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Abstracts
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UROLOGY SURGERY

Tubeless Percutaneous Nephrolithotomy in the Selected Cases

B Lojanapiwat, S Soonthoraphan, S Wudhikarn

Introduction: The last step after the completion of PCNL is the placement of nephrostomy tube. The purpose of the tube is to provide hemostasis along the tract, avoid urinary extravasation and adequate drainage of the kidney. Significant early postoperative discomfort after PCNL is usually from the large nephrostomy tube. In the selected patients, after PCNL, only externalized ureteral catheter indwelled for a short period can reduce postoperative discomfort without complication.

Patients and Methods: A total of 20 patients underwent tubesless PCNL (group I) was compared to 20 patients with routine placement of postoperative nephrostomy tubes (group II). We selected the patients as group I if only one access site was used, the renal unit was not obstructive, no significant perforation and re-operation due to bleeding, and a second look was not required without concerning of stone burben. The incidence of complication, analgesic requriement, length of hospitalization were compared between the 2 groups.

Results: Patients of both group underwent the procedure successfully without major complication. A 90 per cent stone-free rate was achieved in both groups, and 10 per cent of both groups had stone fragment 4 mm. Average length of hospitalization was 4 days for group I and 5.15 days for group II ($p<.001$). Average intramuscular analgesic requirement in group I and II were 22.5 and 52.5 mg. of meperidine, respectively ($p = .027$). Intramuscular analgesia was not required in 60 per cent of group I. Average change of hematocrit in group I and II were 2.25 and 2.4 per cent, respectively.

Conclusion: Tubeless percutaneous nephrolithotomy in the properly selected patients with only externalized ureteral catheter was safe and significantly reduce the length of hospitalization and postoperative analgesic requirement.

Irrigation of the Distal vas Deferens During Vasectomy; Does It Accelerate the Post Vasectomy Sperm-free Rate?

A Lertsuwannaroj, S Leungwattanakit, K Ratana-Olarn

Purpose: Vasectomy is among the safest and most reliable method of contraception but its disadvantage is delayed sterility. In Thailand, as elsewhere, there has been difficulty in making a vasectomized man to realize that he is not azoospermic until at least 10 weeks postoperatively. It is thus important to counsel him about the post-vasectomy azoospermia. In our search for a method to shorten the time to sterility, we compared two groups of men undergoing vasectomy; NSS irrigation of the distal vas deferens and the control group in no-scalpel vasectomy to observe postvasectomy sperm-free rates.

Material & Method: A prospective, randomized, partially blinded controlled trial was conducted. Immediately postoperative urine examination was collected and examined. Later, semen analyses were caried out at 2, 6, 12 weeks to ascertain of azoospermia.

Result: The study included 62 men seeking vasectomy. In NSS irrigation group (31 men), post vasectomy urine examination significantly showed more spermatozoa than the control group (31 men) ($p=0.000$, Mann Whitney tests) but it did not shorten the time needed to reach sterility as shown in the comparison of total sperm counts

in both groups during 2, 6, 12 weeks post vasectomy ($p>0.05$, Mann Whitney tests).

Conclusion: Theoretically, irrigation of the vas deferens should flush spermatozoa from the distal vas deferens through the ejaculatory ducts and facilitate the speed at which seminal specimens to become azoospermia. Our results indicated that irrigation of the distal vas deferens during vasectomy did not acelelate the post vasectomy sperm-free rate than the standard no-scalpel vasectomy. It might be possible that the irrigation technique could not completely flush the spermatozoa and some still remained in the distal vas deferens and seminal vesicle.

Internal Ureteral Stent Patency: Role of Dopper Ultrasound

C Dejputtawaj, B Lojanapiwat, M Muttarak

Introduction & Objective: Internal ureteral stents are commonly used in urologic practice. One of the complication of internal ureteral stent is stent obstruction. We compared Color doppler ulrasound which is noninvasive method to the indirect method Voiding cystourethrogram for the assessment of stent patency.

Patients and Methods: 27 stents of 26 patients which suggested to stent obstruction from April 1999-April 2000 were studied with both Color dopper ultrasound and Voiding cystourethrogram before stent removal. Stent patency was proved by subsequent direct inspection of the stent after its removal.

Results: The accuracy of Color doppler ultrasound, Voding cystography and combined both method is 77, 74, and 85 per cent respectively. Each one or both method which showed possitive result, all stents in this group are patent. Eight stents that were negative for both method were 50 per cent patent.

Conclusion: Color doppler ultrasound is a valuable noninvasive method for assessment of internal ureteral patency. Lack of detectable jets may or may not indicate on obstructed stent.

Effectiveness of Behavior Therapy (BT) in BPH Treatment

A Tantiwong

Objective: To determine the prevalence of symptomatic BPH in community. To compare the outcome of Behavior Therapy and natural history of BPH.

Materials: Elderly males age 60 years in the communities around Siriraj Hospital were studied between 1997-1999.

Methods: Eight hundred and seventy nine participants were interviewed using International Prostate Symptom Score (IPSS) questionnaire. Symptomatic BPH was defined as score in IPSS is more than 7 in the total of 35. Community follow-up was completed after one year and 254 participants were overall assessed. Their natural history was classified into 3 categories "improved", "same" and " worsen". Baseline IPSS, quality of life (QOL) score and peak flow rate were evaluated. Behavior therapy consisted of bladder training, adjusting of water intake and periodic exercise as advised. After 3-6 months, 141 persons participated in BT were reevaluated. Complication of BPH occurred within the two periods was also determined.

Results: Prevalence of symptomatic BPH in Thai community was 41.3 per cent. Overall assessments in natural history and BT were 7.9 and 27.7 per cent for "improved", 78.3 and 66.7 per cent for "same", and 13.8 and 5.7 per cent for "worsen", respectively. IPSS, QOL and peak flow rate were also improved after BT with statistical significance. There was no difference in the complication rate during the period of natural history and Behavior Therapy.

Conclusion: Behavior Therapy should be an alternative treatment for BPH in community. It improves symptoms, quality of life and flow rate without increasing any cost.

Pubovaginal Sling for Treatment of Female Stress Urinary Inconntinence: Experience of 100 Cases at Ramathibodi Hospital

W Kochakarn, K Ratana-Olarn, C Leenanupunch, U Roongreungsilp

Objective: To evaluate the outcome of pubovaginal sling in treatment of female stress incontinence.

Methods: From September 1997 to January 2000, one hundred consecutive patients with urodynamically proven stress incontinence had a pubovaginal sling procedure performed. Operative technique, intra and post operative complications, voiding patterns, residual urine volumes and the follow-up course were reviewed.

Results: Of one hundred cases, the mean patient age was 52.6 years old (range 34-73 years). The etiologies of stress incontinence were 85 cases of hypermobility and 15 cases of intrinsic sphincter deficiency. Eighteen cases were after failure of prior continence procedures. No intraoperative and post operative complication was noted. Minimal bleeding was encountered and Foley's catheter

was used to provide urinary drainage for 5 days. Marked residual urine (>100 cc) was found in 39 cases and needed clean intermittent catheterization for the mean duration of 8.9 weeks (range 2-12 weeks). The mean follow-up time was 8.3 months (range 4-36 months) with 94 cases completely dry, 5 cases much improved and only one case failed. De novo instability was found in 5 cases.

Conclusion: On the basis of these results, we propose that pubovaginal sling is an effective treatment for female stress incontinence with minimal complication.

How Do We Treat a Patient with Overactive Bladder

S Sivilaikul, S Soontrapa

A Thai female 66 years of age came to the hospital with the symptoms of pollakiuria, day: night = 10:5-8 painful urination especially terminal dysuria since March 1997. Urine analysis, uroflowmetry and cystoscopy were performed. The result showed pyuria, low peak flow and small bladder capacity. Urine culture was negative for organism. The provisional diagnosis was interstitial cystitis. The patient was treated by antibiotics, antimuscarinics and smooth muscle relaxant. Her symptoms did not improved. She was admitted and bladder hydrodilatation was performed but her symptoms subsided for only a few months. She was admitted for the second time and capsaicin instillation was administered using a volume of 30 ml. Again after a few months of relief, her symptoms came back again. Finally she was admitted for the third time and now capsaicin 300 ml was instillated. After uneventful was free of this time she recovers from the distressful symptoms. At few months after last treatment her urination day: night 3-4:2 and had been free of painful urination.

The Tension-free Vaginal Tape Procedure for Stress Incontinence: A Minimally Invasive Surgical Procedure

W Kochakarn

Objective: Tension-free vaginal tape (TVT) is gaining popularity as an effective treatment for genuine stress urinary incontinence. To better understand this procedure including its results, we retrospectively study to determine surgical technique, effectiveness, safety and early results of this new continence procedure.

Methods: From April 1999-April 2000, ten female patients with the mean age of 46 years old underwent the TVT procedure. Follow-up study was made at the 3 months post operative. The procedure as performed through a small incision at mid urethra and a TVT set was used. Urethral catheter was indwelled for urinary drainage and was removed on the second post-operative day. Operative time, post operative course, voiding patterns and residual urine were recorded.

Results: Mean operative time was 32 minutes (range 20-45 minutes). Up to 3 months, all patients were subjectively cured. Seven cases were released from the hospital on the 3rd day and three cases on the 5th day after the operation. No significant per and post operative complication including blood loss, wound infection, and severe pain were encountered. Five cases (50%) had marked residual urine (>100 ml) and needed clean intermittent catheterization for the average of 5 days (range 1-14 days)

Conclusion: Although the follow up period was short, the TVT procedure appeared to be safe and effective method for the treatment of stress urinary incontinence.

Surgical Outcomes of Exstrophy-epispadias Complex

P Sujijantararat, A Chotivichi

Purpose: To review the outcome of surgery for bladder exstrophy-epispadias complex.

Materials and Methods: Operative reports and clinical records of 12 patients (7 boys, 5 girls) who underwent surgery for exstrophy-epispadias complex at Department of Surgery, Songklanakarindr Hospital between 1986 and 1991, and at Department of Surgery, Siriraj Hospital between 1992 and 2000 were analysed. Two of them had previous fail closure attempt. Age at the time of operative repair ranged from 1 day to 14 years (mean 4.3 years). The disease complex comprised 7 classic exstrophy cases, 4 epispadias and 1 superior vesical fissure.

Results: For classical exstrophy group, cystectomy was carried out in 2 patients due to small bladder plate and/or upper tract deterioration. Four patients underwent staged closure and bilateral iliac osteotomy while the last one had single state repair. Wound dehiscence was found in only one girl aged 14 years. Of epispadias group, clitoroplasty was performed in one girl. Ransley-Cantwell technique was employed in the first boy which later had complete penile disassembly. The remaining two boys underwent complete penile disassembly at the outset. Satisfactory cosmesis was obtained in all patients. The single patient with superior vesical fissure required bladder closure on the first day of life. Regarding bladder neck repair, Young-Dees-Leadbetter operation was performed in 3 patients and Pipe-Salle in one. Continence was achieved

in three patients. The fourth patient still had urinary leakage at intervals, even though of lesser degree. Continent diversion using 2nd generation Mitrofanoff was carried out in one girl whose urethra was eroded by metal wire used in symphyseal approximation during bladder closure attempt.

Conclusion: Good results were obtained when the functional closure of bladder exstrophy was performed early in neonatal period, preferably within 72 hours after delivery. As for the bladder neck repair, Young-Dees-Leadbetter operation yielded continence in over half of the cases in this report.

Anterior Urethral Valve

P Sujijantararat

Congenital anomalies of anterior urethra in boys other than hypospadias are rare. As such, they are difficult to diagnose and on many occasions, overlooked by attending surgeons who might be unaware of them. Congenital saccular diverticulum has thin common wall with the distal urethra. During micturition, the diverticulum is filled up and the common wall acts as "valve" obstructing urine flow. Herein, 2 cases of the anterior urethral valve resulting in difficult urination in boys were reported. Diagnosis was made by voiding cystourethrography which displayed linear filling defect between the collapsed distal urethra and oval-shaped saccular diverticulum. The valves in both cases were successfully ablated transurethrally.

Retroperitoneal Lymph Node Dissection for Non Seminomatous Germ Cell Tumour: Two Cases Report

T Amornvesukit, S Leewansangton, T Wattanapraditchai, C Nualyong

Testicular tumour, although rare, is the most common solid malignancy in men from ages 15 to 35. The histology of this germ cell tumour is devided into seminoma and non seminoma groups. When non seminomatous germ cell tumour (NSGCT) is diagnosed, retroperitoneal lymph node dissection (RPLND) is an option for the low stage tumour, and is a standard treatment for the residual disease after primary chemotherapy has been introduced for the bulky tumour.

Objective: To report results of RPLND in two cases of NSGCT who had tumour of different stages.

Patients and Methods: The first case was a 31-year-old male who presented with painless left testicular mass. Histology of orchiectomy specimen revealed mixed germ cell tumour which mainly comprised of embryonal cell carcinoma. Post orchiectomy serum alpha fetoprotein and beta human chorionic gonadotropin were still elevated. Modified nerve sparing RPLAND was performed successfully. The second case was a 35-year-old male who presented with right testicular mass and the histology of this testicle was endodermal sinus tumour and seminoma. Computerized scan (CT scan) of the abdomen revealed bulky mass in the retroperitoneum and clinical stage T2C was diagnosed. Therefore primary chemotherapy was introduced. Repeated CT scan post chemotherapy still demonstrated residual tumour in the retroperitoneum, and conventional bilateral RPLND was eventually performed.

Results: There was no complication occurred in both cases. The histology of the specimen of both cases revealed more than 40 lymph nodes contained tumour.

Conclusion: RPLND is an elaborate operation which required good surgical skill and technique to perform. However, RPLND can yield a good results for NSCGT in selected cases.

Intravesical Formalin Instillation and Topical Application Formalin Soaked Pledgets to Control Intracable Hemorrhage Due to Radiation Cystitis

S Wudhikarn, P Thammasorn, S Pooriyapan, B Lojanapiwat, S Soontormpun

Objective: To determine the effectiveness, efficiency, safety of intravesical formalin instillation, and endoscopic topical placement of formalin soaked pledgets in hemorrhagic cystitis following irradiation for cancer of the cervix.

Method: Records were reviewed for 19 patients with intractable hemorrhagic radiation cystitis who underwent treatment with intravesical formalin instillation (n=11) or topical application of formalin soaked pledgets (n=8), from Jan, 1994 to Apr, 2000, at Maharaj Nakorn Chiangmai Hospital.

Results: Favorable response (82% vs 87.5%, p=0.05), minor complications (73% vs 38%, p=0.05), major complications (36% vs 0%, p=0.05), and recurrent hematuria (20% vs 38%, p=0.05) were not significantly different between both groups. Major complications were seen in 4 patients who treated with intravesical formalin instillation, with one patient died of pulmonary metastasis and probable formalin toxicity and 3 patients required surgical interventions. There was statistical difference in the length

of surgery (20 min vs 110 min, $p<0.05$) and the average cost (1300 Baht vs 2900 Baht; $p<0.05$).

Conclusion: Endoscopic placement of formalin soaked pledgets to control localized hemorrhage due to radiation cystitis was as effective as intravesical formalin instillation but required longer operative time. However, the latter technique may be safer.

Radical Prostatectomy for Localized Prostate Carcinoma: Siriraj Experience

C Nualyong, T Bhanalaph, S Leewansangton, A Tantiwong, S Soontrapa

Objective: To identify the initial result of radical prostatectomy for localized prostate cancer performed in Siriraj Hospital.

Materials and Methods: Retrospective study was made by reviewing records of patients who had localised prostate carcinoma and underwent radical prostatectomy between June 1994-May 2000. Demographic data, initial PSA, pre and postoperative staging, morbidity and efficacy of the treatment in short follow-up periods were analysed.

Results: There were totally 30 cases in the study with the patients' age ranged between 51-76 years (mean = 65.7). The follow up periods ranged from 1-71 months (mean 12.5). Preoperative PSA (29/30) levels were 1.9-60 ng/ml (mean = 19.75). The histology proved to be cancer were obtained by transrectal ultrasonography (TRUS) + biopsy and transurethral resection of prostate (TUR-P) in 76.7 and 23.3 per cent rspectively. The preoperative stages were T1, T2 and T3 in 40, 50 and 10 per cent respectively. The operative time ranged between 120-240 min (mean = 178.5) and intraoperative blood losts were 500-4000 ml (mean = 1288). Blood transfusions were required in 26 of 30 cases with the amount ranged between 1-8 units (mean = 2.38). There were no major perioperative morbidity apart from bleeding. The pathological stages were T1, T2 and T3 in 20, 26.7 and 53.3 per cent respectively. There was one case who had positive pelvic lymph node. There was no overstaging but understaging were found in 53.3 per cent and pathological positive margins were encountered in 8 cases (26.7%). Mild degree of urinary incontinence was found in 4 cases (13.3%). Adjuvant therapies were required in 10 cases which were radiotherapy, hormonal ablation and combined therapy in 1, 8 and 1 cases respectively. Biochemical failures (rising PSA) were encountered in 5 patients at follow-up periods ranged between 2-24 months (mean = 7).

Conclusion: Radical prostatectomy for localised prostate cancer appears to be safe in our early experience. Apart from bleeding, there was no serious complication. Understaging is still clinically significant which can lead to unsatisfactorly results. Long term follow-up data are needed to identify the efficacy of this treatment.

The Risks of Lymph Node Metastasis and Prognostic Factors of Carcinoma of the Penis: Analysis of 50 Patients Treated with Bilateral Ilioinguinal Lymphadenectomy

S Leewansangstong, T Taweemonkongsap, S Srinualnad, S Soontrapa, B Chaiprasit

Objective: To determine the risks of inguinal and pelvic lymphnode metastasis as well as the prognostic factors of carcinoma of the penis.

Methods: Fifty consecutive patients with squamous cell carcinoma of the penis underwent immediate bilateral ilioinguinal lymphadenectomy after treatments of primary tumor. Clinical features were evaluated to determine the risks of inguinal and pelvic lymph node metastasis as well as the prognostic factors.

Results: The status of clinical inguinal lymph node was significantly related to the incidence of inguinal lymph node metastasis. For the risk of pelvic lymph node metastasis, the significant variable factor was histological grade. The prognostic factors significantly related to the survival were the status of clinical inguinal lymph node, histological grade and the status of pathological lymph node metastasis (N stage). None of the patients with stage N0 and N1 succumbed during the follow-up of 85 and 67 months, respectively. The cumulative survival was 0.6 at the follow-up of 36 months for the patients with stage N2. For patients with stage N3, the cumulative survival was 0.5 at the follow-up of 18 months.

Conclusion: The status of clinical inguinal lymph node was related to inguinal lymph node metastasis. Histological grade was related to pelvic lymph node metastasis. The status of clinical inguinal lymph node, histological grade and pathological N stage were the prognostic factors.

Serum Vitamin B12, Folic Acid and Hematologic Status in Patients with Neobladder After Radical Cystectomy

S Wudhiharn, S Linpisarn, S Puriyapan

Background: Radical cystectomy is surgery of choice for invasive bladder cancer both construction of Mainz

pouch which requires 24 cm of terminal ileum and 12 cm of ascending colon including ileocecal valve or ileal conduit with 15 cm of terminal ileum may lead to metabolic disturbance. At the same time, reduction of intestinal absorption area may impair some vitamins metabolism such as vitamin B12 and folic acid in these patients.

Methods: Hemoglobin, hematocrit, serum ferritin, serum vitamin B12 and serum folic acid were determined in 27 patients with neobladder after radical cystectomy; 17 patients with ileal conduit and 10 patients with Mainz pouch method. The post operative period was between 7 months and 10 years. Results of both types of operation were compared.

Results: Hemoglobin and serum vitamin b12 below reference level were found in 7 of 26 patients (27%) and 6 of 27 patients (22.2%) respectively. The level of serum folic acid was normal in all patients. None of the patient developed neither iron deficiency anemia nor megaloblastic anemia. There was no statistical significant difference in all biochemical parameters between the two groups.

Conclusions: A loss of terminal ileum seems to affect serum vitamin B12 level. Furthermore, anemia due to other causes are common in these patients. Thus, in addition to regular examinations, vitamin B12 determination and hematologic status evaluation should be considered.

Urethroplasty for Posttraumatic Posterior Urethral Stricture: Siriraj Experience

C Nualyong

Objective: To assess the outcome of urethroplasty for posttraumatic posterior urethral stricture.

Materials and Methods: All male patients with posttraumatic posterior urethral stricture who underwent urethroplasty procedures in the urological unit at Siriraj hospital from January 1995-June 2000 were included in the study. The deta of initial management by the primary hospitals, prior surgical manipulations carried out elsewhere, techniques of urethroplasty, results and complications, especially incontinence and impotence, were collected and analysed.

Results: A total of 50 patients were included in the analysis. The follow-up period ranged from 1 to 45 months (mean 15.3±11 months). All patients had initial management for acute urethral disruptions from primary hospitals as follows: 39 patients (78%) had suprapubic cystostomy alone and 11 patients (22%) had suprapubic cystostomy plus urethral realignment. Twenty-nine patients (58%) had failed urethral surgery for stricture corrections when referred. Three techniques of urethroplasty; perineal urethroplasty; perineal urethroplasty with inferior pubectomy and combined abdomino-perineal transpubic urethroplasty were done in 28 (56%), 17 (34%) and 5 cases (10%), respectively. Perioperative complications occurred in 3 patients (6%) which were two wound infections and one rectal injury. There were 6 patients who lost to follow. The overal success rate was 66 per cent (32/44). Urinary incontience occurred in 31 per cent (14/44) but 11 of these were mild. Impotence existed preoperatively in 27 cases (54%). Four of 18 cases (22.2%) experienced poorer erectile function postoperatively.

Conclusion: The outcome of urethroplasty for posttraumatic posterior urethral stricture was successful in 66 per cent. Although the incontience rate was high, most of them were mild. Postoperative impotence rate was high and should be discussed with patients prior to surgery.

The Risks of Prostate Cancer in Thai Men with Abnormal Prostate-specific Antigen or Abnormal Digital Rectal Examination Detected by Transrectal Ultrasound Guide Biopsy

S Leewansangton, C Nualyong, A Tantiwong, S Soontrapa, S Ratanarapee

Objective: To determine the risks of prostate cancer detection in Thai men with abnormal prostatic-specific antigen (PSA) or abnormal digital rectal examination (DRE).

Materials and Methods: One hundred and forty four Thai men with abnormal PSA or abnormal dRE or both were biopsied at prostate gland with the use of transrectal ultrasound guide biopsy (TRUSBX). The risks of prostate cancer were evaluated.

Results: Mean age was 65.7 years old (s.d. = 9.88). The rates of postive biopsy according to the PSA levels of 0-4 ng/ml, 4.1-10 ng/ml, 10.1-20 ng/ml, 20.1-50 ng/ml, 50.1-100 ng/ml and more thna 100 ng/ml were 6.25, 6.67, 10.8, 33.3, 60 and 100 per cent, respectively. The rates of positive biopsy according to DRE appearances of total hard consistency, nodule, induration and benign prostatic hyperplasia were 57.1, 23.5, 34.6 and 10 per cent, respectively. Of 144 men, 32 had adenocarcinoma of prostate. Of 15 patients who had clinically localized disease and underwent radical prostatectomy, 10 (66.6%) had free margin on their pathological specimens and 6 (40%) had organ confined disease.

Conclusion: PSA testign alone or DRE alone is not a

perfect test to diagnose prostate cancer since prostate cancer may present in men with normal PSA or men with no suspicious cancer by DRE. For early detection of prostate cancer, both PSA testing and DRE need to be performed. When either PSA testing or DRE or both are abnormal, transrectal ultrasound guided biopsy should be carried out.

Indiana and Modified Indiana Pouch: Ramathibodi Experience

C Lewenanupunth, K Ratana-Olarn, W Kochakarn, V Viseshsindh

Purpose: We reported the results of continent cutaneous ileocecal reservoirs (Indiana punch) and modified Indiana pouch in our institution. The selection of the patient, surgical technique and caring of the pouch were presented.

Materials and Methods: Between March 1998 and March 2000, Indiana pouch and modified Indiana pounch were performed in 6 patients. Five patients had invasive bladder cancers who required radical cystectomy. One patient had vesico-vaginal fistula after radiation. We followed and analyzed the complications, metabolic changes and functional results.

Results: The median followup of the patients was 12.5 months (range 3-24). The followup examinations with excretory urography showed no upper tract obstruction. The pouchogram showed no reflux and interviews revealed satisfactory day and night continence. Catheterization in all patients was easy. Serum electrolytes, BUN and creatinine were not significantly changed.

Conclusions: In our experience, Indiana and modified Indiana pouch should be considered for any patient requiring continent cutaneous urinary diversions because of a low complication rate and excellent continence rate.

CARDIOTHORACIC SURGERY

Chest Trauma

K Chaiyasate, W Nawarawong

Background: Empyema remains a distressing complication after thoracic injury. Any measure which reduces the incidence of infectious complications after closed tube thoracostomy should be considered. Most of recent studies have supported the use of antibiotics in chest tube placement, however, this issue remains controversial in clinical practice.

Objective: To evaluate the safety and effectiveness of antibiotics in reducing the infectious complications following closed tube thoracostomy for isolated chest trauma.

Design: Prospective randomized clinical trial

Setting: Medical school affiliated large urban teaching hospital

Patients: Thirty patients over 8 months old requiring closed tube thoracostomy for isolated chest injuries (22 blunt, 8 penetrating). The majority of patients received chest tube placement in the emergency room with a small number of delayed pneumothorax (2 patients) and delayed hemothorax (2 patients) which were treated after admission.

Intervention: The patients being randomized into two treatment limbs based on the addmission number digit. The experimental group (Group 1) included 16 patients who received Cefazolin (1.0 g IV q 6 hr) commencing before tube thoracostomy and terminating within 12 hours after its removal. The control group (Group 2) included 14 patients received no antibiotic therapy. The incidences of infectious complication (pneumonia) and/or empyema were recorded.

Results: Overall incidence of infectious complicat-

ions in this study was 6.6 per cent (2 of total 30 patients). Among the patients not receiving antibiotics, one of the 14 who had developed empyema required 2 chest tube reinsertions and antibiotics. Of the patients receiving antibiotics, there was one infectious complication (empyema) who was treated by VATS and was readmitted after discharge because of pneumonia. Patients who developed infectious complications averaged 13 days longer hospitalization than those without. No significant differences with antibiotic use were seen in the incidence of infectious complications, duration of chest tube placement, or length of hospitalization.

Conclusion: In this study, antibiotics were ineffective in reducing the incidence of infectious complications in patients with isolated chest trauma. We recommend adherence to the standard surgical principle of completed evacuation of hemothorax, complete re-expansion of the lung, and meticulous sterile technique to minimize the incidence of infectious complication after tube thoracostomy rather than the routine usage of prophylactic antibiotics.

Technique and Results of Thoracoscopic Sympathectomy for Primary Hyperhidrosis: Two years experience at The Police General Hospital

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W Watchirapunyanukul, A Montamara, W Whantong, R Hakeem, P Sukosit, C Pruksapong

Thoracoscopic sympathectomy has been proven to be the most effective treatment for upper limb primary hyperhidrosis with relatively few adverse events. Yet, the procedure is known and was performed by only few surgeons in Thailand.

Objectives: To describe the technique of thoracoscopic sympahtectomy and also to quantitatively evaluate the results of treatment from two-year experience at the Police General hospital.

Materials and Methods: The procedure is performed while the patient is in a lateral position with double lumen intubation. The sympathetic ganglion was identified and ablated with electrocautery via a thoracoscope inserted through a small incision made at the armpit. To evaluate the results of treatment, adverse events, quality of life and satisfaction of the treatment, questionaires in a form of Linear analogue score was mailed to the patients. Seventy two of 105 consecutive patients (68.57%) who had the operation performed during February 1998 to May 2000 completed the questionaires and were evaluated.

Statistical analysis: Linear analogue score and Student's t-test were used for statistical analyses.

Results: Palmar sweating reduced from a mean score of 9.224 preoperatively to 0.528 after sympathectomy (P<.001); for axillary sweating 4.7200 to 3.6900 after T2 sympathectomy and 8.6000 to 3.111 after T2+3 sympathectomy (P<.001), for facial sweating 5.6875 to 1.5455 (P<.001), for plantar sweating 8.8714 to 5.1159 (P<.001). Sixty one patients (84.7%) felt their quality of life had markedly improved after the operation while six (8.3%) felt the opposite. Compensatory sweating occurred in more than ninety percent of the patients and was the main cause of dissatisfaction (16.7%) and worsening in the quality of life (8.3%). Minor complications occurred in a few patients and without major postoperative complications.

Conclusions: Thoracoscopic sympathectomy is safe and effective for the treatment of primary hyperhidrosis especially of the upper limb. The technique is simple and easy to perform if the surgeon familiarizes himself to the anatomy of the pleural cavity. However, compensatory sweating may occurred in a significant number of patients and is the main contributory cause of dissatisfaction to the treatment. T2+3 sympathectomy may be the optimum treatment for concomitant severe axillary hyperhidrosis.

Hanging Suture Facilitates Easy Control of a Stab Wound at the Anterior Portion of Pulmonary Artery

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E Kajanaghan, N Santragoon, S Wattansirichaigoon

A 29-year-old schizophrenic woman presented with commiting suicide. She stabbed herself through the second intercostal space closed to the left border of sternum. Due to clinical shock and cardiac tamponade, she underwent emergency sternotomy. The operative finding revealed through-and through lung tear and vigorous bleeding from internal mammary artery and pulmonary artery. A 1-cm- long stab wound found at the anterior portion of pulmonary artery was 1.5 cm away from the upper border of pulmonary artery. Three attempts of vascular clamp application failed to control bleeding point due to non-bulging and flabby wall of pulmonary artery. A Hanging suture was placed at the tip of the wound closed to index finger that occluded the lacerated wall. When the suture was lifted up, two sides of the lacerated wound opposing each other, thereby stopping the bleeding. Immediately, vascular clamp could be easily applied and the wound was repaired. The patient had an uneventful recovery and was discharged from surgical service on postoperative day 9.

Control of wound at this area is difficult to achieve

through the lateral placement of vascular clamp. With a faster and safer technique, we recommended to place a hanging suture rather than dissection at the upper border of the pulmonary artery to facilitate the proper placement of vascular clamp.

Role of Prophylactic Antibiotics for Tube Thoracostomy in Chest Trauma

K Chaiyasate, W Nawarawong

Background: Empyema remains a distressing complication after thoracic injury. Any measure which reduces the incidence of infectious complications after closed tube thoracostomy should be considered. Most of recent studies have supported the use of antibiotics in chest tube placement, however, this issue remains controversial in clinical practice.

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Patients: Thirty patients over 8 months old requiring closed tube thoracostomy for isolated chest injuries (22 blunt, 8 penetrating). The majority of patients received chest tube placement in the emergency room with a small number of delayed pneumothorax (2 patients) and delayed hemothorax (2 patients) which were treated after admission.

Intervention: The patients being randomized into two treatment limbs based on the digit, no antibiotic. The experimental group (Group 1) included 16 patients who received Cefazolin (1.0 g IV q 6 hr) commencing before tube thoracostomy and terminating within 12 hours after its removal. The control group (Group 2) included 14 patients received no antibiotic therapy. The incidences of infectious complication (pneumonia) and/or empyema were recorded.

Results: Overall incidence of infectious complications in this study was 6.6 per cent (2 of total 30 patients). Among the patients not receiving antibiotics, one of the 14 who had developed empyema required 2 chest tube reinsertions and antibiotics. Of the patients receiving antibiotics, there was one infectious complication (empyema) who was treated by VATS and was readmitted after discharge because of pneumonia. Patients who developed infectious complications averaged 13 days longer hospitalization than those without. No significant differences with antibiotic use were seen in the incidence of infectious complications, duration of chest tube placement, or length of hospitalization.

Conclusion: In this study, antibiotics were ineffective in reducing the incidence of infectious complications in patients with isolated chest trauma. We recommend adherence to the standard surgical principle of completed evacuation of hemothorax, complete expansion of the lung, and meticulous sterile technique to minimize the incidence of infectious complication after tube thoracostomy rather than the routine usage of prophylactic antibiotics.

Mitral Valve Repair with Autologous Pericardial Ring: Early Report from Srinagarind Hospital

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Mitral valve repair is acceptable as management of mitral valve disease. After the repair, mitral valve annuloplasty using artificial ring is needed. We reviewed our experience using autologous pericardial ring between February 1999 and April 2000. Thirty one patients were operated on as mitral valve repair at Cardiovascualr and Thoracic Surgery unit. There were 13 males, and 18 females, age range 19-53 years. There were 15 mitral stenosis and 2 mitral regurgitation patients. Associated lesions were AV disease, TV disease and ASD.

The procedures included commissurotomy 17, excision of short cardiac 14, split papillary muscle 19, shaving leaflet 10, quadrangular resection 8, triangular resection 1, chordal transposition 3, plication of clongared chordia 4, fenestration fused chordae 2, reimplantation of chordae, and annuloplasty using autologous pericardial ring in all patients. The other procedures were AV reapir 7, AVR 4, and closure ASD 3.

Aorric occlusion time varied from 54-167 min, and bypass time 61-190 min, depending opon associated lesion. Extubation of endotracheal tube in D0, 17.4%; D1, 74.07%; D2, 14.82%; D3, 3.7%. ICU stay 1 day 29.63%, 2 days 55.56% and 3 days 14.82%.

There was one patient died from heart failure (mortality 3.21%). The other complications were arrhythmia 5, pleural effusion 1, late cardiac componade 1. The patients were discharged from hospital in D3, 1; D4, 2; D5, 2; D6, 6; D7, 11 and beyond D7, 7 patients. Postoperative echocardiography was done in 17 patients and was not done 12 patients. Follow-up revealed 30 patients with FC I 25 patients, FC II 5 patients.

In conclusion, mitral valve repair using autologous

pericardial ring was safe with good result, but long term follow-up will be studied.

Results of Coronary Artery Bypass Graft Without Cardiopulmonary Bypass (OPCABG) Compared to the Conventional CABG

W Slisatkorn, V Banjacholamas, C Cheanvechai, W Udayachalerm

Background: Coronary artery bypass graft without cardiopulmonary bypass (OPCABG) is an alternative procedure for coronary artery bypass. The benefits of this procedure is it avoid the effects of cardiopulmonary bypass. The purpose of this study is to compare the result of the OPCABG and conventional CABG.

Methods: From January 1998 to May 2000, one hundred and sixty two coronary artery disease patients were revascularized, 56 patients with OPCABG and 106 patients with conventional CABG by the same surgical team. The results of the two procedures were retrospectively studied.

Results: The mean ages were similar in both groups (CABG 63.19 and OPCABG 62.91 years old, p=0.259). The length of ICU stay and hospital stay in OPCABG group was not significantly shorter than CABG groups (2.6 days versus 3.15 days, p = 0.267 and 12 days versus 14.01 days, p = 0.246). The OPCABG patients received blood transfusion significantly lesser than CABG patients (484.18 ml versus 724.8 ml of PRC, p = 0.16). The postoperative atrial fibrillation in OPCABG group was 17.9 per cent whereas 23.6 per cent in CABG group, p = 0.40. The mortality in elective case was not significantly lower in OPCABG patients (1.9% versus 3%, p = 0.7).

Conclusion: The early results of OPCABG in this study were not significantly different in the length of ICU stay, hospital stay, postoperative atrial fibrillation and mortality when compared to the convention CABG. While blood transfusion was significantly decreased in OPCABG patients. However the prospective randomized study and long-term follow-up should be further evaluated.

Extended Replacement of Aorta in Chronic type A Aortic Dissection

K Luengtaviboon

Background: Chronic type A dissection is itself an indication for urgent surgery. Usually replacement of ascending aorta alone is adequate. Arch and descending aorta are replaced only in rare occasions-impending rupture, dilatation with diameter > 6 cm. Extended replacement of proximal aorta is associated with high morbidity and mortality. Strokes and hemorrhage are among the most common complication and cause of death.

Patients and Methods: A retrospective study of three patients who presented with chronic type A aortic dissection. Two patients are male and one is female. They were 65, 67 and 70 years old. All of them had history of hypertension. One patient also had severe left main coronary stenosis and occlusion of right coronary artery. Clamshell incision was used in two patients and median sternotomy in one. Profound systemic hypothermia and circulatory arrest was used for replacement of aortic arch first. Reperfusion of the brain was performed while doing proximal ascending aortic anastomosis followed by descending aortic anastomosis. Distal coronary anastomoses were performed during the rewarming period followed by proximal anastomoses to aortic grafts.

Results: The circulatory arrest time was 18, 15 and 20 minutes. Distal aortic anastomoses were at proximal descending aorta in one patient and at mid descending thoracic aorta in two. There was no reoperation for excessive postoperative hemorrhage. There was no lung contusion or injuries to left phrenic and left recurrent laryngeal nerve. One patient developed right pneumothorax after removal of chest drain. Otherwise, all three patients survived without any complications.

Conclusion: In some patients who need extended replacement of proximal aorta, replacement of aortic arch first under circulatory arrest is a safe technique. Clamshell incision offers better exposure than median sternotomy. Because of brief period of circulatory arrest, neurologic complication is rare.

Modified Norwood Operation for Hypoplastic Left Heart Syndrome at King Chulalongkorn Memorial Hospital: An Early Result

V Benjacholamas, J Numchaisiri

Objective: Staged palliative approach is now an accepted management strategy in paients born with hypoplastic left heart syndrome (HLHS). The initial palliative procedure is Norwood or modified Norwood procedure. In suitible patients, subsequent stages include conversion to bidirectional cavopulmonary shunt or hemi-Fontan and finally, a completed Fontan or total cavopulmonary shunt. The current survival of the patients

undergoing the first-stage operation was more than 80 per cent in some centers. In our country, there were few centers performing this initial palliative procedure. We would like to share our expericence with other centers.

Materials and Methods: Between August, 1996 and November, 1999, modified Norwood operation was performed in 6 neonates. Four of them were born in our hospital and another two were referred from other hospitals. Homograft was used to augment the ascending aorta, arch and proximal descending aorta in the last two patients.

Results: There were two patients expired from this initial palliative procedure. The survival was 4/6 patients (66%) and one of them had already undergone the second stage (bidirectional cavopulmonary shunt) with uneventful result.

Conclusions: The mortality of this procdure is still high in inexperience centers. Therefore, not only good technic in cardiopulmonary bypass and operation, it also requires an expert team to take care the patient in early postoperative period.

Mitral Valve Repair Using Polytetrafluoroethylene SDetected by Transrectal Ultrasound Guide Biopsy uture for Chordal Replacement: Midterm results

T Chotivatanapong, C Yoshasurodom, P Chaiseri, V Sungkahapong, C Kasemsarn

Severe subvalvular deformity is often a major cause precluding successful mitral valve repair. Polytetrafluoroethylene (PTFE) has been used for chordal replacement in this group of patients to enhance success of mitral valve repair. In this study, we reviewed our midterm results of using PTFE suture for chordal replacement in our patients at Central Chest Hospital. Between March 1994 to December 1999, PTFE suture was successfully used for chordal replacement in mitral valve repair in 30 patients. Follow up ranged from 4 to 70 months with a mean of 36.6 months was completed in 29 patients. Of these patients, there were 14 males and 15 females with an average age of 40.6 years. The majority of them were caused by rheumatic heart disease (17). Other causes were degenerative disease (5), infective endocarditis (6) and ischemic heart disease (1). Preoperatively, 26 of the patients were in functional classes III and IV. The average degree of severity of mitral regurgitation was +3.04. Operations included isolated mitral valve repair (15), combined mitral and tricuspid valve repair (4), mitral valve repair and aortic valve replacement (3) and others (7). The most commonly used surgical procedures apart from chordal replacement with PTFE suture were commissurotomy, papillotomy, chordal splitting and resection of primary or secondary chordae. Mitral annuloplasty was done with Carpentier's ring (14) and autologous pericardial ring (10). Reconstruction of mitral valve leaflet was done using autologous pericardium in 5 cases. The average number of valve repair procedures used was 5.5 per patient. The average bypass and aortic clamp time were 155.3 and 120.5 minutes respectively. There was no hospital mortality. One patient died 20 months after the operation from her chronic obstructive lung disease. All of the survival patients were in functional classes I and II. The average degree of mitral regurgitation postoperatively was +0.43. During follow-up, there was no thromboembolic or valve failure complication. We conclude from our study that PTFE suture can be used safely and effectively in mitral valve repair.

Surgical Management for Type A Aortic Dissection 35 Cases Experience in King Chulalongkorn Memorial Hospital; Early Result and Longterm Follow up

O Satdhabudha, K Luengtaviboon

Objective: Type A aortic dissection is a catastrophic event. The optimal therapy is surgical repair. Recently, operative mortality for type A aortic dissection is 5 to 20 per cent depending on the time between onset of the dissection and surgery. We retrospectively studied the outcome of operation for type A aortic dissection in our center.

Patients and Methods: From January, 1992 to March, 2000, 35 patients (22 men and 13 women) with type A aortic dissection underwent surgery. The age ranged from 24 to 82 years (mean age 56 years). Twenty-six patients underwent the procedure during the acute period and 9 during the chronic period. In 28 patients, artificial graft replacement was accomplished by proximal and distal anastomosis after aortic cross-clamping. The Bentall operation was performed in 1 patient. The other 7 patients, deep hypothermia and circulatory arrest were used with open distal anastomosis. Associated procedures were CABG in 1 patient, aortic valve repair in 1 patient, and aortic valve replacement in 1 patient. Preoperative risks and patient conditions were defined and postoperative morbidity and mortality were followed in early period and long term.

Results: There were 2 hospital mortalities (5.7%); one resulted from acute renal failure, the other from intraoperative rupture of heart chamber; both were operated in acute phase of dissection. Seventy percent of patients were free from morbidity after the operation. Complications included sternal wound infection in 1,

neurological complication in 2, respiratory problem in 2, pericardial effusion in 1 and postoperative bleeding that required reoperation in 5 cases. There was no complication in the group that were operated in chronic phase of dissection. After follow-up ranging 2 months to 8 years (98.5 patient-years) there were two late mortalities, both from acute myocardial infarction (at 33 days and 2 years after surgery).

Conclusion: The operative morbidity and mortality for type A aortic dissection are still high. In our center, operative mortality was 5.7 per cent. Predictive factors of mortality were renal dysfunction, tamponade and the timing of operation. The outcome of surgical repair in acute phase of dissection was pooer than in chronic case. The most common cause of late death was acute myocardial infraction.