

Abstracts

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CARDIOTHORACIC SURGERY

Aortic to Renal Artery Bypass in Patient with Takayasu's Arteritis

T Temudom, S Wongkietkajorn, P Teawprasert, N Wora-Urai

We report the case of a 31-year-old woman with Takayasu's arteritis who had accelerated hypertension secondary due to renal artery stenosis. The patient was treated with 4 antihypertensive medications with the blood pressure of 160/90. An aortography demonstrated a complete occlusion of the left renal artery and a high grade stenosis of the right renal artery.

She underwent an aortic to right renal artery bypass using a saphenous vein graft with and uneventful postoperative course. Her blood pressure control has been improved. The postoperative renal scanning showed a functional improvement of the right kidney compared to the studies performed prior to the operation.

Aortic Valve Reconstruction: Another Alternative Surgical Treatment for Aortic Valvular Heart Disease

T Chotivatanapong, C Yosthasudorom, P Chaiseri, V Sungkahapong, C Kasemsarn, S Cholitkul

From September 1994 to December 1997, aortic valve reconstruction was successfully performed in 35 patients at Central Chest Hospital. There were 25 males and 10 females with average age of 34.3 years. The majority of them were caused by rheumatic disease (26). Other causes were infective endocarditis (8) and degenerative disease (1). Preoperative diagnosis included 12 patients with isolated aortic valve disease, 14 with double valve disease and 8 with triple valve disease. The other one patient had ascending aortic aneurysm and aortic regurgitation. Aortic valve reconstructions were done without using autologous pericardium in 19 patients. In the other 16 patients, autologous pericardiums treated with 0.65 per cent glutaral-

dehyde were used for cusp extension (7) and aortic valve replacement (9). The average bypass and aortic clamping time were 2 hours 54 minutes and 2 hours 15 minutes respectively. There were 2 hospital mortalities from low cardiac output. Late death occurred in 2 patients from cerebrovascular accident(1) and chronic obstructive lung disease(1). Three patients needed aortic valve replacement with prosthetic valve due to deterioration of aortic regurgitation at 9, 21 and 22 months postoperatively. Complications included post operative bleeding from aortic incision(1), wound infection (2) and transient ischemic attack (1). In conclusion, aortic valve reconstruction may be used as an alternative treatment for aortic valve disease. Longer term of follow-up is needed.

Durability of Mitral Valve Repair with Self-Made Annuloplasty Rings

W Warinsirikul, S Chaiyodsilp, P Mokarapong, S Tanamai, S Sangchote

Background: There are many kinds of prosthetic mitral annuloplasty rings.

Objective: We report results of our self-made annuloplasty rings and identify factors influencing the durability of mitral valve repair.

Setting: Institute of Cardiovascular Diseases, Rajavithi Hospital, Bangkok, Thailand.

Method: Between January 1991 and May 1999, 132 patients with mitral insufficiency underwent mitral valve repair with self-made annuloplasty rings. A total of 85 patients were in functional class III or IV preoperatively. Mid-term follow-up was available in 131 patients from 1 month to 8.1 years (average 2.9 years).

Results: Operative mortality was 0.8 per cent at 5 years; survival and event-free survival rates were 92 and 82 per cent respectively. One hundred and fourteen patients

(97%) were in class I, 3 patients (3%) were in class II. Echocardiography at follow-up showed satisfactory mitral valve function. Durability of repair was adversely affected by younger age, rheumatic heart disease, atrial fibrillation, associated diseases, and functional class.

Conclusion: Mid-term results of self-made annuloplasty rings are comparable to commercial ones. Durability was adversely affected by multiple factors.

Can Albumin as Priming Solution Improve Post Cardiopulmonary Bypass Platelet Quantity? A Prospective Randomized Comparison Between Albumin and Polygeline in Patients Having Elective Coronary Artery Bypass Grafting Surgery

S Leelahanon, J Namchaisiri, K Luengtaviboon, V Benjacholannah, JG Bennett, S Thungsupachai, C Cheanvechai, S Wetwithan, S Singhatanadgige, A Comyod

Background: Cardiopulmonary bypass (CPB) has several adverse effects in many physiologic functions. One of the physiologic disturbances is platelet quality. Decreasing in platelet quantity after CPB is one of major causes of post operative bleeding. Thrombocytopenia is partly caused by platelet adsorbed to circuit surface. By theory, albumin coated surface may prevent platelet adsorbed on biomaterial.

Objective: To investigate the influence of albumin in priming solution compared with standard polygeline on the post cardiopulmonary bypass platelet quality and post operative bleeding.

Setting: Division of Cardiovascular Thoracic Surgery, Department of Surgery, Faculty of Medicine, Chulalongkorn University Hospital, Bangkok 10330, Thailand.

Research Design: A prospective randomized controlled clinical trial

Patients and Methods: Forty two patients presenting for coronary artery bypass grafting surgery for the first time were prospectively randomized into two groups, A and B. Twenty one patients in group A were designated to use normal serum human albumin as priming solution. The other twenty one patients in group B were to use polygeline (Haemacel[®]) as priming solution. All patients, anesthetists, surgeons and intensive care unit personnel were blinded as to the solution type.

Results: Both groups were demographically and hemodynamically similar. There was no difference in blood chemistry and operative technique among both groups. After cardiopulmonary bypass had finished, there were no differences in platelet quantity, hemoglobin level and white blood cell count. There were no differences in number and percent of platelet loss between both groups. One patient in polygeline group was reoperated because of massive bleeding not related to thrombocytopenia. There

was no difference in reoperation rate in both groups. Excluding this bleeding case, there were no differences in platelet quantity, hemoglobin level and white blood cell count in the first 24 hours after arrival in ICU. Excluding the bleeding case, there was no difference in postoperative bleeding and platelet transfusion between both groups.

Conclusion: There is no advantage in using albumin over polygeline for priming solution in hematologic point of view for the first 24 hours after operation. Because albumin is more expensive, polygeline priming solution is preferable to albumin priming solution.

Thoracoscopic Sympathectomy for Primary Hyperhidrosis: An Early Results

W Wachirapunyanumul, A Montamara, P Sukosit, C Pruksapong, R Hakeem

Primary hyperhidrosis can cause a functional and social disabling problem. Thoracic sympathectomy had been proved to be the most effective treatment for this problem.

Objective: To review our total experience of thoracoscopic T2 ganglionectomy for the treatment of hyperhidrosis palmaris and also T2 + T3 ganglionectomy for concomitant axillary hyperhidrosis.

Materials and Methods: Ninety-five thoracoscopic sympathectomies were performed in 48 consecutive patients for hyperhidrosis during a period of 15 months from February 1998 to May 1999. Prospective evaluation of immediate and early technical success as well as complications were made.

Results: Thoracoscopic T2 ganglionectomy causes good result in 98 per cent with cure rate of 95.78 per cent in 48 patients. While T2 + T3 ganglionectomy results in improvement of concomitant axillary hyperhidrosis in 72.72 per cent of 11 patients. Mild to moderate compensatory sweating occurs in almost all of the patients with severe clinical symptom in two patients. Postoperative neuralgia occurred in 3 patients. No postoperative hemothorax, clinical pneumothorax or Honor's syndrome was observed.

Conclusions: Thoracoscopic sympathectomy provides excellent results for hyperhidrosis with minimal risk of morbidity.

Osteofibrous Dysplasia of Ribs in the Newborn

P Samankatiwat, S Boonkasem

Introduction: Osteofibrous dysplasia presenting at birth or neonatal period is very uncommon. It usually presents in later decades of life. Although it is a benign lesion, sometime it is difficult to distinguish from malignant

lesion. There are a few reports about this diseases that occurs in neonatal period. However, long bones are the most common sites to be involved.

A case report: A newborn, who had been delivered by cesarean section after fortyweeks of gestation, developed a problem of birth asphyxia and was intubated because of respiratory failure. On physical examination, this baby was in respiratory distress and tachypnic. The breath sound was diminished on the left. Bulging of the left chest wall was noted. The chest x-ray and computerized axial tomogram showed a large chest wall mass bulging into pleural cavity and compression of the left lung with displacement of the mediastinum to the right. The 2nd, 3rd, 5th and 6th ribs were involved by the tumor.

The patient was operated upon. The incision was left posterolateral thoracotomy. There were a large mass involving 5th and 6th ribs and two small masses involving the 2nd and 3rd ribs respectively. There was no adhesion between these masses and the left lung. All of these masses were removed including the involved ribs with margin of 1 cm in length. No need for chest wall reconstruction was considered. The patient markedly improved and could be extubated two days postoperatively. The pathological diagnosis was osteofibrous dysplasia. The patient is doing well after two months. Osteofibrous dysplasia in neonatal period is a rare condition and most of the cases involve long bones. Limited resection is adequate in management of this condition especially in neonatal or childhood period.

Cardiac Surgery Through a Minimally Invasive Incision, An Early Experience in Bhumibol Adulyadej Hospital

S Chaiyaroj, I Sukcharoen, N Boonme, C Fongchol, K Jirasarn, C Chanchao

Minimally invasive approaches to cardiac surgery are currently used as alternatives to conventional surgery. The techniques of minimally invasive surgery, partial sternotomy and parasternal incision are all have their own disadvantages and difficulties. Our approach is developed to obtain benefit from minimally invasive techniques and maintain the standard of cardiac surgical procedures.

In this report, we described a simple and effective method of full sternotomy through a minimally invasive incision. From July 1997-May 1999, 26 patients underwent valve replacement (10) and repair of secundum atrial septum defect (16) using this minimally invasive incision. There have been no operative mortality and no intra operative complications. The follow-up was complete and the early results are satisfying. Our approach had advantage of achieving a cosmetically superior result while providing adequate surgical exposure without necessity to change operative instruments and cardiopulmonary bypass

techniques. We have demonstrated that cardiac surgery can be performed safely and effectively through this minimally invasive incision.

Harmonic Scalpel in Coronary Artery Bypass Surgery

S Banyatpiyaphod, P Maraprygsawan, P Jiamanukoolkit

The arterial conduits are now well accepted in coronary bypass surgery due to the good long-term patency. Harvesting technique has been improved during recent years with the new ultrasonically activated scalpel (Harmonic Scalpel; Ultracision Inc, Smithfield, RI). We used the Harmonic Scalpel in harvesting the radial artery and gastroepiploic artery using coagulating shears. Between May of 1998 and May of 1999, 24 CABGs were performed using RA and GEA grafts along with conventional IMA (with or without saphenous vein) with mean of 3.2 grafts per patients (range 2-5 grafts). Total arterial revascularization was performed in 17 patients with mean of 2.3 grafts per patients (range 2-4 grafts). The average harvesting time for RA and GEA were 15 and 10 minutes respectively. The Harmonic Scalpel decreased the harvesting time, minimized thermal injury, frequency of spasm and excessive use of hemostatic clips.

Conclusions: Good coagulation capacity with markedly decreased use of hemostatic clips and minimal thermal injury offers the surgeon the ability to perform less traumatic, spasm free and rapid arterial harvesting.

Empyema Thoracis in Songklanakarind Hospital : A 17-Year Experience

P Vasinanukorn, W Jittithavorn, P Kananurak, A Chatepaopan, C Ruegliang

Empyema thoracis remains one of the major problems in thoracic surgery in the developing countries.

In the past 17 years, from February 1982 to December 1998, all 254 cases of pulmonary infections admitted to the Division of Thoracic and Cardiovascular Surgery at Songklanagarind Hospital were retrospectively reviewed and analysed. There were 163 cases of empyema thoracis and 91 cases of other pulmonary infections including tuberculosis, lung abscess, bronchiectasis and fungal infections. There were 125 males and 38 females in empyema thoracis patients, aged 1-79 (mean 37) years, whose presenting symptom were fever, chest pain, cough and dyspnea. The etiologic factors included postpneumonic 58.1 per cent, posttraumatic 13 per cent, tuberculosis 5.5 per cent, complicated lung abscess and infected lung cysts 7 per cent, and postoperative 6 per cent.

The diagnosis was made by chest X-rays 81 per cent, thoracentesis 46 per cent, ultrasound 31 per cent and CT

scan in 10 per cent. About 46.3 per cent of patients were referred from other hospitals with previous treatments including tube thoracostomy 68.5 per cent, aspiration 14.8 per cent and thoracotomy 7.4 per cent. The treatments given in our hospital included thoracotomy and decortication 68 per cent, thoracotomy and thoracoplasty 25.9 per cent, rib resection and tube thoracostomy 14 per cent. The organisms were isolated in 59.3 per cent of the cases with 43.3 per cent of Gram positive and 53.3 per cent of Gram negative organisms. Postoperative complications were wound infection 41 per cent, postoperative pneumonia 33 per cent, respiratory insufficiency with prolonged ventilator support 29.2 per cent, and atelectasis 8.3 per cent. There were postoperative death in 11.8 per cent due to respiratory failure and sepsis. The average length of hospital stay in the survivors were 14 days with the average duration of postoperative intercostal drainage of 9 days.

Total Anomalous of Pulmonary Venous Return : Current Five-Year Experience in Ramathibodi Hospital

P Samankatiwat, S Boonkasem, W Withurawanit, C Shaishana, M Ngodngamthaweessuk, S Taotaro, S Attanawanich

Background: Total anomalous of pulmonary venous return (TAPVR) is an infrequent congenital cardiac defect in which there is no direct connection between any pulmonary vein and the left atrium. Approximately one per cent of infants born with congenital heart disease have TAPVR. Patients with TAPVR usually present as seriously and often critically ill infants during the first few weeks or first month of life. Theoretically the complete surgical correction could be accomplished without entering the ventricle. However, in early experience, many literatures reported nearly 40 per cent mortality rate. We report our current experience in the recent five years.

Objective: This study aims to evaluate outcome after surgical repair of TAPVR.

Design: Retrospective study.

Patients and Methods: Consecutive 12 patients, who were diagnosed as TAPVR, underwent surgical correction of the disease in Ramathibodi Hospital during May 1994 to May 1999. Age, sex, body weight, type of TAPVR, presence of pulmonary venous obstruction, postoperative functional status and mortality rate were studied and analysed.

Results: In these 12 patients; there were 9 males and 3 females, their ages ranged from 11 days to 13 months (mean = 5.8 months), body weights were 3200 to 6500 grams (mean = 4541.67 grams). These consisted of 6 supracardiac, 5 cardiac and one infracardiac types. Pulmonary venous obstruction was found in 5 patients. Three patients died, one was of infracardiac and another two cases were of

supracardiac type. The causes of death were pneumonia in one and pulmonary hypertensive crisis in another two patients. Mortality rate was 25 per cent. The functional status was in class I postoperatively in all survivors.

Conclusion: Theoretically, mortality should be very low in this type of reparative procedure in which the ventricles are not opened. Nevertheless, the severity of the condition in most neonates and very young infants presenting for treatment, together with the small size of most of the patients and preoperative condition (especially congestive heart failure) are very important determinants of outcome.

Cardiac Myxoma: Report of 13 Operations Using the Biatrial or Right Atrial Approach

M Ngodngamthaweessuk, P Samankatiwat, V Supakul, S Boonkasem, S Attanawanich, W Subhannachart

Background: Myxoma is the most common and well-recognized primary cardiac tumor. About 75 per cent occur in the left atrium. Clinically they present with symptoms of hemodynamic obstruction, embolization, and/or constitutional changes. Diagnosis is established most appropriately with two-dimensional echocardiography. Prompt excision under temporary cardiopulmonary bypass has been established as the only acceptable mode of treatment.

Objective: This study aims to evaluate outcome after surgical removal of cardiac myxoma.

Design: Retrospective study.

Patients and Methods: Between November 1986 and January 1999, 13 consecutive operations for atrial myxoma were performed on 12 patients. Age, sex, clinical manifestation, New York Heart Association functional classification and hospital mortality rate were analysed.

Results: In these 12 patients, there were 9 females and 3 males. The ages ranged from 17 to 67 years. The clinical manifestation includes dyspnea on exertion in 11 cases (92%), palpitation in one case (8.3%) and neurological symptoms in one case (8.3%) and neurological symptoms in one case (8.3%). One case had recurrent left atrial myxoma. Mean preoperative New York Heart Association functional classification was 2.5. Diagnosis was established preoperatively in all patients by echocardiography. The location of cardiac myxomas was left atrium in 11 patients and right atrium in one patient. Surgical approach to the tumor was biatrial in 6 and right atrial in 7 (tumors were removed through a septal incision). All tumors were excised with a wide margin of full-thickness septum. Hospital mortality was 8.3 per cent (one case of recurrent left atrial myxoma using biatrial approach). One patient with right atrial approach required reoperation for mitral valve replacement and permanent pacemaker implantation. One patient had brain metastasis 18 months after tumor excision

using right atrial approach. Mean postoperative New York Heart Association functional classification dropped to 1.25.

Conclusion: Functional status and employability of these patients have been very good. This results indicate that biatrial approach is not different from right atrial approach.

Right Atrial Approach for Repair TOF

C Tontisirin

Repair of Tetralogy of Fallot (TOF) can be approached in many routes, but the approach to repair must (1) provide excellent exposure (2) avoid damage to major coronary artery branches, and (3) avoid excessive division of muscular bands in the right ventricle.

The approach through the right atrium (and pulmonary artery) is preferred.

From July 1994 to June 1999, 54 patients underwent repair through the right atrium were reviewed. There were 30 males, 24 females, age ranged from 10 months to 35 years and body weight ranged from 8 to 45 kgs. Eighty seven percents had preoperative McGoon ratio of pulmonary artery >1-2. Trans RA approach was done in 49 patients, and trans RA+MPA approach in 5 patients, aortic clamp time ranged 31-133 minutes (average 62.41 min) and bypass time 44-151 minutes (average 78.71 min). The post repair PRV/LV was measured and accepted when the pressure was below 0.8.

The patients stayed in ICU 1-7 days, mostly 3 days (76%) and the endotracheal tube could be removed mostly in 2 days (72.5%). The common complication was pleural effusion (4/54) and pneumonia (3/54). Most patients (79%) could be discharged from the hospital in 7 days. One patient died from congestive heart failure (mortality 1.85%).

In conclusion, repair of TOF can be performed safely through right atrial approach especially when post repair PRV/LV was below 0.8.

Heart Lung Transplantation for Ventilator Dependent Recipient: A Case Report

K Luengtaviboon, V Udompanich, C Chienvichai, K Surapongse

Background: Ventilator dependency is usually considered a contraindication for lung transplantation. However, in young patient with good motivation, lung transplantation can be performed in selected case.

Patients and Methods: This was a case report of a 22 years old woman who had Dengue hemorrhagic fever which was complicated by bowel perforation, intraabdominal sepsis,

adult respiratory distress syndrome, lung infection and destroyed both lungs. She was dependent on ventilator for 7 months, and could not be weaned from ventilator. When a suitable donor was found, multiple wedge resection of both donor's lower lobes had to be done prior to implantation to match both thoracic cavities of the recipient. Dense adhesions in both pleural spaces made the operation difficult. Combined heart and lung transplantation was performed. Postoperative immunosuppression included antithymocyte globulin, cyclosporin, mycophenolate and steroid. Ganciclovir was given prophylactically for 6 weeks.

Results: The patient was successfully weaned from ventilator on the fourth postoperative day. Her postoperative course was uneventful. Now it is 6 months after operation. She is active and there is no dyspnea with ordinary activity.

Conclusion: In patient with end stage lung disease, ventilator dependent should not be an absolute contraindication for lung transplantation. In selected patient who is otherwise healthy, a successful lung transplantation will make ventilator weaning possible. Preoperative chest rehabilitation is important method to prepare the patient for lung transplantation.

The First Successful Batista's Operation in Thailand

K Luengtaviboon, K Surapongse, C Chienvichai, S Srimahachoti

Background: Dilated cardiomyopathy is the most common indication for heart transplantation in Thailand. Because of economic crisis and problems with donor shortage and complications of chronic immunosuppression, another method of treatment is under investigation.

Patients and Methods: This was a case report of a 50 years old male who has suffered from progressive congestive heart failure secondary to idiopathic cardiomyopathy for 6 years. He was transferred to our hospital for consideration of heart transplantation. He was in functional class 4 and received continuous intravenous dobutamine infusion. His echocardiogram revealed no mitral regurgitation, left ventricular end diastolic diameter of 8 cm, and ejection fraction of 12 per cent. Coronary angiography was normal. Partial left ventriculectomy was performed with preservation of papillary muscle. After's suture was also used.

Results: He could be weaned from cardiopulmonary bypass with small doses of dopamine, adrenalin and sodium nitroprusside. He had good hemodynamic and urine output. He was extubated on the third postoperative day. His chest X-ray showed smaller cardiac shadow and decreased lung congestion. Echocardiogram was done on the fifth postoperative day and showed no mitral regurgitation, LVEED = 6 cm and EF = 40 per cent.

Conclusion: Partial left ventriculectomy is effective

form of treatment for endstage dilated cardiomyopathy. It improved left ventricular systolic function immediately. This procedure may serve as a bridge to heart transplantation or it may be an alternative to heart transplantation. However, the long term outcome must be followed.

Retrograde Cerebral Perfusion in Surgical Treatment of Aortic Aneurysm: Central Chest Hospital's Experience

T Chotivatanapong, V Sungkahapong, P Chaiseri, P Petchyoongthong, C Kasemsam

Surgical treatment of aortic aneurysm is a challenge for cardiac surgeon. Recently, use of retrograde cerebral perfusion (RCP) has been introduced in surgical treatment for aortic aneurysm to improve outcome of this treatment. In this study, we would like to review our experience of using this technique in aortic aneurysm patients at Central Chest Hospital.

Between December 1996 to December 1998, a total of 16 patients underwent surgery using RCP for the treatment of aortic aneurysm. There were 13 males and 3 females. The average age of the patients in this group was 54.1 years. Diagnosis included aortic dissection (8, 6 as type A, 2 as type B), false aneurysm (5) and true aortic aneurysm (3). Aortic arch involvement was found in 11 patients. Operations included Aneurysmectomy and Decron graft replacement (7), Repair of aortic aneurysm (3), Aortic arch replacement (2), Bentall's operation (2), Bentall's operation + CABG (1) and Bentall's operation + elephant trunk operation (1). The average bypass time and aortic clamp time were 178.5 minutes and 110.3 minutes respectively. The average RCP

time was 60.3 minutes. Hospital death occurred in 5 patients. One patient died 3 months after initial discharge. Neurological complication was found in 4 patients. We conclude from our study that RCP is a useful technique for the treatment of aortic aneurysm.

Endoaneurysmorrhaphy

S Surakiatchanukul, V Sagiampkultavorn, K Suvarnakich

The outlook for patients who develop ventricular aneurysms is considerably worse than patients who experience myocardial infarction without aneurysm. Sixty to 73 per cent of those patients with ventricular aneurysms died within 3 years after the precipitating infarct. Recently Proudfit and colleagues studied a group of 74 patients with angiographically proven ventricular aneurysms and found a mortality of 53 per cent at 5 years and 88 per cent at 10 years. It has been over 30 years since the introduction of utilizing extra-corporeal circulation for left ventricular linear aneurysm resection by Cooley.

The objective of repair of the left ventricular aneurysm is to improve the ventricular dysfunction which causes a reduced ejection fraction and low cardiac output. It also alleviates the complications of angina pectoris, arrhythmia, intracavitary thrombi and embolism.

In this report, two cases of ventricular aneurysm were treated using the new technique of endoaneurysmorrhaphy. Both patients had clinical symptoms of angina pectoris and congestive heart failure preoperatively. After the repair, the patients had improvement of hemodynamics and good early results.

PLASTIC RECONSTRUCTIVE SURGERY

Donor Harvesting : A New Approach to Minimizing Transection of The Hair Follicle

D Pathomvanich

There are many methods to harvest the donor area in hair transplantation. The most common harvest today is using either single or multiblade knife. However, the greater the number of the blades used, the more the number of transection of the hair follicles. Even though some transected follicles continue to grow, they are not the same quality as the original one. These are the blind techniques. I explored another alternative, it is the open method, called "Donor Dissecting" based on "Cutting what you see, and seeing what you cut," simply using a pair of small skin hooks lift up the skin edge to straight the follicle and pull apart while dissecting between follicles. The key point is "The operative area must be dry and clear". After 5 cms of

ellipse and dissected on both sides, it is divided and send to the technician for microscopic dissection. While the surgeon continues to dissect, the technician also starts to dissect under microscope as described by Dr. Limer and Dr. Seager. My preference is to further dissect the ellipse into narrow strips that contain 2 rows of the follicles, by fixing both ends of the piece of ellipse to the soft wooden board with No. 25G, or in a transverse fashion. Once the narrow long strips are dissected, they are easily cut into small follicular unit or minigraft either with the back lite, microscope or automated graft cutter. We studied 45 patients consecutively whose dissection of the entire ellipse were performed by MD. There were 1.94 per cent transection of the follicle and dermal papilla was the most common structure that received injury. The rest of the dissection done by the technicians from the narrow strip into mini and micrograft were 1.29 per cent (2 RNs, 2 techs, 2 microscopes, 2 back lites).

Conclusion, instead of speeding the surgical time to offset the loss of the follicles, it is worthwhile to spend the extra time to save 10 per cent or more of the loss.

Reconstruction of Lower Extremities in Leprotic Patients by Free Flap Coverage

A Cholapand, R Wongtrangkaphan, K Kittiamphon

Chronic ulcer of the lower extremities (foot ulcer) is one of the most common problem in leprosy patients. Its pathogenesis is peripheral neuropathy causing the neurophic foot. All of these patients were seen with chronic foot ulcer problem which sometimes turning to malignancy. The treatment of these chronic ulcer varies from conservative to surgical treatment.

In this report we treated 11 patients since 1993-1999, age 40-71 years. We have 2 heel lesions, 4 forefoot lesions and 5 heel-lateral foot lesions. Seven cases were benign ulcer and four cases were malignant. All cases were treated by microsurgical technique: the donor flaps chosen in the series were groin (3 cases), radial forearm (2 cases), medial plantar (2 cases), rectus abdominis (2 cases), parascapular (1 case), gracilis m. (1 case). Average operative time was 6 hours. At 6 months to 5 years follow-up, all patients had good result. In the malignant cases, post-operative radiotherapy were given without any complication. From this report, the lower extremities salvage in leprotic patients by microsurgical technique is an alternative line of treatment without severe complication.

Two Methods of Tendon Repair : An in Vitro Evaluation of Tensile Strength and Gap Formation

K Wattanawong

A comparative study of two methods of tendon repair was performed on fresh cadaveric tendons. The cross stitch epitendinal suture technique with modified Kessler core suture and the conventional epitendinal suture technique with modified Kessler core suture were tested biomechanically. The data was analyzed with student t-test which revealed the force to make 1 mm, 2 mm and 3 mm gap formation of each technique were not statistical significant. The breaking force of cross stitch technique (3.85 Kg \pm 0.9 Kg) was higher than the conventional technique (2.95 Kg \pm 0.38 Kg) with the P value of 0.048 and 95 per cent Confidential Interval (CI) of 0.009-1.79 Kg.

From this data, we could not definitely conclude that the cross stitch technique was stronger than the conventional method with this CI range.

The gap formation before tendon rupture was wider in cross stitch technique (3.1 mm) than the conventional

technique (0.65 mm). It is statistically significant ($p < 0.05$).

In conclusion, the new method of cross stitch epitendinal suture has no advantage than the conventional one.

Sprengel's Deformity: A Case Report

K Laochaisri, A Chuangsuwanich, S Muangsombut

Sprengel's deformity is a condition where the scapula (shoulder blade) on one or both sides are underdeveloped (hypoplastic) and abnormally high. It is due to failure of descence of the scapula during embryonic development from its position in the neck to its normal position in the posterior thorax. It happens usually in girls. The obvious problem is cosmetic. But often there is also a functional problem. The hypoplastic scapula is usually tethered to the spine and posterior ribs by tight bands and even an omovertebral bone, which restricts scapular movements, and therefore abduction of the arm. There are frequent associated problems, such as absent or hypoplastic trapezius, deltoid and rhomboid muscles on the affected side, spine and neck problems such as torticollis, scoliosis and Klippel-Feil syndrome. Limb length discrepancy is not uncommon, and visceral abnormalities such as absent kidney, atrial septal defect and situs inversus can be present. Radiography to determine the severity of the Sprengel's deformity is necessary, as well as to rule out any neck or spinal abnormalities. Tests to rule out visceral abnormalities are also important.

Surgery can be performed to release the tight band and remove the omovertebral bone that tether the scapula is its abnormal position. The trapezius and rhomboid muscles are detached from their origins in the spinous processes and reattached at a lower level to keep the scapula in a more normal position.

Surgical Hair Restoration in the Asian Women

D Pathomvanich

Hair transplant among women are uncommon compared to men and the results are varied from good to poor. To my knowledge this will be the first report of surgical hair restoration among Asian women. We classified the patients into 4 types.

Type A: Patient has receding fronto-temporal hairline as in male pattern baldness (17 patients).

Type B: Patient has classic female pattern baldness on the vertex with spare in the front as described by Ludwig classification (8 patients).

Type C: Scar alopecia from trauma or infection (6 patients).

Type D: Iatrogenic alopecia from facial cosmetic

surgery (5 patients).

Method: All the surgical hair restorations were done in current method of mini and micrograft or follicular unit transplant only, except one patient who had scar reduction.

Results:

Type A are good to very good for those who had 2-3 sessions. Those who had one session are happy with the result of the hair growth and want to have more sessions done in the future.

Type B five patients who had Ludwig II achieved good result. The other 3 patients with Ludwig I did not see any different. The over all results was good in only 62 per cent.

Type C had good result in all except patients who had small scar were not satisfied despite hair growth since the scar remained visible. Patient who had scar reduction only is happy with the result.

Type D three patients were happy with the hair growth. The other two were lost follow up due to financial problem.

Summary: Surgical hair restoration in Asian women can achieve good result especially in type A, C, and D. However in Type B the result is poor in Ludwig I but is good for Ludwig II and III.

Alternative Method for Harvesting Nerve Graft

P Manurangsee, S Vanmanomal, C Sajalsariyawuth, S Mekraksavanit, V Jatuthong

Nerve graft is an important part in Plastic and Reconstructive Surgery. There are many methods of nerve graft harvesting which had different advantage and disadvantage.

From July 1998 to April 1999, we use tendon stripping for harvesting nerve graft by using 0.5 cm incision at the distal end and pushing the stripper upward to get another end in 10 cases in Department of Plastic and Reconstructive Surgery, Lerdsin Hospital, which is easy, quick and getting good results in both donor site and nerve graft.

Modified Basic Flap Design for Immediate Scalp Defects Coverage

S Wannamanomal, C Sajalsariyawut

Medium to large scalp defects are sometime a problem for immediate closure without skin grafting, multiple flaps or extensive dissection. In this paper, we designed a curved triangular flap, which was modified from the basic flap movement and shape of cranial vault, for three scalp defects at Lerdsin Hospital. Based on the excellent vascular

network of scalp, the good results were obtained in all cases without any complications.

Conclusion: This technique is simple and effective by providing single-stage primary closure of moderate to large scalp defects.

Bifocal Distraction Osteogenesis: An Alternative Treatment for Segmental Bone Loss in Mandibular Fracture Non-union

S Chu-Ongsakul

Mandibular fracture is a common injury in maxillo-facial trauma. In difficult cases, there may be severely comminuted fragments resulting in bone loss and malunion or nonunion.

The conventional treatments consist of rigid fixation and intermaxillary fixation with or without bone graft. Usually, there will be morbidities associated with bone graft harvesting which cause patients inconvenience. Moreover, 'contracture' of soft tissue surrounding the fracture site will aggravate the deformity.

Distraction osteogenesis has been employed for bone lengthening in both long and flat (membranous) bones using Ilizarovs technique. Therefore, replacing segmental bone loss may be not only benefited by gradual distraction of one of the residual bony end to unite with the other, but also soft tissues expansion can be done simultaneously.

This is a case report of bifocal distraction osteogenesis for the patient suffering from gunshot wound of the parasymphysis of mandible. Using this method together with intermaxillary fixation and secondary bone graft, the deformity can be restored satisfactorily.

Osseointegrated Finger Prosthesis. An Alternative Method for Finger Reconstruction

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Three patients with traumatic amputation of the index and middle fingers at the base of the proximal phalanx level underwent a two-staged reconstruction with osseointegrated titanium implants to fix a finger prosthesis to the proximal phalanx. The first stage included implantation of the titanium fixture into the medullary canal of the proximal phalanx. A 3-month period was allowed for the fixture to firmly osseointegrated with the proximal phalanx. A skin penetrating abutment was then placed on top of the fixture to which a prosthesis could be firmly attached. Follow-up ranged from 8-18 months, there were minimal skin problems. Some tactile sensation, better motor function and good cosmetic result were achieved.