activity, and elevated plasma aldosterone concentration. CT scan showed a 1.8 cm left adrenal tumor.

**Method:** Under general anesthesia in flank position, retroperitoneal space was accessed. Two of 10 mm trocars, one each for camera and retractor were introduced. Two of 5 mm trocars for working ports were then placed. Adrenalectomy was performed by dissecting the gland and its surrounding adipose tissue and its vascular supply. Finally, adrenal vein was that last to be clipped and divided.

**Result:** The mean operative time and blood loss were 150 minutes and 50 ml respectively. Postoperatively, patient was given a single dose of 50 mg of pethidine intramuscularly. Oral intake and ambulation were commenced on the first postoperative day. The patient returned home on the third postoperative day.

**Conclusion:** Retroperitoneoscopic adrenalectomy is an alternative approach for adrenal surgery.

### Risk of Breast Cancer in Post-menopausal Women Using Hormone Replacement Therapy (HRT)

*A Ratanaawichitrasin, K Bhodhisuwan, W Reansuwan, S Kongpatanakul, S Ratanawichitrasin*

**Objective:** This study aims at identifying the increased risk of breast cancer in post-menopausal women who were using hormone replacement therapy (HRT).

**Patients and Methods:** We conducted a case-control study to compare the proportion of HRT used between breast cancer and non-breast-cancer women. The patients were diagnosed of having breast cancer who were in natural menopause (excluded hysterectomy) and aged 50 or more at the time of diagnosis from Siriraj Breast Cancer database (1983-1996). Controls were post-menopausal volunteers aged 50 or more who visited Siriraj Hospital for other purposes such as elderly clinics, health check up, etc. After informed consent, women in control group would have her

breast examination done by well-trained surgeons to exclude any potential breast cancer. To avoid selection bias, women in orthopedic clinic, post-menopausal clinic, and those who came for screening mammogram were excluded. The data of age, racial, habitat, education, marital status, number of children, history of breast-feeding, familial history of cancer, contraception and hormonal usage was collected from both the studied and control groups.

**Results:** Of 1,913 breast cancer patients in the database, 623 were included for study. During May-December 1999, data from 679 volunteers were collected for controls. Of 1,302 total study populations, 58 women ever used HRT (4.5%), which distributed to 3.2 percent (20/623) in studied cases and 5.6 percent (38/679) in controls. From univariate analysis, age, age at menopause, number of children, habitat, education, contraceptive pills, familial history of breast cancer, and HRT usage were found to have association with breast cancer ( $p$ -value  $< 0.05$ ). After multi-variate forward stepwise logistic regression analysis, there was no statistical significant association between HRT use and breast cancer (Adjusted odds ratio [OR] = 0.61, 95%CI = 0.31-1.20). While older age (OR = 0.90, 95%CI = 0.88-0.92), higher education (OR = 0.47, 95%CI = 0.30-0.74), contraceptive pills user (OR = 0.36, 95%CI = 0.25-0.51), and familial history of breast cancer in second degree relative (OR = 0.24, 95%CI = 0.08-0.75) were associated with decreased risk of breast cancer respectively, while habitat outside Bangkok was associated with increased risk of breast cancer (OR = 1.45, 95%CI = 1.09-1.92).

**Conclusions:** Hormonal replacement therapy in post menopausal women was not associated with increased risk of breast cancer. However, HRT should be used with care, while HRT user should have regular breast screening for potential cancer.

### Overexpression of Membrane Drug Transporter Proteins in Human Pancreatic Cancer Cells

*Y Sivatanauksorn, DRC Spalding, K Saroui, K Ganeshguru, BR Davidson*

Pancreatic adenocarcinoma is characteristically resistant to many different anticancer drugs. Mechanisms of resistance of potential importance may be the overexpression of membrane drug transporter proteins that have not been well characterised in this type of cancer.

The presence of the membrane bound P-glycoprotein (P-gp), multidrug resistance protein (MRP) and lung resistance-related protein (LRP) were analysed in a panel of 21 human pancreatic cancer cell lines using specific antibodies MRK 16, MRP6 and LRP56 respectively and

compared to a C3a hepatocellular cancer cell line which is known to express these proteins. Mean cell fluorescence (MCF) intensity was recorded for each cell line to provide an estimate of relative binding and results were expressed as a ratio of MCF in the presence of the antibody to that of control serum. Moreover, the functional expression of P-gp activity was assessed by examining the cellular accumulation of selective substrates in the presence and absence of P-gp inhibitors verapamil and PSC833.

Four cell lines (COPac-1, HuPac-1, Paca3 and PT45) overexpressed P-gp (mean ratio 3.08, range 1.93-3.59) compared to the other 17 cell lines (mean 0.97, range 0.85-1.06). However, the P-gp functional activity was demonstrated only in COPac-1 and HuPac-1 cells. All 21 pancreatic cell lines expressed MRP (mean ratio 3.34, range 2.11-4.61). All cell lines, except HuPac-1 (ratio 0.88), showed elevated expression of LRP (mean ratio 11.56, range 2.39-27.90). In three of these cell lines, AsPC-1, Capan2 and Hs766T, LRP levels were highly expressed (ratios of 24.15, 27.90 and 25.73 respectively).

The wide overexpression of multiple drug resistance proteins especially LRP and possibly MRP appears to have an important role in drug resistance in pancreatic carcinoma.

### Antiangiogenic Effect of Thrombospondin-1 in Tumour Growth of Hepatic Cancer Cells

*Y Sivatanauksorn, V Sivatanauksorn, BR Davidson*

Tumour angiogenesis has become the focus of intense interest as a potential target for novel cancer therapies including in hepatocellular carcinoma (HCC). Thrombospondin-1 (TSP1), one of important antiangiogenic factor, has been found to block neovascularisation in vivo. Nevertheless, few studies have been established about TSP1 in HCCs. The effect of the tumour growth of the TSP1 transfection to a HCC cell line was studied both in vitro and in vivo.

The SK-Hep-1 human hepatic cancer cells were transfected with TSP1 cDNA using a calcium phosphate technique and the expression of TSP1 on transfected cells was detected by flow cytometry. The level of TSP1 in culture medium and cell lysate was measured using an enzyme immunoassay and the thymidine incorporation assay was also analysed to compare the proliferation of each cell group. Moreover, in vivo tumour growth was determined by subcutaneous injection with wild-type, plasmid vector transfected and TSP1 transfected cells.

The levels of TSP1 produced in culture medium and cell lysate of transfected cells were significantly higher than those of wild-type cells ( $p < 0.05$ ). The thymidine

incorporation of TSP1 transfected cells was 60 per cent lower than that of wild-type cells ( $p < 0.05$ ). The mean tumour volumes in wide-type, plasmid vector transfected and TSP1 transfected cells at the sixth week were 389, 94, and 12 mm<sup>3</sup>, respectively.

TSP1 transfection in SK-Hep-1 cancer cells inhibits the cell incorporation in vitro and tumour growth in vivo. Genetic manipulation in an attempt to reduce tumour angiogenesis by introduction of TSP1 gene might be a novel therapeutic approach to HCCs.

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### Vascular Injuries of the Lower Extremity: Factors affected limb amputation

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*N Hiranyakas, B Sangthong, P Pattawibul, P Phrungrasert, P Sorntraipornchai, P Vasinanukorn*

**Background:** Despite progress in vascular surgery, fracture fixation and soft tissue reconstruction; arterial injuries of the lower extremity continues to carry a high amputation rate

**Objectives:** This study was undertaken to evaluate those factors associated with arterial injury that influence amputation in our hospital.

**Materials and Methods:** Patients with arterial injuries of the lower extremity over the 10-year period ending December 2000 were retrospectively reviewed. Demographic data and factors related to the severity of injury (mechanism of injury, ischemic time, sign of ischemia) were studied. Mangled Extremity Severity Score (MESS) was used to assess the severity of this complex injury. Univariate analysis and multivariate logistic regression were performed to determine factors associated with limb amputation.

**Results:** Sixty patients were recruited; 52 (87%) were males and 8 (13%) were females. Thirty five (58%) patients were referred from other hospitals. In 44 (73%) injuries were resulted from blunt and 16 (27%) from penetrating trauma. Motorcycle accident was the most common cause (70%) of injuries. Four (7%) patients died of hemorrhagic shock due to associated injuries. Amputation of the leg was performed primarily in 13 (22%) patients and performed secondarily in 22 (37%) patients. All requiring primary amputation had high MESS score in which the average MESS was 9.2. Univariate analysis showed that factors associated with secondary amputation were: ischemic time ( $P=0.06$ ), associated venous injury ( $P=0.02$ ), fasciotomy ( $P=0.03$ ) and MESS = 7 ( $P=0.06$ ). The average ischemic time was high in secondary amputation group. (4.7 hr. VS 3.4 hr.;  $P=0.06$ ). In patients with associated venous injury, an attempt to repair venous injury did not improve limb

salvage rate ( $P=N.S.$ ). Multivariate analysis revealed that associated venous injury ( $P=0.02$ ) and MESS = 7 ( $P=0.01$ ) were independently related to secondary amputation.

**Conclusion:** Severity of lower extremity vascular injury as measured by MESS, prolonged ischemic time and associated venous injury are strong determinants of amputation. Minimizing the ischemic time from the scene to the hospital may improve limb salvage rate.

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### Leg Gangrene from Vascular Pythiosis

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*S Horsirimanont, H Hiranyakas, B Sangthong, P Pattawibul, W Mitthanant, C Dechsakum*

Vascular pythiosis is a rare type of systemic fungal infection that does not respond to antifungal agents. Most patients die within 1-2 years. The treatment is surgical resection alone. A case of vascular pythiosis was recently seen at Songklanagarind Hospital.

A ~~seventy-one~~ year old Thai man presented with unilateral left lower leg gangrene. The absence of dorsalis pedis and posterior tibial arterial pulses was detected with normal popliteal arterial pulse. Below knee amputation was done. Pathological report revealed *Pythium insidiosum* in the arterial stump. Above knee amputation was performed. Free pathological margin was reported and  $\beta$ -Thal/HbE disease was diagnosed by hemoglobin typing. The history of chronic ulcer from his occupation of prawn farming, was suspected to be the origin of this fungal infection. This fungus caused arterial wall necrosis and thrombosis was detected by microscopic examination. Surgical resection was the only treatment possible.

This uncommon vascular gangrene condition requires careful investigation for pythiosis, because it cannot be observed by routine tissue staining. The recent expansion of prawn farming in many coastal areas of the country suggests that this infection may become more common.

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### Isolated Hepatic Zygomyces in an Immunocompetent Woman

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*P Porapakkham, Y Sirivutananuksorn.*

*V Chakrapan Na Ayudhaya, A Vongjirad, J Manonukul*

Zygomycosis is a rare fungal infection that occurs mostly in immunocompromised host and usually presents in the form of rhinocerebral, cutaneous, or disseminated disease. A case of isolated localized liver zygomycosis in a 48 years old healthy woman is presented. The patient presented with two months of fever and a mass at the epigastrium. CT scan examination of the abdomen showed

mass-like lesions in the lateral segment of the left lobe of liver. The patient successfully underwent lateral segmentectomy due to the suspicion of liver tumour. The characteristics of the hyphae on the haematoxylin-cosin and lectins staining established the diagnosis of hepatic zygomycosis. Entomophtharales was administered. The postoperative was uneventful. The patient was discharged from the hospital and she is well and gains nearly ten kilograms after 3-monthly follow up. To our knowledge, this is the first case reported of an isolated hepatic zygomycosis in an immunocompetent host who was treated successfully by the hepatic resection.

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### Liver Injury in Siriraj Hospital

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*S. Siltram, P. Sakolsattayatorn, S. Leksomtawin, S. Chuthapisit*

**Background:** Liver injury is a challenged intra-abdominal injury with high morbidity and mortality rate. We revealed details of this interesting injury in Siriraj Hospital.

**Objective:** To review mechanisms of injury, severity of injury, operative method, and also mortality rate of liver injury in Siriraj Hospital.

**Method:** A retrospective study of liver injury during May 1997 and March 2000 was done. Analysis of the data was made by simple statistic method of mean and percentage.

**Results:** Sixty-eight patients with liver injury who were admitted with completely recorded data in Siriraj Hospital were analyzed. This included 56 males and 12 females. Mean age was 28.6 yr. (4-60). About mechanism of injury, 39 (57.4%) were affected from blunt injury meanwhile 26 (38.2%) were affected by stab wound and 3 (4.4%) by gunshot wound. Besides liver injury, 55 patients (80.9%) had at least one site of other organ injury (77 sites in 55 patients) leading by 28 sites of chest injury (including 13 sites of diaphragmatic injury). This study included 23 (33.8%), 24 (35.3%), 18 (26.5%), 1 (1.5%) and 2 (2.9%) patients who were classified in grade I, II, III, IV and V of liver injury respectively. Surgery was performed in 66 patients whereas only 2 patients were observed with CT scanning for successful nonoperative management. Cauterization and suture of injured liver were the two most common procedures that performed in our hospital (52.9% and 23.5% respectively), but they were limited to only grade I, II and III liver injury. The overall mortality rate was 11.8 per cent with only 9.2 per cent in grades I, II and III but markedly increased to 66.6 per cent in grades IV and V.

**Conclusions:** More than half of liver injury in this study was from blunt injury with high rate of associated injury. It still caused high mortality rate in severe grade of injury.

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### Nylon-Mesh-Reinforced Transparent Adhesive Polyester Film for Congenital Abdominal Wall Defects

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*S. Patrapinyokul, S. Sangkhathat Na Ayudya, S. Korwichiankul*

Nylon-mesh-reinforced transparent adhesive film (NMAF) has been developed and used by our pediatric surgical unit as a temporary Silo for staged surgical closure of abdominal wall defects since 1988. The NMAF is a thin, soft and strong membrane created by incorporating nylon-mesh in between two layers of transparent adhesive film (STERI-DRAPE, 3M Co.; OPSITE, Smith-Nephew Co.). It is as transparent as silicone sheath to benefit the observation of the occupying abdominal content but more economical. Between January 1988 and December 2000, 62 of congenital abdominal wall defects had been surgically treated at Songkla Nagkharin Hospital. Twenty Gastroschises and 4 Omphaloceles who had staged closure with NMAF Silos were reviewed. The indications for staged closure were inability to reduce the abdominal viscera into the abdomen without jeopardizing cardiopulmonary functions of the infants and compartment syndrome developed after primary closure prompted recreation of Silo. Average days before removal of Silo were 10 days (range 3-20; N=15) for gastroschises and 12.7 days (range 10-16; N=4) for omphalocele. Five gastroschises with NMAF Silo died of sepsis before surgical removal of the Silo. Among them, three infants had delayed operations after 17 hours of life including one infant aged 26 hours at the time operation.

**Conclusion:** NMAF Silo is safe, effective and economical in palliative closure of congenital abdominal wall defects.

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### One-stop Diagnostic Clinics

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*O. Exemin*

In the UK there is a heightened awareness of breast cancer in the general population as the result of the Breast Screening Programme and the prominent coverage given to breast cancer in the media. The public are encouraged to seek referral to Specialist Units and General practitioners readily refer to such Units due to patient demands for rapid reassurance and the limited exposure and experience of many General Practitioners to breast cancer. More recently, the introduction of the "Two-week Wait" for patients suspected of having breast cancer (as determined by National Referral guidelines) has further increased the referral and throughput in Breast Units. As a consequence of this marked increase in patient referral, with a high benign to malignant ratio (varies from 10:1 to 20:1 in different parts of the UK), and a need to process these

women rapidly, accurately and cost-effectively, "One-Stop Diagnostic Clinics" have been established. We pioneered this service in the UK 10 years ago. This multidisciplinary approach has significantly improved patient management and satisfaction in the UK. Its success, however, has generated an escalating workload and has stretched the existing resources in the NHS.

### **Malignant Fibrous Histiocytoma of the Esophagus: A case report**

*T Hanpraseritpong, B Sangthong, P Puttawibul, V Leclamanit, A Nitiruangjaras*

The authors reported a 61-year-old man presented with progressive dysphagia, odynophagia and weight loss. The endoscopy revealed a fungating mass at left pyriform sinus and another mass at distal esophagus. Biopsy was done only at hypopharynx which revealed squamous cell carcinoma. Total laryngopharyngoesophagectomy with gastric pull-up was performed. Mass at distal esophagus was found to be malignant pleomorphic fibrous histiocytoma confirmed by immunohistochemistry and electromicroscopy. This condition is extremely rare with 12 cases found in our review of recent literature.

### **PSU Hand-made Balloon for Endoscopic Ultrasonography**

*S Punperk, B Oawatranporn, T Maipang*

**Background:** Endoscopic ultrasonography (EUS) is a combination of endoscope and intraluminal ultrasound scanning which has been introduced as an imaging tool for gastrointestinal (GI) diseases for more than 10 years. EUS has become the most accurate staging technique for all GI cancers. The endosonographic instrument at Songklanagarind Hospital is a radial scanning type of EUS gastroscopy (GF-UM20). To assure good acoustic coupling between the transducer and organs to be investigated, the transducer tip must be covered with a balloon filled with de-aerated water. In the economic recession period purchasing expensive disposable balloon (750 BHT/piece) can be a problem. Fortunately, we have successfully developed balloon with good quality at a much lower cost (30 BHT/piece)

#### **Objectives:**

1. To describe how to construct PSU hand-made balloon for endosonography.
2. To assess the quality of endosonographic study using hand-made balloon.

**Materials and Methods:** The PSU hand-made balloon

is made from a latex finger bag of 15 mm in diameter and 60 mm in length. There are three steps in making the balloon. First, the latex finger bag was placed to cover the tip of ultrasound endoscope. Second, tying the latex finger bag around the metal groove at the tip of the transducer casing with #2/0 silk, and the excessive portion of the latex finger bag was trimmed out. Third, inflation of the balloon with water by pushing the air/water valve at the handle of the ultrasound endoscope to assess the integrity.

**Results:** Endosonographies were performed successfully in all 45 patients by using the GF-UM20 covered with the PSU hand-made balloons. Fifteen examinations were esophageal carcinoma staging, 10 were preoperative evaluation of gastric cancer and 20 were the evaluation of pancreatico-biliary system. The endosonographers were not aware of the type of the balloon mounted on the transducer tip and the examinations were satisfactory as assessed by the endoscopists.

**Conclusion:** This hand-made balloon using materials available in our hospital is much cheaper than the commercially available balloon without compromising the quality of the endosonographic imaging. It is simple to make and we believe that its use is appropriate in the situation of economic constraint currently prevails in our country.

### **Complex Chromosomal Aberrations in Human Hepatic Cancer Cell Lines Identified by Spectral Karyotyping**

*Y Sirivatanauksorn, V Sirivatanauksorn, BR Davidson, NR Lemoine*

Hepatocellular carcinoma (HCC) is one of the leading malignancies worldwide with poorly understood molecular genetic profiles. Various genetic events remain to be identified, particularly those associated with the progression of the disease. In order to identify chromosomal loci involved in genetic rearrangements associated with HCC as the starting point for positional/candidate cloning strategies, a novel molecular cytogenetic technique, spectral karyotyping (SKY) was applied to three established human HCC cell lines (HepG2, Hep3B, PLC/PRF/5). SKY refers to the application of spectral imaging to differential colour display of all human chromosomes. It is based on simultaneous hybridisation of 24 chromosome-specific painting probes. SKY mapped the complex aberrations occurring in all HCC cell lines. The commonest partial or whole-arm gains involved 20p, 8q, 9q and 20q whereas the commonest partial or whole-arm loss affected 15p and 15q. The molecular cytogenetic analysis indicated unbalanced chromosomal aberrations, therefore the acquisition of

copy number changes of chromosomes or chromosomal subregions are the major cytogenetic abnormalities in HCC. This comprehensive characterisation should be useful to direct future investigation.

### Esophageal Carcinoma in Thailand

*P. Vasinanukorn, N. Rodwanna*

In Thailand, like many other part of the world that the incidence of esophageal cancer varies from region to region. For over all Thai population the incidence is 3.7 in male and 1.3 in female per 100,000 population. The lowest is the Northeast 1.3 in male and 0.5 in female. The highest in the country is in Southern Thailand 6.7 in male and 2.6 in female.

Thailand has a mixed racial of Thai, Chinese and Moslem. The difference in incidence in this racial is not significant even though in the Southern in some provinces there are Moslem population as high as 90 percent.

The etiologic factors in various part of the country has

not been determined due to the interest in this problem is not as high as other health problem. There is a survey about nitrate level in drinking water which is low in Southern Thailand. The region is the richest part of the country for fresh fruits and vegetable for all year, and the Moslem do not drink alcohol. We also has the largest series of esophageal stricture from ingestion of strong acid in more than 150 cases and has been followed over 1,000 patient years and found no relation to the development of esophageal carcinoma.

In the past 18 years from June 1982 to December 2000 there were 2,117 cases of esophageal cancer diagnosed in the South. More than 900 cases were treated in our institute. The various treatment options included Surgery, Chemo-therapy and radiation but the main treatment was palliative surgery. We performed both transthoracic and transhiatal esophagectomy. Because most of the tumour are T4N1Mx so the outcome was not quite satisfactory. The morbidity and mortality were high and the long term result was not as good as in Europe or United States.

## UROLOGICAL SURGERY

### Uroflowmetry in Urologically Asymptomatic Thai Subjects

*T. Suchnukanwattana, S. Lohsirivat, A. Tantivongse, S. Soonthapa*

**Objective:** A cross-sectional study was performed to measure uroflowmetric parameters in normal Thai subjects and to compare these parameters among different ages and genders. The correlation between voided volume, peak flow rate and the bladder capacity was also studied.

**Methods:** One hundred and forty healthy Thai subjects (100 young adult aged 18-30 years plus forty pre-elderly aged 50-60 years) were recruited. They were all urologically asymptomatic. Each subject voided urine once into the Dante Urolyn 1000 uroflowmeter. Residual urine measurement was performed using ultrasonography.

**Results:** The following uroflowmetric parameters were obtained. In the young adults, the mean and standard deviation of the peak flow rate was  $31.18 \pm 9.01$  ml/sec, mean flow rate  $22.63 \pm 7.39$  ml/sec, voiding time  $24.72 \pm 10.62$  sec, and voided volume  $376.90 \pm 147.49$  ml. In the pre-elderly subjects, the peak flow rate was  $27.54 \pm 9.22$  ml/sec, mean flow rate  $19.06 \pm 6.23$  ml/sec, voiding time  $24.10 \pm 8.17$  sec, and voided volume  $310.25 \pm 107.84$  ml. The peak flow and mean flow rates in the young adults were significantly higher than those in the pre-elderly one

( $p < 0.05$ ). The voided volume in the young was higher though voiding time did not differ.

Comparing male to female, the peak flow and mean flow rates in female were significantly higher than the male ( $32.48 \pm 9.78$  vs  $27.81 \pm 8.00$  ml/sec,  $p < 0.05$  and  $23.46 \pm 8.09$  vs  $19.75 \pm 5.76$  ml/sec,  $p < 0.05$  respectively). Voided volume and voiding time did not differ among both genders. The peak flow rate and voided volume correlated significantly ( $r = 0.382$ ,  $p < 0.01$ ) indicating the higher the voided volume the higher the peak flow rate. Residual urine was nearly zero in most subjects confirming that they could void completely. The correlation between voided volume and capacity was significant ( $r = 0.999$ ,  $p < 0.01$ ).

**Conclusion:** Uroflowmetric parameters in urologically asymptomatic Thai young adult and pre-elderly subjects were obtained. These parameters vary with age and sex.

### Minimally Invasive Treatment of Ureteropelvic Junction Obstruction

*B. Lertsupphakul, B. Tajarapivat, S. Wudhikarn, S. Soonthornpun, S. Sriplakij, S. Pooriyapun*

**Objectives:** To assess the feasibility, complications and results of endopyelotomy for ureteropelvic junction.

**Methods:** From December 1998 to April 2001, 15

patients with ureteropelvic junction obstruction were diagnosed by intravenous urography, retrograde pyelography and diuretic renography. In all patients, endopyelotomy was performed with a cold knife and an indwelling endopyelotomy stent was left for 6 weeks. Postoperative results were assessed clinically by questionnaire, an intravenous urography, and/or diuretic renography.

**Results:** Clinical success rate was 93 per cent (14 of 15 patients) and radiographic success rate 73 per cent (11 of 15 patients). After median follow up of 11.97 months (range 2 to 28). A minor complication was noted in 4 patients (27%) comprising of prolonged fever and irritative symptom from J stent. Major intraoperative hemorrhage occurred in one patient (7%).

**Conclusion:** Endopyelotomy in ureteropelvic junction obstruction is safe, minimally invasive procedure with high success rate and low recurrent rate. Endopyelotomy should be considered as first line treatment in ureteropelvic junction obstruction, but does not replace open surgery if that becomes necessary.

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#### Vesicourethral Strictures After Radical Prostatectomy: Review of Treatment and Outcome

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W Kochakarn, K Ratana-Olarn, V Viseshsindh

**Objective:** Stricture of the vesicourethral anastomosis is a complication after radical prostatectomy. Urethral dilatation, internal urethrotomy, transurethral resection or laser therapy have been reported as the treatment of this complication. The objective of this study was to present our experience with the management of the vesicourethral stricture.

**Materials and Methods:** Retrospective study of 90 patients undergoing radical prostatectomy for localized prostatic carcinoma was done. The vesicourethral stricture was treated by dilatation, internal urethrotomy, and transurethral resection of scar tissue in all of the patients. Dilatation was done in less severe cases, internal urethrotomy was done in partial obliteration or after failure of dilatation. Transurethral resection was done in the cases of long scar tissue.

**Results:** Ten patients (11%) had anastomotic stricture. The strictures were treated by dilatation in 5 cases, internal urethrotomy in 4 cases and transurethral resection in 1 case. Cure was achieved in all of the patients without incontinence. The median follow-up was 10 months (4-36 months).

**Conclusion:** The dilatation and endoscopic procedures of the vesicourethral stricture showed high cure rate and low incidence of incontinence.

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#### Reconstruction and Transitional Cell Carcinoma of Urinary Bladder

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David E. Neal

Transitional cell carcinoma (TCC) of the bladder is the fourth commonest non-dermatological malignancy in males and eighth commonest in women in England and Wales (12,000 new cases and 5000 deaths per year in England and Wales). About 25 per cent of newly diagnosed patients present with muscle invasive disease and a further 15 per cent have high risk superficial disease (high grade pTa/pT1 or cis) that may require more aggressive treatment such as cystectomy.

Recent data from Herr, Skinner and Studer show that in selected patients cystectomy can be carried out safely in the elderly. These workers have also shown that a radical approach to lymphadenectomy, removing external iliac, internal iliac, obturator and pre-sacral nodes can improve survival. Of patients with positive nodes who are long term survivors, around 25 per cent have metastases only in the internal iliac and pre-sacral areas.

Reconstruction of the urinary tract by means of orthotopic bladder replacement and continent diversion has increased in popularity. Outcome is good, but post-operative complication rates are increased compared to ileal conduit diversion. Our own data from 81 orthotopic reconstructions will be presented in conjunction with a review of the literature.

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#### Thai Capsaicin in Overactive Bladder

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S Soontrapa, A Tantracoungse, S Lerwansanglong, S Srinualnad, T Amornvesukit, S Siotlailakul, B Nonthasoot, T Suehmkanawattana, P Tappayuthpajarn

**Objective:** To treat the overactive bladder caused by detrusor hyperreflexia (in suprasacral cord neuropathic bladder) and detrusor instability (primary) by capsaicin that was extracted from *Capsicum frutescens*.

**Materials and Methods:** Two groups of patients were enrolled. First group, 11 patients with neuropathic bladder and 3 patients with primary detrusor instability; second group, 11 patients with primary detrusor instability. They were treated by intravesical capsaicin concentrated 1 mg/1. in 30 per cent ethanol to half of the bladder capacity for 30 minutes after 2 per cent xylocaine without adrenaline instillation. Patients who could not tolerate the pain were given general or regional anesthesia.

**Results:**

1. Clinical symptoms improved significantly i.e. less frequency day/night



	1st group ( $P < 0.01$ )	2nd group ( $P < 0.05$ )
Pre-installation	16.5 ± 4.8 : 9.7 ± 8.1	19.45 ± 17.99 : 7.09 ± 6.30
Post-installation	8.6 ± 2.5 : 2.4 ± 4.3	12.00 ± 8.91 : 4.09 ± 3.8
Leakage	100% cure	100% cure

2. Maximal bladder capacity increased significantly (ML.)

	1st group ( $P = 0.02$ )	2nd group ( $P = 0.09$ )
Pre-installation	160.1 ± 123.3	197.45 ± 156.06
Post-installation	236.9 ± 146.1	323.45 ± 129.46

3. Detrusor pressure (cm H<sub>2</sub>O) at maximal bladder capacity decreased in 1st group statistically significant at  $P=0.03$ ; but increased in 2nd group statistically not significant at  $P=0.823$

	1st group ( $P=0.03$ )	2nd group ( $P=0.823$ )
Pre-installation	71.1 ± 29.2	32.63 ± 22.76
Post-installation	57.3 ± 27.2	36.63 ± 19.21

4. Voiding pressure (cm H<sub>2</sub>O) decreased statistically not significant, in 1st group and increased statistically not significant in 2nd group

	1st group ( $P=0.32$ )	2nd group ( $P=0.959$ )
Pre-installation	74.8 ± 35.3	47.1 ± 6.4
Post-installation	65.1 ± 35.0	48.1 ± 6.6

The adverse effects were burning pain at suprapubic area, sweating and hematuria.

**Conclusion:** Capsaicin is one of the good appropriate drug to treat overactive bladder and capsaicin can easily extracted from *Capsicum frutescens* which is native plant and inexpensive. Single intravesical instillation can last long from month to year with less adverse effects.

### The Short Term Effectiveness of Doxazosin in Treatment of Benign Prostatic Hyperplasia (BPH) : A randomized double-blinded placebo-controlled trial

A Tantiwong

**Objective:** To compare the percentage of symptom improvement between Doxazosin and placebo after three-month treatment of symptomatic uncomplicated BPH in men age over 50 years old.

**Design:** Randomized double-blind placebo-controlled trial

**Patients:** Thirty-two patients aged 50 years or older with international prostate symptom score (IPSS) 8, peak flow rate 15 ml/sec and without prostate cancer or concurrent treatments for BPH were randomly allocated into 15 cases in Doxazosin group and 17 cases in Placebo group.

**Interventions:** Patients received Doxazosin or placebo 1 mg at bedtime on D1 to D3, 2 mg on D4 to D10 and 4 mg on D11 to D21. At 3-week follow up visit, the global subjective assessment which was the main outcome was evaluated by

one question in order to compare the voiding feeling at that time with the time before treatment. If the subjective symptom was "much improved", the dose was maintained until the end of study. If not, the dose was titrated to 8 mg and maintained until the end. The duration of treatment was three months. The global subjective assessment was determined in every visits at 3, 6, 9 and 12 weeks.

**Results:** By the global subjective assessment, the symptom improvement rate was 84.6 per cent in Doxazosin group and 80.0 per cent in Placebo group. The percentage of 8 mg dosage used in Doxazosin group and Placebo group was 71.4 per cent and 88.2 per cent respectively. The change in IPSS and peak flow rate in Doxazosin group was better than in Placebo group. The adverse effect in Doxazosin group was higher. There was no statistical significance in the difference of all outcomes between both groups.

**Conclusion:** This limited study showed a negative trial but provides a lot of research idea such as the placebo effect, the dosage and the duration of treatment as well as the criteria of outcome evaluation which were very useful in development of further study.

### Malignant Ectomesenchymoma of Penis: A Case Report

L. Tonvichien, S. Temiyasathit

A Thai boy, 11 months old, had slow progressive penile mass for 2 months. He was a healthy boy. Physical examination revealed a rubbery mass, 3 x 2 in size, at penoscrotal area. The mass was fixed to underlying tissue, without tenderness and bruise. There was no palpable inguinal node. Per rectal examination was normal. His chest film and VCUG were normal. He underwent a cystoscopy which revealed normal appearance of the bladder mucosa and urethra. The tumor mass was completely excised via midline ventral vertical incision. A solid tumor, well capsulated, smooth surface, 3 x 2, 5 x 1.8 cm. in size was noted wrapping around the corpus spongiosum and corpus cavernosum hemicircularly. Its cut surface had homogenous grayish appearance. Microscopically the tumor consisted of malignant small round cells, of rhabdomyoblastic element and neuroblastoma with ganglion cell differentiation. The resected margin revealed malignant cell infiltration. Adjuvant chemotherapy by VAC regimen was started on the 12th post operative day. Bone marrow aspiration revealed no tumor cell. He is at present still doing well without any symptom of recurrent tumor, 7 months after surgery.

**Discussion:** Malignant ectomesenchymoma (MEM) is a rare tumor that may arise in the brain or soft tissue. Its components consist of ganglion cells or neuroblasts and one

or more of various malignant mesenchymal elements. Only 13 cases had been reported in the literatures. Two of the 13 were Thai adult males. On the basis of our knowledge, the patient in this report was the first case of MEM of the penis.

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#### Potential Application of A Sentinel Node Procedure for Early Detection of Occult Metastasis in Squamous Cell Carcinoma of Penis (Preliminary Report)

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*B Lertsupphakul, S Soonthornpum, S Boonyaprapha,  
P Mahamudab,*

**Objective:** To study the sensitivity, value and feasibility of the sentinel node for early detection of occult metastasis in patients with squamous cell carcinoma of penis.

**Methods:** From August 2000 to March 2001, 5 patients with T2, clinical negative inguinal node, were entered in this study. To locate the sentinel node, each patient underwent lymphoscintigraphy with  $^{99m}\text{Tc}$ Technetium in the morning of the operative day, and the sentinel node was also identified intraoperatively by using patent blue dye. Then sentinel node was excised and followed by inguinal and pelvic node dissection. All specimens were sent for pathological diagnosis by the same pathologist.

**Results:** Ten groups of the sentinel nodes were studied. One group of the sentinel nodes had metastasis with positive inguinal node and pelvic node. The others nine groups had negative sentinel, inguinal and pelvic nodes. According to the data, sensitivity = 100%, specificity = 100%, accuracy = 100%, no false positive and no false negative.

**Conclusions:** The sentinel node procedure is an advanced and promising staging technique to detect early metastatic dissemination of penile cancer. We continue our research to obtain greater number of patients for clarification.

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#### Orchiopexy of Impalpable Undescended Testis, A Combining Technique of Retroperitoneal and Intracanalicular Dissection with Preservation of Inferior Epigastric Vessels

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*S Teeraratkul*

**Objectives:** To present the technique and results of orchiopexy in children with impalpable undescended testis using retroperitoneal and intracanalicular dissection with preservation of inferior epigastric vessels.

**Materials and Methods:** Orchiopexy was performed on 14 children with clinically impalpable undescended testis. Five cases were bilateral and 9 cases were unilateral

undescended testes. All patients had empty inguinal canal confirmed by ultrasonography. CT scan was done in 5 patients with bilateral undescended testes, in which only two cases had positive results for the position of the testis. The patient ages ranged from 2 to 5 years. Intracanalicular dissection with preservation of inferior epigastric vessels was used. The testis was pull down under the inferior epigastric vessel and the transversalis fascia was cut to shorten the distance in the inguinal canal. The testis was placed in the Dartose pouch of the scrotum. The transversalis fascia, internal oblique muscle and external oblique sheath were closed covering the spermatid contents.

**Results:** Orchiopexy was successfully performed in 13 patients with impalpable undescended testes. The inferior epigastric vessels were preserved. There was a 3 year old boy who need rubber ring to pull both of his testes down and to maintain them in the scrotal sac for two weeks.

**Conclusion:** The intrainguinal canal dissection of undescended testis could lengthen about one forth of the total dissecting length. Cutting the transversalis fascia combining with pulling the testis down under epigastric vessels had the same results in shortening the distance in the inguinal canal. The inferior epigastric vessels should be preserve during, orchiopexy in children.

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#### Urethral Plate Preservation in Hypospadias Surgery, Snodgrass Technique

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*I. Tonvichien, S Temiyasathit*

**Objective:** The goal of hypospadias surgery is to create a penis with both normal function and appearance. Urethral plate preservation technique is one of many techniques for hypospadias surgery with simplicity, feasibility and good result. Our experience of 20 cases in such technique at Queen Sirikit National Institute of Child Health is presented.

**Methods:** Snodgrass technique of hypospadias repair was performed in 20 boys. Six were subcoronal and distal penile type; 11 were penile type and 3 were penoscrotal type. All had moderate to severe chordee. Age ranged from 1 to 12 years. Urethral plate preservation is the principle concept of this technique. The chordee always disappear after degloving the penis proximal to the meatus.

**Results:** The operative time was 60 to 100 minutes. Length of stay ranged from 2 to 10 days. All patients had follow up between from result (good appearance and no complication). Seven cases had flap edema and developed pinhole fistula. The last one case had flap necrosis and developed fistula, with subsequently scar contracture. Urethral stricture was not noticed in any patients.

**Conclusion:** Eventhough high percentages of fistula complications (40%) were noticed in our experience but they were easy to repair. The advantages of this technique include its simplicity, versatility, durability, very good appearance of the glans penis and cosmatically normal meatus in most boys.

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### The Experience in Percutaneous Endopyelotomy in Rajavithi Hospital: Upper Pole Approach with Sachse Internal Urethrotomy

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*D Akarasakul*

**Objective:** To investigate the effectiveness and morbidity of percutaneous endopyelotomy in Thai patients with UPJ obstruction.

**Materials and Methods:** Four patients (3 women, 1 man) underwent percutaneous endopyelotomy in the treatment of secondary UPJ obstruction. All procedures were performed using Sachse's internal urethrotomy to divide the stricture. 14 F-D-J stents were placed in the ureter except one small girl that 6-F-D-J stent was placed for about 2-weeks. Radiographic follow-up of 3 months was obtained using IVP, ultrasonography or renal scan.

**Results:** With follow-up of 6-12 weeks, the success rate was 100 per cent, only one case had a complication of pleural effusion.

**Conclusion:** Percutaneous endopyelotomy is an effective, minimally invasive treatment option for patients with UPJ stricture.

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### Minimal Tension Pubovaginal Sling for Stress Incontinence: Preliminary Report

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*A Santingamkun, P Bunyaratavej*

**Background:** Pubovaginal sling is a well-accepted operation for the patients who have stress urinary incontinence both type 2 or type 3. But this procedure has some problems about postoperative urinary retention and de-novo detrusor instability. In 1999, Ulmsaten reported the innovative devise and procedure, Tension free Vaginal Tape (TVT), which minimised postoperative complication of pubovaginal sling. The concepts of tension free and mid-urethral placement of sling are interesting; also, longterm results of TVT are good. So we have modified the concepts of TVT to the pubovaginal sling procedure by reducing tension and mid-urethral placement of the sling.

**Methods:** We performed the minimal tension to 12 patients. We used Polypropylene mesh and autologous rectus sheaths to be the slings. The slings were placed only

on mid-urethral segments, which was carried out by No. 1 Prolene suture and pubo-vaginal slings tied together on anterior rectus sheaths with minimal tension.

**Results:** In the early cases, we retained the Foley catheter for 3-4 days but in the last 5 cases we removed the catheter the following morning after the operation. There was one case that had symptoms of difficulty urination and high residue urine that we had to release the tension on the third day post-operation. For other cases, no other complication was observed and the patients went home the day that catheters were removed. All cases had subjective symptoms of complete dryness at 2 weeks post-operation. Mean follow-up was in 5.2 months. We found one case had some degrees of incontinence at 3 months postoperation. But the others remained completely continent subjectively.

**Conclusion:** We found that minimal tension pubovaginal slings were effective for correction of stress incontinence. The hospital stays were short with minimal complication. Short term results were good.

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### Laparoscopic Urologic Surgery in Chulalongkorn Hospital

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*A Santingamkun, J Opanurak, S Ratchanon, S Laornahu*

**Introduction:** Since the first laparoscopic transperitoneal nephrectomy was described by Clayman in 1991, the indications for laparoscopy in urology have been growing rapidly because of the reduced invasiveness of treatment and shorten the period of convalescence. Many urologists in Thailand have been increasingly interested in this field of surgery in the recent years. We review our early experience of laparoscopic urologic surgery in our institution.

**Methods:** We performed 25 cases of laparoscopic surgery for varying benign urological pathologies from March 2000 to April 2001. The 9 adrenalectomy, 1 pyelo-plasty, 10 nephrectomy, 1 nephrectomy with cholecystec-tomy, 1 renal cyst ablation, 1 renal cyst and liver cyst ablation, 1 orchietomy, and 1 laparoscopic diagnosis for undescended testis. Operative technique, operating time, opiated analgesic use, hospital stay and complication were recorded.

**Results:** The operations were completed successfully in 22 cases without intraoperative complication. There were 3 conversions: 2 nephrectomy, 1 renal cyst ablation. There was no major postoperative complication, only one of wound hematoma. Operative time and hospital stay were varying to each operation and analgesic use was minimal.

**Conclusion:** Our early experience of laparoscopic urologic surgery showed that the operations could be satisfactorily performed. But the conversion rate is still high during this learning period. The overall results were good with minimal complication.

## Letter to the Editor

12 December, 2001

Dear Editor,

Referring to the special article entitled "Paediatric Urology in Thailand" by PA Dewan, published recently in the Thai Journal of Surgery (2001; 22(2):39-42), there are some statements which distorted the fact of paediatric urology in Thailand. I appreciate in the good intention of the author to paediatric urology circle in Thailand. But his statement appeared in the article that "Paediatric Urology is a new subspecialty, with only one unit existing in the country" cant not be accepted to be true.

We all aware that therer is no single official Department of Paediatric Urology in Thailand, the care of such patients is under the responsibility of either urologist or paediatric surgeon. Being awarded British Council Scholarship, I got an opportunity to had paediatric urology training between October 1983 to October 1984 at Hospital for Sick Children, Great Ormond Street, London where DI Williams, the world renowned pioneer paediatric urologist and his successor, PG Rensley have made this institute the international Mecca of paediatric urologists from all over the world. After coming back to Thailand, I have engaged myself in paediatric urology field for more than 16 years. During the last 10 years at Faculty of Medicine Siriraj Hospital, more than 90 per cent of my work was in paediatric urology cases. At least, 2 days a week, one operating room is dedicated to padiatric urology patients. The operations mentioned in the article are not new at all. All of them have been performed in Siriraj Hospital for many years.

Many new and latest popular surgical techniques including epispadias repair: complete penile disassembly technique, single stage combined extrophy closure and urethral reconstruction and nerve

sparing clitoral reduction in patient with congenital adrenal hypoplasia, to name a few, are not referred to at all.

According to the facts mentioned above, the author's statement that Paediatric Urology is a new subspecialty, with only one unit existing in the country is groundless. A service of more than 10 years cannot be regarded as new at all. For correct understanding among the members of the Royal College of Surgeons of Thailand, I would like to ask you to bring this letter to public attention in the Thai Journal of Surgery.

Yours Sincerely,

**Phichaya Sujjantararat MD, FACS (T)**

The above letter was referred to the attention of the author of the said article, who offered the following reply.

Dear Sir,

Thank you for forwarding the letter regarding my article. I apologize for any error of fact in the article and I am delighted that the content of the paper has been scrutinised by someone with such insights. I would hope that the article and the letter both provide a stimulus to high quality Paediatric Urology service, which has obviously been in existence for much longer than I was aware.

Kind regards

**PA Dewan, PhD, MD, FRCS, FRACS**