Cardiovascular & Thoracic Surgery Abstracts of

10th Biennial International Conference

of Pakistan Society of Cardiovascular & Thoracic Surgeons

PC Hotel, Lahore, Pakistan

12-14 October 2017

Graft patency in one year after off pump CABG surgery by computerized tomograpgy (CT)

Tayyab Pasha

Objectives:
To assess the patency rates with Off Pump CABG after 12 months at our tertiary care hospital.
Methods:
We studied the graft patency in off pump CABG surgery by CT angiography after one year in tertiary care hospital. We conducted study by follow up of 30 patients in whom total 91 grafts were used. Thirty three (35.8%) were LIMA or RIMA in which 30 were LIMA (89.9%) and 3 were RIMA (9.1%). Thirty (32.7%) were radial artery grafts and 28(31.5%) were SVGs. Out of 33 BIMA 2(4%) were blocked and 1(2%) was stenosed, in case of radial artery 4(17%) were blocked and 3 were stenosed. Out of 29 SVGs 7(28%) were blocked,3(10%) were stenosed.
Results:
We used 27 grafts on PDA or RCA in which 6(22%) were blocked and 1(3.7%) was stenosed. Four were on diagonal branch from which 1(25%) got blocked and 1(25%) was stenosed. Out of 28 grafts on LAD, 2(6.6%) were blocked and 1(3.3%) had diffused disease. Five (5.4%) were on distal Cx ; 27 were grafted on OM from which 3(11%) were blocked and 3(11%) had stenosis.
Conclusion:
Out of 91 grafts, the total number of blocked grafts was found to be 13(14%). Seven (7.6%) were stenosed. According to our results, the graft patency after 12 months was observed to be 86%. Our results showed that there was good patency rates with off pump CABG at 12 months duration at our tertiary care hospital.

Follow up and Quality of life after radial artery use

Tayyab Pasha

Objectives:
To assess the quality of life after radial artery use in coronary artery bypass grafting
Methods:
A retrospective study was conducted at the department of cardiac surgery, Jinnah Hospital Lahore from January 2012 to December 2015. All patients who underwent elective coronary bypass grafting during the period were included in the study. Perioperative factors we recorded and then the quality of life was assessed using EuroQol 5D questionnaire for follow up.
Results:
A total of 479 patients were operated during above mentiono time period. Radial artery was used in 185 patients, out of which 155(85%) we males and 30(15%) were females. We performed off pump coronary artery bypass grafting in 158(86%) patients and on pump coronary artery bypass grafting in 27(14%) patients. Among selected patients, 84 (45%) were smokers, 81(43%) were diabetic and 104(56%) had hypertension. We conducted the follow up of these 185 patients by telephone or data was collected upon their follow up visit. Average follow up months were 23.1 months. Average number of radial graft per person was 1.14. Follow up was completed in 170 patients i.e. 94%. No patient was bed ridden. 82% were following a thirty minutes' walk plan with a distance of at least 1 km. Patients were highly aware of the concept of self-care as 99% were taking medicines regularly. Also 83% patients were free of any pain.
Conclusion:
Radial artery gives acceptable results and improv quality of life at midterm. Further studies regarding patency are needed evaluate the graft in coronary artery bypass grafting.

Early outcomes of off-pump Multiple or Total Arterial Coronary Revascularization

Tayyab Pasha

Objectives:
To evaluate the short term results of off pump total and multiple arterial coronary revascularization (TACR & (MACR))
Methods:
From January 2012 to July 2017, 497 patients with two and three vessel coronary artery disease (two & three VCAD) underwent OPCAB at the department of cardiac surgery, Jinnah hospital, Lahore. 94 of them got total or multiple arterial coronary revascularizations. 42 patients (42%) had two VCAD and 52(52%) had three VCAD. Total arterial revascularization was performed in 92(92%) patients using right internal mammary artery and left internal mammary artery and/or radial artery. 18(18%) patients got multiple arterial grafts using bilateral internal mammary artery(BITA), radial artery (RA) and saphenous venous grafts (SVG)
Results:
There was no death reported in first 30 days post operatively. Deep sternal wound infection occurred in 2(2.1%) patients. The rate of postoperative stroke and renal failure was zero. Two (2.1%) patients had acute MI and 1(1.1%) patient was reopened due to bleeding.
Conclusion:
We conclude that early outcome of OPCAB total or multiple arterial coronary revascularizations, in experienced hands, has good results.

Experience of Total Arterial Revascularization in Shifa International Hospital, Islamabad

Shafqat Hasan

Objectives:
To evaluate our experience regarding the outcomes of total arterial revascularization in a selected group of patients in Shifa International hospital, Islamabad, Pakistan.
Methodology:
It was a case series conducted from July 2015 to July 2017 at Department of Cardiothoracic Surgery, Shifa International Hospital, Islamabad, Pakistan. Total 50 cases of total arterial revascularization were done.
Results:
Patients undergoing total arterial revascularization were younger (mean age 55 years). Skeletonized left internal mammary artery was used in all cases while skeletonized right internal mammary artery was grafted in 80% of cases. In 92% of the cases, we also grafted pedicled radial artery. Average cross clamp time was 66.8 min and bypass time was 101 min. Mean ICU stay was 2 days and hospital stay was 6 days. After 1 year follow up there was no mortality.
Conclusion:
Total Arterial Revascularization, with Bilateral Skeletonized Internal Mammary and Radial Arteries, is a safe technique with a low morbidity and mortality in a selected group of patients.

Surgical Repair of Ruptured Sinus of Valsalva Aneurysm: Experience at Cardiovascular Department, Lady Reading Hospital, Peshawar

Abdul Malik

Objectives:
To determine the frequency of ruptured sinus of Valsalva aneurysm (SVA) and to study its surgical outcome in terms of morbidity and mortality in our setup.
Methods:
This case series study was conducted on 29 patients of ruptured SVA's, operated at cardiovascular department, Lady Reading Hospital, Peshawar, from January 2003 to December 2015 and followed up till December 2016. Informed consent was taken from all patients. Surgical repair was performed using cardiopulmonary bypass (CPB) via a median sternotomy. Age, sex, presentation, site and outcome of surgical repair were analyzed.
Results:
Ruptured SVA's was more common in males (75.86%). Right coronary cusp was involved in 79.3% patients of the ruptured SVA's cases. Most common ruptured site was right ventricle (86.20%). Aortic regurgitation was observed in 24.13% and ventricular septal defects in 17.24% cases. Primary closure of the defect with pladgeted stitches was done in 82.75% cases while patch closure was done in 17.24% cases. Preoperatively, 34.48% & 51.72% patients were having NYHA functional status III & IV respectively, while postoperatively 50% & 35.71% patients were having NYHA functional status I & II respectively. Mortality was 3.44% (n=1/29) and one (3.44%) patient had residual leak and managed conservatively. Two years follow up showed no complication regarding ruptured SVA.
Conclusion:
SVA are very uncommon anomalies in our setup, which commonly involve right coronary cusp and rupture mostly into right side of heart. Surgical repair of VSA is a safe procedure having good outcome in terms of morbidity and mortality.

Cardiac surgery services in less facilitated deprived world. Helping the needy people beyond borders, at Amiri Medical Complex, Kabul, Afghanistan.

Muhammad Asim Shah

Objectives:
To establish safe Cardiac Surgical practice in less facilitated deprived parts of the world for helping the needy people beyond borders.
Material and Methods:
All the patients operated by the author at Amiri Medical Complex Kabul Afghanistan, for one year (from July 2016 to July 2017) were included. Data was recorded prospectively in the dedicated computer in MS-Excel format, Patients were grouped into Cardiac Surgical Procedures (further divided into Open Heart & Closed Heart procedures), Vascular Surgical Procedures, Thoracic Surgical Procedures and Miscellaneous Surgical Procedures (Isolated IABP insertion, Re-exploration, debridement & rewiring; etc).
Results:
Total of 290 Patients were operated in the mentioned time period. There were 176 Cardiac Surgical Procedures consisting of 154 Open Heart Surgeries and 22 Closed Heart Surgeries. Vascular Surgical procedures of different types were 76 in number. Twenty-four (24) patients were operated for Thoracic Surgical procedures. Patients requiring Miscellaneous Surgical procedures were 14 in number.

Electrocautery Maze Procedure for Atrial Fibrillation

Shahid Malik

Objectives:
The Cox Maze III is regarded as the standard surgical procedure for correction of atrial fibrillation. However, its universal acceptance is limited by the extensive nature of the surgery. Hence the innovation of various

lessor invasive procedures likes Cryo probe and others. The surgical diathermy is a rad iofrequency generator that can be used to create surgical lesion, which cause interruption of the basic flutter cycle that initiates or maintains atrial fibrillation.

Methods:

Results are presented of 47 cases, where an ordinary diathermy was used to create bi-atrial lesions creating an electrocautery maze during concomitant Mitral and Tricuspid valve surgery. Atrial appendage was ligated in all patients. LA Reduction was carried out in MVR group where indicated.

Results:

MVR + Bi atrial Maze 22
MVR + Left atrial Maze 06
AVR + MVR + Bi atrial Maze 10
TVR + MVR + Left atrial Maze 06
MVR + CABG + Right atrial Maze 03

We achieved initial 80% conversion rate of Atrial Fibrillation to sinus rhythm, which dropped to 60% at 6 months. All patients were placed on anti-arrhythmic drugs for period of 6 months at least.

Conclusion:

Electrocautery Maze appears to be a simple, effective and reproducible method to cure atrial fibrillation.

How to Create a Carotid Shunt for Carotid Endarterectomy

Shahid Malik

Background:

Any type of a protective vascular shunt for carotid endarterectomy is not readily available in the market. Many surgeons perform carotid endarterectomy by simply clamping the carotid vessels. This method has been reported to have an incidence of 8% stroke. To overcome this issue a carotid shunt was crafted from the routinely available disposables available in any cardiac operation theater.

Methods:

Two femoral sheaths were connected together through a three-way connector. A pressure transducer could also be attached to this construction for continuous monitoring of carotid blood pressure.

Results:

The locally crafted shunt proved to be an excellent device.

Conclusion:

The imported carotid shunts may cost somewhere between 250 to 350 dollars in Pakistan. The cost of the locally crafted shunt is less than Rs.200/=

Pre-operative Renal Dysfunction: Impact on Short & Long-Term Survival after Cardiac Surgery: A 13 Years Experience of a Single Centre

Azhar Hussain

Background:

Pre-operative renal dysfunction is a well-known risk factor for post cardiac surgery mortality and morbidity. SCTS (The Society for Cardiothoracic Surgery) national database reported that the 5-year survival in patients with elevated creatinine is 60% while the 5-year survival in patient with no renal disease is 90%. The purpose of this study is to analyze the operative mortality and short and long-term survival of post-cardiac surgery patients who had renal dysfunction pre-operatively.

Methods:

Out of 1056 patients who underwent cardiac surgery only 268 (2.5%) patients suffered from preoperative renal dysfunction or failure. The operative mortality was determined and short and long-term survival was observed until 2012. The patients were divided in 4 groups on the basis of severity of renal dysfunction: Group 1 (n=69%) Elevated Creatinine >200 umo1/1, Group2 (n=8.6%) Acute Renal Failure on dialysis, Group3 (n=17.6%) Chronic Renal Failure on dialysis and Group 4 (n=4.8%) Renal Transplant.

Results:

In this study 77% of the patients were male with median age of 69 years (2287) and 49% older than 70years. 52% of patients had urgent/emergency operation. Isolated CABG was the operation in 49%. Overall operative mortality was 19.8%. Operative mortality in elective patients was 10.8% and 28% in urgent/emergency patients. Operative mortality in groups 1, 2, 3 and 4 was 19%, 30%, 19% and 7% respectively. Overall 5years survival of all discharged patients was 55% with median survival of 5.8 years. 5 years survival in groups 1, 2, 3 and 4 was 50%, 23%, 36% and 71% with a median survival of 5, 2.5, 2.6 and 7.9 years respectively.

Conclusion:

Age above 70 years, pre-op ARF and dialysis, new post-operative dialysis and CABG + Valve procedures in this cohort demonstrated poor short and long-term survival. Transplant patients and patients with improved post-operative creatinine exhibited significantly improved survival.

Atrial Myxoma: An Experience In A Tertiary Care Center

Sajid Khan

Objectives:

To assess the success rate of surgical excision, complications and midterm follow up of patients with atrial myxoma in our center.

Methods:

In this retrospective case record study, all patients of atrial myxoma since January 1993 till December 2009 admitted in the department of Cardiovascular Surgery, Lady Reading Hospital Peshawar for surgical excision

were assessed for operative success rate, peri-operative complications and midterm follow up for 6 months.

Results:

A total of 57 patients underwent surgical excision for atrial myxoma. Mean age of the sample was 35.2 ± 16.7 Years. There were 37(64.91%) female patients. Forty-five (78.94%) patients had palpitations while 38 (66.66%) patients reported shortness of breath and 5 (8.77%) patients had atrial fibrillation preoperatively. Diagnosis of atrial myxoma was made with trans-thoracic echocardiography in 50 (87.71%) patients. Fifty (87.71%) patients had myxoma located in the left atrium while five (8.77%) patients had myxoma in the right atrium and two (3.5%) patients had the myxoma attached to the mitral valve leaflets. Only 2 patients had embolic phenomenon; one recovered completely in two weeks' time while the other underwent successful embolectomy. There was no intra-operative mortality and only one patient died post operatively due to multi-organ failure. On six months follow up, there was no local recurrence while 8 (14.03%) patients had atrial fibrillation. Only two patients (3.5%) were lost to follow up.

Conclusion:

Our experience with surgical excision of atrial myxoma suggests that it is curative with minimum complications and recurrence rate.

Factors Associated With Increased Mediastinal Bleeding In Patients Undergoing Isolated Primary Coronary Artery Bypass Grafting (CABG)

Ali Shan Iqbal

Background:

Mediastinal bleeding is a known complication in patients undergoing Coronary Artery Bypass Grafting (CABG). It may lead to exponential increase in patient morbidity and mortality. Reoperation and blood transfusion are important contributors towards poor outcome. A better understanding of the causes of postoperative bleeding amongst our local population could help reduce the incidence of transfusion and reoperation.

Objectives:

To identify the factors associated with excessive bleeding postoperatively.

Methods:

The study was based on retrospective data derived from Cardiothoracic Surgery Registry (CTSR) at Tabba Heart Institute (THI). All consecutive cases from January 2016 till December 2016 were assessed for inclusion in the analysis. Only First time CABG cases were included in analysis. Redo, Valve and combined cases were excluded from the analysis. The excessive mediastinal bleeding (EMB) was defined as > 1 Litre blood loss in first 24 hours. Univariate analysis performed to identify the potential predictors of EMB.

Results:

The study population consisted of 1265 adult patients who have undergone isolated CABG procedure. EMB incidence was 26%, associated with male gender (P=< 0.001), Diabetes (P=0.036), Congestive Heart Failure (CHF) (P=0.034), Age (P=<0.001), Body mass index (P=<0.001), Body Surface Area (P=<0.001), preoperative creatinine clearance (P=<0.001), perfusion time (P = 0.001), X-Clamp time (0.034) and usage of intra-operative blood product (P=<0.001).

Conclusion:

Preoperative factors associated with excessive mediastinal bleeding were male gender, Diabetes, CHF, Age, BMI, BSA, preoperative creatinine clearance, and intra-operative factors were increased perfusion and Cross-Clamp time and usage of blood products.

Early experience with Aortic Valve Sparing Root Replacement

Dr. Sulaiman Hasan

Objectives:

Aortic root replacement with preservation of the aortic valve was developed by Yacoub and David in 90s and has been performed with increasing frequency around the world. We reviewed our early experience with the David (Re-implantation) procedure.

Methods:

Five patients who underwent the David procedure, three at Aga Khan University Hospital and two at Tabba Heart Institute were included in this review. Indications, patient characteristics, operative findings, techniques, post-operative course, complications and follow up data were reviewed.

Results:

Two patients with Marfan syndrome underwent emergency operation for acute type A aortic dissection. One 24-year old female with postpartum cardiomyopathy had mild aortic regurgitation (AR) and underwent operation with direct aortic cannulation and profound hypothermic circulatory arrest. A 29-year old man had severe AR with pulmonary edema and cardiogenic shock. He was operated with right axillary artery cannulation and selective antegrade cerebral perfusion (SACP). Both have competent aortic valves and are doing well at one year follow up. One female and two male patients had elective operation for ascending aortic aneurysm and annulo-aortic ectasia and severe symptomatic AR. All had aortic arch cannulation, two had aortic cross clamp and cardioplegia with moderate hypothermia and one required 15 minutes of profound hypothermic circulatory arrest. One patient also required plication of a prolapsing right coronary leaflet. This patient required sternal re-wiring. At 1 to 16 months follow

up, all the valves were competent and there were no gradients. No patient is on anti-coagulants.
Conclusion: Our limited early experience suggests that the David operation can be performed safely and with excellent early results.

Surgical Treatment of Atrial Fibrillation: Early Experience in Karachi

Sulaiman Hasan

Objectives:
Since the introduction of the Maze procedure by James Cox in 1991, surgical ablation of atrial fibrillation has been performed with increasing frequency around the world. In Karachi, we started performing the Maze operation in December 2015, as an adjunct to valve and CABG procedures. Here we review our procedures, their successes, complications and failures.
Methods:
The study is based on prospective data derived from Cardiothoracic Surgery Registry (CTSR) at Tabba Heart Institute and Aga Khan University. All patients who underwent Cox-Maze IV as a concomitant procedure during Cardiac Surgery between December 2015 and July 2017 are reviewed. The procedures were performed by the senior surgoen using a combination of unipolar radiofrequency (RF) and "cut and sew" techniques.
Results:
A total of 23 procedures were performed. Of these, 5 operations were performed through minimally invasive incisions and 18 through median sternotomy. 20 were combined with valve surgery (12 Repairs) and 3 with Coronary Artery Bypass Grafting (CABG) surgery. Preoperatively 3 patients had paroxysmal AF, 2 of those remained in Normal Sinus Rhythm (NSR) postoperatively. 20 patients had chronic AF, of these 12 remained in NSR postoperatively, 9 patients required cardioversion postoperatively and one refused. At last follow up, 20 patients are in NSR, 2 are still in AF and one patient developed
tachy brady syndrome and required permanent pacemaker (PPM).
Conclusion:
The Maze procedure can be added safely to valve or CABG surgery and with good success with unipolar RF as evidenced at early follow up.

Early Experience With Minimally Invasive Open-heart Surgery In Karachi.

Sulaiman Hasan

Objectives:
To review the initial experience with minimally invasive cardiac surgery in two institutions in Karachi, with regard to approaches, challenges, operative procedures, complications, conversions, reoperations and mortality.
Methods:
The study is based on retrospective data derived from Cardiothoracic Surgery Registry (CTSR) at Tabba Heart Institute and Aga Khan University. All consecutive minimally invasive cardiac surgery procedures from March 2015 till August 2017 are included in the review. Intra-operative trans-esophageal echocardiogram was done and extra pleural catheters for local anesthetic infusion were placed in all the mini thoracotomy and valve procedures.
Results:
Total 14 procedures were performed from 2015 to date. 4 operations were performed through lower partial sternotomy and 10 through mini thoracotomy. Two had Mitral Valve (MV) repair, 3 had MV & Tricuspid Valve (TV) Repair + Cox Maze + Left Atrial Reduction, one was MV Repair + Cox Maze, 5 had Atrial Septal Defect (ASD) Repair, one had MV & TV Repair, one had MV Replacement + Cox Maze and one had MV Replacement. There were no conversions. Cardiopulmonary bypass and cross clamp time were longer than expected for similar operations performed through median sternotomy. There was a trend toward less blood loss, less transfusion, less analgesic requirement. There is no mortality to date. Hospital stay thus far has been no different than in full sternotomy patients having similar operations. One patient with rheumatic mitral regurgitation (MR) and stenosis required reoperation at 6 months for recurrent severe MR after an initially successful repair (intra and post-operative TEE). Patients were discharged without restrictions on activities.
Conclusion:
Minimally invasive open-heart surgery can be started safely in both multi-specialty and single specialty hospitals. Complex valve repairs, complete right and left sided Maze lesions, atrial septal defects, multivalve procedures etc. can be performed safely and with good, focused exposure through less invasive means than full sternotomy.

Cardiac Surgery Registry: Value, Benefit and Significance

Ali Imran

Objectives:
At present in USA (Society of Thoracic Surgeons (STS database) and in Europe (ECSUR), National Cardiothoracic Surgical registers are fully operational with participation of good number of cardiac centers voluntarily. Whereas, in Pakistan, we have yet to start a national level cardiac surgery registry. We work out to review the benefits, value and significance of cardiac surgery registry.
Methods:

Cardiothoracic Surgery (CTS) Department of Tabba Heart Institute (THI) has been maintaining a computerized Cardiac Surgery Registry (CSR) for all the patients undergoing cardiac surgery since 2011. The study will be based on retrospective data derived from CSR of THI. We chart down procedure distribution by Surgeon and overall for department, that was divided into five major groups, i.e., Isolated Coronary Artery Bypass Grafting (CABG), CABG + Mitral Valve (MV) Repair, CABG + Valve Replacement, Isolated Valve Procedures and "Other and Combination". Further we chart down Isolated CABG and All Cases observed Morbidity (Reopening) and Mortality and its comparison with expected percentage, and national and international published results. Observed and expected morbidity and mortality further evaluated through funnel plot and quintiles.

Results:

Between January 1, 2017, and June 30, 2017, total 807 cases were operated at Cardiothoracic Surgery Department of THI. Isolated CABG Re-operation due to bleeding and re-grafting observed percentage was 6.2% and expected STS was 5.3%. Isolated CABG crude mortality was 2.9%, expected STS was 1.7%, Euroscore-II was 2.5% and THI calculator was 2.35%. All Cases crude mortality was 4.0% and expected Euroscore-II mortality percentage was 3.36%. Re-operation and mortality funnel plots are given with 95% and 99% lower and upper control limits. Expected re-operation and mortality percentages divided in quintiles and each quintile displayed with expected and observed percentages.

Conclusion:

Improvements in the surgical treatment of cardiac diseases are possible only when implementation of current methods and development of new methods are based on the solid ground of large and reliable clinical data. Knowledge on these issues can be generated by clinical prospective registries.

Cardiac Surgery Registry: Future Plan; Development of isolated coronary artery bypass grafting (CABG) mortality risk stratification model

Ali Imran

Background:

Risk models of isolated coronary artery bypass grafting (CABG) have been reported from several series, in western countries. The Society of Thoracic Surgeons (STS), National Adult Cardiac Database (NCD) and European System for Cardiac Operative Risk Evaluation (EuroSCORE) have contributed much to this field. Our Objective is to develop mortality Risk stratification model of isolated coronary artery bypass grafting (CABG) using a structured prospective database in order to assess and improve the quality of cardiac surgical care. The outcome of risk model is mortality.

Methods:

The study population consisted of 5324 adult patients who have undergone isolated CABG procedure between January 1, 2011, and June 30, 2016 at Tabba Heart Institute (THI). The structured database was then divided into developmental and validation subsets. Model developmental dataset consist of 4793 patients and was used for the construction of risk model whereas validation dataset consists of 531 patients and was used for testing and validation of risk model. Model discrimination ability was tested using the area under the receiver operating characteristic (ROC) curve (C index). Model calibration was tested by the Hosmer-Lemeshow (H-L) test.

Results:

Of 4793 subjects, the mean age was 57.7±8.8 years, with 17.5% females. The observed mortality rate was 2.4% in model development dataset. Logistic regression analysis revealed that the influential risk factor that were found to statistically significant were Age, CCS Class IV, creatinine clearance < 50 (ml/min), critical preoperative state and emergent or salvage procedure status. The validation dataset had H-L Chi Square = 13.36 (p 0.100) and discriminating area under the ROC curve = 0.7588 (CI= 0.735-0.836), that were satisfactory. We compared the performances of the scores developed at THI with EuroSCORE-II and the STS risk prediction algorithm. These models applied to 531 patients, operated at the same institute between January 2016, and June 2016. The actual mortality was 2.8%. The mean STS was 1.17%, the EuroScore-ll was 2.44% and THI score was also 2.44%. The H-L test gave a P-value of 0.328 for STS, 0.093 for EuroScore-ll and 0.163 for THI score. The area under the ROC curve was 0.728 for STS, 0.770 for EuroScore-II and 0.756 for THI score.

Conclusion:

The single-center patient sample in this score limits the conclusions. In summary, this study demonstrates the need for developing clinical Cardiac Surgery Registry in Pakistan and conducting large prospective studies evaluating various risk stratification methods best suited for Pakistani patients.

Strategies for Maintaining Hemodynamic Stability OPCAB

Khalid Hameed

Objectives:

To compare mortality and morbidity in off-pump and on pump CABG

Methods:

A retrospective cohort study was conducted on total sample of 11866 patients through non-probability convenience sampling who underwent CABG between

years 2000-2016. Pre-operative, peri-operative and post-operative data collected from data bank. Follow-up information was obtained from telephone contact mean time 24 ± 6 months after surgery. Early and late outcomes were compared by univariate and Kaplan-Meier analysis.

Results:

CABG was performed in 11866 patients, 9956 underwent the procedure off Pump and 2370 on pump. There have been 63 expiries in patients undergoing OPCAB with 0.61% mortality rate. While 76 expiries in patients undergoing on pump CABG with 4.12% mortality rate. A conversion ratio of 4.85% was observed.

Conclusion:

The mortality significantly decreased in Off-pump CABG procedures as compared to On-pump CABG procedures. There are reduced post op complications in Off-pump procedures, concluding that off pump procedures have increased beneficial role.

OPCAB RCA Endarterectomy

Khalid Hameed

Objectives:

Comparison between off pump and on pump RC endarterectomy on basis of peri-operative complications.

Methods:

A retrospective cohort study of 161 patients undergone RCA endarterectomy between January 2010 and December 2016 was performed on a sample obtained by non-probability sampling.

Results:

From 161 patients with ischemic heart disease (IHD) who underwent combined coronary endarterectomy (CEA) and CABG, off-pump technique was used for 124 (77%) patients and on-pump was used on 36 (4.47%) patients, mean age 55.3 ± 6.4. Out of 161 patients, 136 were male and 25 were female. Total number of anastomosis was 560 for 161 patients or 3.47 per patient. All of them had long lasting history of IHD. Complete revascularization was achieved for all patients. At discharge clinical improvement was evident in patients with functional classes 0-1.

Conclusion:

Diffuse involvement of coronary arteries is not considered to be a contraindication for CABG. Simultaneous coronary endarterectomy with off-pump technique helps to achieve complete myocardial revascularization and good early outcomes, comparable with the results of conventional CPB-assisted procedures.

Effect of Hypophosphatemia on Post-operative Outcome of Cardiac Surgery

Adnan Ali Khahro

Objectives:

Significant hypophosphatemia (below 2.7 mg/dl) is associated with adverse surgical outcomes in terms of morbidity and mortality. This study was designed to establish association of phosphorus levels with surgical outcome of patients in our setup.

Methods:

This was an observational prospective case control study conducted at Department of Cardiac Surgery, Civil Hospital Karachi during May 2015 to August 2015 and consisted of 55 patients. Phosphorus levels were measured at three points of hospital stay; a) preoperatively, b) immediately post operatively and c) at first post op day. Patients were divided in two groups according to immediate post-operative phosphate levels.

Results:

Hypophosphatemia was found in 27.3% patients immediately after surgery and 38.2% patients at first post-operative day. No significant difference was found in intra operative management of patient. However, postoperative course of both groups differs significantly in two groups in terms of duration of ventilation (11.9 ±11.6 versus 6.1 ±5.5 hours, p 0.002), duration of ICU stay (3.5 ±1.5 versus 2.4±0.7 days, p 0.01) and duration of inotropic support needed (45.5 ±31.2 versus 25.0 ±12.4 hours, p 0.001). Patients with hypophosphatemia have significantly more blood loss (998.7 ±1217.8 versus 526.8 ±322.0, p 0.001) and received more blood transfusions post operatively (1.80 ±2.09 versus 0.8 ±0.9, p 0.009). No significant difference of post-operative mortality was found in both groups (15.3% versus 3.2%, p 0.07).

Conclusion:

Hypophosphatemia is found to be common finding in post-operative cardiac surgery patients and associated with increased risk of complications. It is highly recommended that serum phosphorus levels should be routinely monitored post operatively and appropriate replacement should be given.

Concomitant CABG And CEA Experience From A Tertiary Care Hospital

Syed Shahab Ud Din

Objectives:

Clinical studies show that coronary artery bypass grafting (CABG) with either staged or synchronous carotid endarterectomy (CEA) is associated with a high procedural stroke or death rate. It is believed that the risk of combined procedures is significantly higher than the additive risk of staged procedures however, considering risk and benefits difference recent studies suggest concomitant CEA and CABG in selected group that may be of particular value in a resource

constrained developing country setup. We aimed to evaluate safety and risks of concomitant CABG and CEA in patients with severe carotid stenosis and coronary artery disease.

Methods:

Retrospective analysis of prospectively maintained databas of patients who underwent combined CABG and CEA surgery.

Results:

A total 32 patients underwent combined procedure. There were 29 males and 3 female patients. All patients underwent preoperative coronary angiography and either carotid magnetic resonance angiography or CT angiography for their carotid workup. CEA were performed by a single vascular surgeon before CABG in same sitting. No intraoperative complications were reported. Perioperative complications were reported in 2 patients, one patient had left MCA infarct and in the other the chest was re-opened due to cardiac tamponade without any neurological deficit. One patient died on the 8th post op day due to pulmonary complication.

Conclusion:

Concomitant CEA and CABG is a safe and effective procedure in patients with significant coronary and carotid artery disease. Careful patient selection and pre-operative work-up involving multidisciplinary team is a key determinant of outcome. The approach may be a feasible in resource constraints

Significance Of Dental Clearance And Outcomes In Valvular Heart surgery: Evidence From Low To Middle Income Country

Syed Shahab Ud Din

Objectives:

We aimed to estimate the frequency of dental foci id 30-day clinical outcomes in patients scheduled for replacement or repair of **cart** valve at a tertiary care hospital in Karachi.

Methods:

All scheduled patients aged 15 years and above undergoing elective valvular heart surgery for repair or replacement of heart valve with or w i bout coronary artery bypass grafting (CABG) surgery. Patients were advised io undergo a through dental assessment and treatment prior to surgery by a qualified dentist.

Results:

A total 87 patients were recruited and a vast majority 85 (98.1%) had acquired valvular disease. Thirteen (15%) underwent concomitant valvular and CABG procedure. The mean age was 53.2±16.2 years and 50 (57.5) were male. Overall prevalence of dental foci was 65 (74.7%). A substantial number of patients had a combination of dental ailments (76.9%), including isolated periodontitis (47%), carious or decayed dentition 37.9%, pericoronitis (32.2%), edentulous teeth found in 16% and broken root remnant in 15% patients that required extractions. Observed post-operative morbidity was relatively low, 3 (3.5%) reopened for cardiac or non-cardiac reason, one each developed pneumonia and SSI. Thirty-day mortality was (2.3%) due to cardiac reasons.

Conclusion:

The high magnitude of dental infectious foci manifested in valvular heart surgery patient warranted a proper dental evaluation and clearance prior to valvular heart surgery to improve perioperative care and short and long term surgical outcomes. This study urges to reinforce the AHA recommendation to abide the guidelines on an institutional and national level to achieve the benchmark to ensure standards of care.

Clinical Outcomes Of Redo Cardiac Surgery In Adults: A Single Center Experience

Syed Shahab Ud Din

Objectives:

Redo adult cardiac surgery is technically challenging due to scarring of tissues resulting in loss of tissue planes, adhesions and are associated with an increased risk of postoperative morbidity and mortality. We aimed to assess composite end points (morbidity and mortality) in re-do cardiac surgery in patients presenting at Aga Khan University Hospital.

Methods:

All adult (>18 years) patient who underwent redo Cardiac Surgery during January 2010 to January 2017 were enrolled. Preoperative, perioperative, and postoperative data were collected including postoperative morbidity and mortality.

Results:

A total 92 patients underwent re-do cardiac surgery during specified period. Mean age was 54.5±4.5 years and 76% were male. Of the total, 50% patients had a valve replacement, 44.6% had isolated CABG and 5.4% had CABG +MVR/AVR. Of the total, 60.9% (n=56) patients were re-operated after 10 years from their index surgery. Blocked grafts (46.7%), followed by regurgitated valve (22.8%) and valvular stenosis (20.7%) were found as the main reasons of redo. The mean CPB time and aortic cross clamp was 168.4 min and 102.2 min respectively. Overall, in-hospital mortality was 3% whereas, 43.9% had one or more minor or major complications including cardiac related (arrhythmia and heart block) and wound infection (9.8%).

Conclusion:

The clinical endpoints in redo cardiac surgery are comparable. The mortality is low; however, morbidity is relatively high in this sub-set of patients. Preoperative careful planning and detail work-up is crucial for better outcomes. A long-term follow-up is

critical to evaluate compliance to secondary prevention through periodical follow up.

Optimum time for antibiotic prophylaxis prior to surgical incision in open heart surgery in pediatric population

Muneer Amanullah

Objectives:
To determine whether:
1. The time at which antibiotic prophylaxis is given pre-operatively has a correlation with the incidence of SSIs in paediatric patients undergoing open heart surgeries.
2. The NSIPP guidelines regarding administration of antibiotic prophylaxis are being implemented at the AKUH.

Methods:
We conducted a retrospective cohort study with 258 patients undergoing open heart surgeries in 2016. We excluded cases involving the adult age group, reopening of surgical sites and patients with low cardiac output syndrome. Additionally, we took note ofpossible confounders such as age, birth weight, BMI and comorbidities such as congenital abnormalities, diabetes, hypertension and lung disease. Any significant pre-, peri- and postoperative findings were also recorded.

Results:
We are yet to analyze the data that we have collected. The incidence of SSIs will be calculated and divided into time intervals in order to determine at which time interval, between administration of pre-operative antibiotic prophylaxis and time of incision, the incidence of SSIs was the greatest in our study population.

Conclusion: Pending

Frequency Of Acute Kidney Injury In Patients Undergoing Coronory Artery Bypass Grafting

Aamir Zeb

Objectives:
To find the frequency of acute kidney injury in patients undergoing coronary artery bypass grafting.

Methods:
The study was conducted in cardiovascular unit Lady Reading Hospital Peshawar. It was cross sectional study. Sampling technique was non-probability convenient sampling. Data was collected from 20.2.2013 to 20.8.2013. Total 179 patients included in the study. All patients with known coronary artery disease were included in the study whom were planned for revascularization in the form of coronary artery bypass grafting (CABG). Postoperatively all patients' serum creatinine till 48th post op hour was observed to detect acute kidney injury. Acute Kidney Injury (AKI) was defined as more than 50 % or elevation of 0.3 mg/dl of creatinine level from base line.

Results:
A total of 179 patients undergoing coronary artery bypass grafting were included in the study. Average age of the patients was 46.88 years ±9.91 with range 20-60 years. Patients were divided into four groups according to age. The acute kidney injury after coronary artery bypass grafting was observed in 14 (7.82%) patients. Acute kidney injury was more common in old age and it was non- significantly more common in male gender.

Conclusion:
In spite of current highly advance cardiac surgery techniques and post-operative care still there is high incidence of acute kidney injury following revascularization and subsequent worst outcomes.

Early Surgical Outcomes Of Cardiogenic Shock At A Tertiary Care Hospital In Pakista

Syed Shahab Ud Din

Objectives:
Cardiogenic shock (CS) is the most common cause of in-hospital mortality in patients with acute myocardial infarction (AMI). Early revascularization is associated with lower in-hospital mortality rates than in medically managed patients. The aim of our study is to determine the factors responsible for influencing surgical outcomes in patients with cardiogenic shock followed by AMI.

Methods used:
A retrospective chart review was conducted of patients diagnosed with cardiogenic shock who underwent Coronary Artery Bypass Grafting (CABG) during 2014-2016 at Aga Khan University Hospital, Karachi, Pakistan. Patients with mechanical heart defects and mechanical complications of Myocardial Infarction were excluded.

Results:
A total of 27 AMI patients with cardiogenic shock were identified. The mean (±SD) age was 61.6±9.6 years and 74% were males. The mean ejection fraction at presentation was 34±14.6%. Amongst these 85% were diagnosed with 3 vessel coronary artery disease. Twenty (74%) underwent emergency CABG. All were managed with open chest surgery. The mean duration of hospital stay was 12±6.8 days. Thirty days mortality rate was 52%, with cardiac arrest and multi organ failure (21 % each) being the most common cause.

Conclusion:
The predominant risk of CS was left ventricular failure in patients with complicated MI. The overall mortality in CS is comparable to those with other published studies. Early and accurate risk stratification in an

acute setting is critical as it influences treatment decisions and outcomes.

Intermediate Term Outcomes After Bioprosthetic Valve Replacement.

Syed Shahab Ud Din

Objectives:
With the improvement of bioprostheses, increasing population of young patients undergoing valve replacement are opting for bioprosthetic substitutes due to anticoagulation-free regime. The evaluation of durability, associated factors and outcomes of bioprostheses implantation in our settings may help to improve post-operative morbidity and mortality. We determined intermediate term thromboembolic events and survival in patients with biological prosthetic substitutes.
Methods:
All adult patients undergoing bioprosthetic valve replacement during the year 2006 to 2010 were recruited. A trained data collector conducted the telephonic interview to collect information on vital status, complications and readmission required after index surgery.
Results:
A total of 247 patients underwent either mitral or aortic and combined valve replacement. Of these 114 (46.2%) patients were successfully followed-up. Mean age ofpatients was 49.1±15.9 years and 54.5% were female. Median follow-up time was 5.9(range 0.08-10.4) years. Of those responded, 94(80.7%) were survivors. About 50% of them had experienced one or more morbidity. Atrial fibrillation 21(18.4%), Pneumonia/chest pain/heaviness/SOB 13(11%), stroke and MI or cardiac failure 14(12%), SSI 3 (2.6%), early coagulation/bleeding problem 4(3.5%), infective endocarditis 2(1.8%) and 3(3%) required reoperation. Twenty-two died (19.3%). Median time to death was 6.6(range 0.11-10) years. Cause of death include stroke/MI/cardiac failure 9 (8%), coagulation problem and infective endocarditis 1(0.9%) each, pneumonia 2(1.9%) and in 9(7.9%), causes of death remained unspecified.
Conclusion:
Intermediate duration of follow-up of patients with bioprosthetic substitutes has shown substantial but comparable morbidity and mortality. Long-term postoperative surveillance with yearly echocardiography monitoring for structural deterioration is advisable to improve quality of life and survival.

Comparing outcomes in patients undergoing CABG with and without using LIMA in a tertiary care hospital

Syed Shahab Ud Din

Objectives:
The Left Internal Mammary Artery (LIMA) is the gold standard conduit and has been associated with improved survival, graft patency, and a lower rate of re-intervention. Intraoperative usage of IMA is considered to be one of the important quality indicators as well. However, the use of LIMA is precluded in certain subset of patients having composite risk factors like advanced age, obesity and emergent nature of procedure. The purpose of this study is to compare the outcomes in two groups and secondarily to see the compliance as quality indicator.
Methods:
A retrospective review was carried out for all patients who underwent Isolated CABG procedures from January 2010 to December 2016 at Aga Khan University Hospital (AKUH). The demographic, preoperative, intraoperative and postoperative variables were recorded and compared in patients between LIMA (Group **—I)** was used and not used (Group-II).
Results:
A total of 2846 patient underwent isolated CABG surgery. The LIMA was used in more than 90% of the patients (n=2656). The comorbidities were comparable such as diabetes, hypertension, and chronic lung diseases. However, incidence of CHF, MI and arrhythmias were significantly higher in those where LIMA was not used. Intraoperative cross clamp and bypass time and Post-operative SSI, stroke, prolonged ventilation and hospital length of stay were significantly higher in Group **II** along with an increased mortality.
Conclusion:
The outcomes of CABG procedures without LIMA were not encouraging. Presence of other risk factors may contribute to poor outcome in group II. Our results support compliance to standard adult cardiac surgery quality of care guidelines.

The Glenn Procedure-clinical Outcomes In Patients With Complex Congenital Heart Disease

Syed Shahab Ud Din

Background:
Congenital heart diseases are common, affecting more than 40,000 children annually in Pakistan. Approximately 80% of patients will require at least one surgical intervention to achieve a complete/palliative cardiac repair. The Glenn shunt is established between Superior Vena Cava (SVC) and right pulmonary artery as a palliative procedure to provide an anastomosis offering minimal risk to patients with univentricular heart disease. The aim of this study was to assess the

clinical outcomes of Glenn shunt procedure in patients with complex congenital heart diseases.

Methods:

A retrospective chart review was conducted on 79 patients who underwent Bidirectional Glenn shunt procedure at Aga Khan University Hospital, Karachi, Pakistan, from June 2006 to June 2015. All surgeries were performed under cardiopulmonary bypass.

Results:

The median age was 1.9 years and 54.5% were male. Pulmonary stenosis/atresia was present in 98.7% of the sample, followed by double inlet/outlet RV (36.7%) and tricuspid atresia (30.4%). Over all morbidity was relatively high, which included arrhythmias (6.5%), pleural effusion (8.9%), wound infection (20.3%), pulmonary infection (15.2%) and coagulopathy (5.1%), most of which were reversible within hospital stay; reopening was required in 8.9% of the patients and 16.5% were readmitted within a month. There were 6 (7.6%) deaths in total and 5.1% were referred for Fontan stage completion.

Conclusion:

Bidirectional Glenn shunt procedure can be performed safely in patients with ideal characteristics as the first stage palliation and has favorable results with low rate of complications. The procedure can be performed with acceptable mortality in the children and provides effective and long term palliation.

Incidence And Clinical Outcomes Of Aki In Children Undergoing Correction Of Congenital Heart Diseases

Syed Shahab Ud Din

Objectives:

Congenital heart disease (CHD) occurs in around 0.8% of live births and about half of the cases will require surgical repair.1 Acute kidney injury (AKI) is an independent predictor of morbidity and mortality in children undergoing pediatric cardiac surgery. The objective of this study is to estimate the incidence and short-term clinical outcomes of AM in children undergoing elective congenital cardiac surgery (CCS).

Methods:

All children aged 30 days to 15 years undergoing CCS between January-December 2016 were recruited. Pre-op and highest postop creatinine level were used and AKI defined on RIFLE criteria (Change in eGFR >25 risk, >50 injury and >75 as failure.

Results:

A total 91 children met the inclusion criteria and 52 (57%) were male. The incidence of AKI was 48%, 25 (28%) were at risk, 11 (12%) injury, and 8 (9%) were in failure category. There was no significant difference observed like, gender, Pre-Op eGFR, pre and peri-operative variables and RACH score. However mean hyperglycemia ($p=0.024$) and post-operative BUN (0.044) and eGFR ($p<0.001$) were significantly different in AM group. Peritoneal dialysis required in 2 (2.2%) cases. Morbidity rates were 7.7 vs. 2% and mortality was 2 (2.2%) vs. 1 (1.1%) in AKI and non AKI group respectively.

Conclusion:

The incidence of AM is substantial (48%) in children undergoing CCS on RIFLE criteria. Strict control of blood glucose with insulin therapy reduced the incidence of acute kidney injury (AKI). Risk stratification, prompt recognition and management ofAKI improve prognosis and outcomes.

Right Ventricular Outflow Reconstruction With Handmade Valve Conduit - A Short Experience

Syed Shahab Ud Din

Objectives:

Right ventricular outflow tract continuity abnormalities are one of the most commonly encountered entities in the field of congenital cardiac surgery. Various strategies including homograft, valve conduit, Contegra, and patch enlargement with valve replacement or reconstruction are used to restore anatomical and functional continuity between right ventricle and pulmonary artery. In countries like Pakistan these may not be easily available and affordable. We report the experience of our short observational study of using a handmade trileaflet valve conduit to reconstruct the right ventricular outflow tract.

Methods:

From September 2015 to December 2016, a total of 15 patients with different congenital heart diseases underwent open-heart surgery at Aga Khan University Hospital. Restoration of RV to PA continuity done by using handmade valve conduit. The bovine pericardium and thin sheet PTFE sheets (0.5mm) were used to construct conduit and valve respectively.

Results:

Patients ranged from 1 year to 16 years. Seven patients have had previous palliation including 4 BT Shunts and 3 PA banding. One patient underwent 3rd time redo procedure for RV to PA homograft stenosis. Postoperative complications were observed in 4 patient including 2 in hospital deaths and 2 required interventions. One patient developed aneurysm at RV-conduit junction requiring surgical repair and the other underwent conduit dilatation for moderate to severe stenosis (gradient 60mmHg). No significant regurgitation was observed in this series. Overall postoperative gradients were stable with mean gradient 25.3 mmHg (8mmhg - 60mmHg).

Conclusion:

The use of handmade valve conduits has acceptable morbidity and mortality. They are a cost effective alternatives in this part of the world, where well-

established conduits have cost implications and uncertain availability.

Coronary endarterectomy statistics in Coronary Artery Bypass grafting (CABG) patients and its outcome.

Introduction:
Coronary artery disease due to recent advancements in medicine is frequently treated by interventions (PCI) by the cardiologist with the complex, long segment disease being referred to Cardiac Surgery. It has therefore become more challenging for the cardiac surgeons to attain adequate revascularization, which prompt them to proceed to Coronary endarterectomy during surgery for favorable outcome. During Coronary Artery Bypass Grafting (CABG), coronary endarterectomy i.e removal of atheromatous plaque in the inner lining of an artery constricted by the buildup of deposits is done in patients where there is a long segment total occlusion of a vessel with no appropriate place to anastomose a graft.
Methodology:
All CABG patients over 16 months duration, from 1 Nov 2015 to 31 May 2017. Institutional Ethical Board approval was acquired. The charts of all the patients who underwent CABG during the study duration were analyzed retrospectively. We collected data on all patients who required coronary endarterectomy during the surgery, with the information collected on data extraction sheets and used excel for statistics and analysis.
Results:
During the study duration the total CABGs performed were 849. We were able to get complete records of 840 patients. Upon reviewing them we found 130 (15.3%) CE patients. The range of age at the time of surgery of these patients was 43 to 75 years in which 29 were females. In co morbidities it was seen that 72 patients had hypertension, 42 were diabetic and 1 patient had end stage renal failure. In **9** patients ejection fraction (EF) was <35 and 44 patients had an EF from 40 to 55 with >55 EF seen in 36 patients. Majority patients were taking preoperative statins, nitrates, b blockers and antiplatelet. RCA was the most common artery with endarterectomy done i.e. 66 patients followed by LAD in 48 patients, OM in 16 patients, 13 diagonals and 4 Ramus. In total 20 patients had 2 vessels endarterectomy. It was seen that 2 I patients had 2 vessel CABG surgery, 57 had 3 vessel CABG and 40 had 4 vessel CABG surgery in which LIMA was used in 98 patients. Post operatively, 12 patients had intra-aortic balloon pump (IABP) used and all patients had postop inotrope support for a short duration in ICU. Average aortic clamp time was 54 minutes and Cardiopulmonary Bypass time 84 minutes. No postop respiratory failure occurred and renal failure was seen in one patient who had renal failure pre- operatively. Post operatively, 74 patients had PRBC transfused while 58 patients had FFP and platelets transfused. In the outcomes it was seen that **5** patients stayed for 4 or more days in ICU post op and the rest all remained <3 days. In total 19 patients stayed for more than 10 days in hospital. There were 2 Postop mortality cases in these patients. When blood group analysis was done it was seen that B+ was the most common blood group in 36 patients, 31 had 0 blood group, 25 with A+ blood group, 2 A-, 16AB + and 5 B- blood group.
Conclusion: Coronary endarterectomy has a favorable outcome and the best option for long segment totally occluded vessel-needing revascularization.
Dr. Somaiya Rehman Adult Cardiac Surgeon

Feeding Jejunostomy As a Lifeline for Esophageal Surgery

Farhan Ahmed Majeed

Objectives:
Our study intended to share experience about enteral nutrition via feeding jejunostomy in patients undergoing esophagectomies or for palliative purposes and compare our findings with similar studies especially emphasizing about the financial efficacy of feeding jejunostomy without compromising safety of the patients.
Methods:
This is a retrospective observational study conducted at CMH Lahore and CMH Rawalpindi from 2010 to 2016**.** Feeding jejunostomy is a surgical technique for placement of a feeding tube into small intestine mainly for administration of nutrition. Our method was based upon Witzel jejunostomy technique with emphasis on early postoperative commencement of enteral nutrition & achievement of target caloric/protein requirement subsequently. A total of 439 patients who underwent feeding jejunostomy were included. These include patients suffering from any benign or malignant pathology for which esophagectomy was done and those patients who are suffering from inoperable carcinoma and underwent feeding jejunostomy for palliative purposes.
Results:
Result and price analysis shows that feeding jejunostomy is financially viable as per day nutrition cost for feeding via total parenteral nutrition (TPN) is Rs 8500±500 (including required daily labs) and for enteral its around 560±4Ors /day. None of our patient was put on TPN and none suffered from malnutrition. Percentage of complications rendered were on par with the results from similar studies and meta-analysis.
Conclusion:
We conclude that feeding jejunostomy is financially viable with minimal complications, that justifies its use, also a large scale randomized control trial should

be conducted to further comment and warrant enteral nutrition's superiority over TPN.

Experience of rib fixation in 22 blunt chest trauma patients

Ahmed Raza

Introduction:
Rib fractures are present in 10 percent of all trauma patients and about 30 percent of patients with significant chest trauma. There is a paradigm shift in the management of rib fractures from conservative management to operative one. We share experience of rib fixation in 19 chest trauma patients.
Methods:
This is a prospective study carried out in CMH Lahore from Nov 2015 to Dec 2016 in thoracic surgery department. Blunt trauma patients of age 16 to 80 years having four or more rib fractures with displacement are included in the study. Surgery was done after 1ST post trauma day to 20th day. Patients were assessed for postoperative pain response by visual analogue scale (VAS), hospital stay, clinical examination and ventilatory support in acute settings. Follow up examination was done with monthly spirometry and return to work.
Results:
Mean Pain index decreased from pre- op 9.3(on the VAS of 1 to 10) to post op 3.5. Immediate pain recovery was excellent in 60 %, good in 30% and satisfactory in 10%. Excellent response is described as mild pain requiring oral analgesics .60 % operated patients recovered to their work at one month. Three patients required ventilatory support for one day after surgery. Spirometry was normal in about half of the operated patients at one month. Mean number of days of hospital stay is 4.57
Discussion:
Morbidity and mortality associated with rib fractures is caused by pain, decrease in tidal volume, abnormal chest wall movement, aggressive fluid resuscitation, pneumonia and ARDS. Morbidity and mortality increases with the increasing age and increasing nui1iber of rib fractures. Rib fixation can be considered in patients with multiple displaced rib fractures. It causes immediate pain reduction in multiple rib fractures.
Conclusion:
It is concluded that **rib** fixation for chest trauma patients decreases early and late chest pain, decreases ventilator support days, decreases total hospital stay, improves functional recovery and early return to work.

An experience of 33 cases of Tracheal stenosis with primary resection and anastomosis

Tashfeen Imtiaz

Objectives:
The study was carried out to ascertain the outcome of primary resection and anastomosis in 33 patients of tracheal stenosis and to determine the morbidity associated with it.
Methods:
This is a retrospective study of 33 cases of tracheal stenosis over nine years from Jan 2006 to July 2015 in Military hospital thoracic surgery department. Patients included were 33, out of which 17 had tracheostomy. Exclusion criteria included stenosis due to malignant causes and inclusion criteria was stenosis due to inflammatory causes only. Clinical examination, CECT scan of neck and chest, indirect laryngoscopy and discussi on in multi-disciplinary meeting was employed preoperatively in all patients. Preoperative fibreoptic bronchoscopy was done in all the patients, virtual bronchoscopy reconstruction in 30 cases. Sharp dissection aided by loupes was the favoured technique in all the cases. Primary resection and anastomosis was done in a cogwheel pattern with alternating 4/0 and 3/0 vicryl sutures.
Results:
14 Patients were female, 19 were male. 2 patients had history of tracheal trauma and 31 had history of intubation out of which 28 had remained on ventilator for various reasons while 5 patients were intubated for surgical procedures only. Guardian stitch applied to all the cases. None of the patients had tracheostomy postoperatively. 2 patients required intubation postoperatively. 31 patients were extubated on table successfully. Tracheostomy stoma was incorporated in the resection in all cases of tracheostomy. Stenotic segment was less than 2cm in 12 cases. Between 2 to three cm in 26 cases. 3 to 4 cm segment in 6 cases and between 4 to 5cm in 3 patients. In 5 patients emergency surgery within 24 hours was done. Post operatively vocal cord function was normal in all cases. Two patients had twin lesions. 5 patients required anterior cricoid hitch, Thyroid tissue and strap muscle flap for cricoid lesion was used. Anastomosis leakage was in 3 cases two of which were in cricoid level stenosis. Both were managed conservatively with application of continuous suction. One patient had stenosis which was managed successfully with dilatation and granulation removal.
Conclusion:
Tracheal stenosis is a curable disease and primary resection and anastomosis remains the gold standard treatment with acceptable morbidity and mortality.

An Experience of 23 Cases of Total Laryngo-pharyngo-esophagectomie.

Usama Zafar

Objectives:
The study was carried out to ascertain the outcome of total laryngo-pharyngoesophagectomies (TLPO) for malignant cervical esophageal disease and to determine the morbidity associated with it.
Material Methods:
This is a retrospective study of 23 cases of TLPO in four and a half years from Jan 2010 to Aug 2014. Patients included were of histologically proven Squamous cell carcinoma oesophagus, operated with curative intention. Metastatic and per operative unresectable cases were excluded from the study. Clinical examination, CECT scan of neck and chest, indirect laryngoscopy and discussion in multi-disciplinary meeting was employed preoperatively in all patients. All patients were counselled about bilateral recurrent laryngeal nerve division and permanent tracheostomy preoperatively. Stomach was used as conduit and feeding jejunostomy was done intra operatively in all cases with 16 Fr nasogastric tube. Jejunal feeding was started on first post-operative day in all patients. Suction drains in the neck were kept for at least five days and oral feeding was started on 6th-7th day of surgery. Tracheostomy care at home was taught to all patients before discharge from hospital.
Results:
Fourteen (61%) were males and 9(39%) were female patients. All patients had dysphagia to solids in presenting symptoms. 6 (26%) had neoadjuvant radiotherapy. 3 (13%) had tracheostomy done before surgery for respiratory comprise due to tumour. Guardian stitch was applied in 6 patients. Anastomotic leak was seen in 3 (13%) patients. Hemorrhage in 2 (8.6°1), patients. Anastomotic stricture was seen in 1 patient which was managed by dilation under anesthesia. Pneumothorax arld pleural effusions devdloped lin 2(3.6%) and 3(13%) patients respectively and vere managed conservatively with tube thoratostomies. Overall mortality was in 4 (17.3%).
Conclusion:
Upper cervical esophageal malignancies pose significant challenges in managing such patients. Total laryngo-pharyngo-esophagectomY with permanent tracheostomy offers good results in patients with resect able disease and minimizes the morbidity and mortality associated with it.

An Experience of Different Procedures of 52 Chest Wall Malignant Masses

Ahmed

Objectives: The study was carried out to share the experience of procedures on 52 malignant chest wall masses and to determine the morbidity associated with it.
Study design:.
Place and duration of study: The study was
Methodology:
This is a prospective descriptive study conducted in CMH Rawalpindi Jan 2010 to Aug 2013. Total number of cases operated for chest wall malignant masses were 52. Recurrent breast carcinoma proven histologically and malignant masses of chest wall were included in study. Resection of malignant chest masses with reconstruction included only those patients with no metastatic disease.
Results:
52 chest wall malignant masses included in study. 32(61.5%) out of 52 cases were of malignant masses and 20(38.4%) were of recurrent breast carcinomas. 8(15.3%) were of Ewing sarcoma, osteosarcoma was 8(15.3%) and chondrosarcomas were 3(3.84%). Transfusion was required in 46(88%) of the cases. These was no perioperative mortality. 11(21.1%) patients had formation of seroma. 6(11.5%) had surgical site infection which was treated conservatively.
Conclusion:
Chest wall masses treated with wide excision of portion of chest wall along with ribs and reconstructed with prolene mesh augmented with local muscular flaps can be considered a safe and effective procedure with acceptable morbidity and mortality.

An Experience of VATS Thymectomy With OLV tube.

Muhammad Umar

Objectives:
To study the outcome of OLV and feasibility of VATS thymectomy in decreasing ICU stay and morbidity related to procedure.
Methods:
This is a retrospective study of 46 cases of thymectomy done from Jan 2010 to Aug 2013. 28(61%) cases were male and 18(39%) female. Mean age of the patients was 30. We used the right sided approach with OLV tube of left side 37 or 35 French. 30-degree telescope was used with dissection with harmonic scalpel.
Results:
VATS thymectomy was done with four port technique. Mean ICU stay was 1.5 days. Chest tube was removed on first post op day in 32(70%) cases. There was one (1.4%) conversion to partial sternal split. 1(1.4%) patient required blood transfusion. Operating time was reduced to less than one hour from initial two hours. In no patient was CO2 insufflation done. Post-operative

low-pressure suction was maintained. 1(1.4%) patient required post op mechanical ventilator support due to myasthenia crisis. There was no mortality.

Conclusion:

Voiced concerns regarding the ability to perform a complete and total thymectomy by this approach have been frequent. Benefits to video-assisted and all minimally invasive approaches include performance of a less invasive surgical procedure as manifested by less pain, less pulmonary dysfunction, and less exacerbation of myasthenia compared with more invasive standard approaches. It reduces ICU stay and decreases the morbidity and mortality of the procedure.

Early results of excision of 306 cases of Primary Chest Wall Tumors in 15-year period

Amer Bilal

Objectives:

To assess the surgical outcomes in primary chest wall tumors

Methods:

306 patients from Dec 2002 to Dec, 2016 were retrospectively analyzed. Patients of all ages, both sexes and operable primary chest wall tumor were included. Clinical evaluation, routine investigations, chest radiographs, computed tomography and biopsy were done. Incisional biopsy was done for >5cm mass while excisional biopsy was done in smaller tumors. Complete excision of the chest wall tumor with 5cm free margin and one normal rib above and one normal rib below was done. Specimen was sent for histopathology. In skeletal reconstruction plastic surgeon was involved. Patients sent to oncologist for adjuvant therapy accordingly. Three-month follow-up was done.

Results:

Out of 306 patients, 167 were male and 139 were female, age ranges from 9-80 years with a median of 27.8 years. 117 patients experienced painless mass and 89 patients painful mass.169 chest wall masses presented on right side, 103 left sided and 34 on sternum. Sizes were <3cm 103, 3-5cm 112, 5- 10cm 72 and >10 cm 19. Chest wall resection and primary closure was done in 172 cases while in 134 cases resection and reconstruction done using marlex mesh alone in 103 cases and reinforced with methyl methacrylate in 11 cases. Histologically Chondrosarcoma was reported in 61.5%, Fibrosarcoma in 25%, Ewing sarcoma in 11.5% while 2% specimens were reported as chondroma. Postoperative flail observed in 13(4.24%) cases, 9(2.94%) patients died despite prolonged ventilation. All patients referred to oncologist post operatively.

Conclusion:

Primary chest wall tumor can be safely managed by resection and primary closure or chest wall reconstruction and are associated with long term survival.

Experience of Decortication For Empyema Thoracis Over 15 Years

Amer Bilal

Objectives:

To assess the outcome of surgical management of empyema thoracic in cases treated by open decortication.

Methods:

Computerized clinical record of 6939 patients who underwent decortication for empyema thoracic from Dec 2002 to Dec 2017 was retrospectively analyzed. Patient of all ages, both sexes and diagnosed empyema thoracic were included. Medically unfit, empyema due to malignant pleural effusion, empyema due to clotted hemothorax were excluded from the study. All patients were admitted through outpatient department. All patients underwent decortication by conventional posterolateral thoracotomy. . Follow-up ranged from 15 days to 6 months done in all cases**.**

Results:

Out of 6939 patients, 4020 (57.93%) patients were male and 2919 (42.06%) were female, age ranges from 2 to 71 years with a median age of 33.12 years. 3986 (57.44%) underwent right thoracotomy and 2953 (42.55%) left thoracotomy. Bronchopleural fistula was present in 2208 (31.82%) patients and empyema necessitans in 895 (12.89%). Pneumonia and tuberculosis were seen in 2270 (32.71%) and 2708 (39.02%) cases respectively. Mean duration of postoperative chest drain was 14 days. Follow-up ranged from 15 days to 6 months. Morbidity was 237 (3.41 %) including wound infection 92, air leak 71, bleeding 23, failed decortication 51. Mortality was 137 (1.97%) including respiratory failure 97, pulmonary embolism 28 and myocardial infarction in 12 patients.

Conclusion:

Delayed referral causes irreversible changes in the lung prolonging recovery and increasing complication rate. Meticulous decortication gives gratifying results.

Traumatic Diaphragmatic Rupture. Experience of 336 Cases ON er 15 years

Amer Bilal

Objectives:

Experience with traumatic diaphragmatic hernias was reviewed to identify pitfalls in the diagnosis and treatment of this injury.

Material and Methods: A Computerized chart review of all patients admitted to the Thoracic Unit with traumatic diaphragmatic ruptures was undertaken for the period ofApril 2001 to April 2017.

Results:
Out of 336 patients, 191 were male and 145 were female. Age ranges from 14 to 61 years with a median age of 23 years. Diaphragmatic rupture was caused by blunt injury in 229 (68.15%) cases and penetrating Injury in 107 (31.84%) cases. Traumatic diaphragmatic hernia was right-sided in 95 (28.27%) patients and left-sided in 185 (55.05%). The diagnosis was made by chest X-ray, thorax and upper abdominal computed tomography, and upper Gastrointestinal contrast study. Repair of diaphragmatic hernia was performed through a thoracotomy in 232 (69.04%) cases while in 104 cases (30.95%) through thoracolaprotomy. Primary repair was done in 231 cases (68.75%) whereas in 49 cases (14.58%) mesh repair was done. Stomach spleen gut and omentum was present in left side hernia in majority of cases whereas liver gut and omentum was present in right side hernia. The mortality rate was 2.08% (n=7) including respiratory failure in 5 cases and myocardial infarction in 2 cases. Morbidity was 9 (2.67%) including wound infection 8 cases and collection in 1 case. Chest pain, abdominal pain, Or dyspnea were the predominant symptoms
Conclusion:
Early diagnosis and treatment reduce intra-and postoperative morbidity and mortality

Transthoracic Heller's myotomy for achalasia-an experience of 207 cases over 15 years

Amer Bilal

Objectives:
Ideal treatment for achalasia permanently eliminates the dysfunctional lower esophageal sphincter, relieving Dysphagia and regurgitation. The aim of this study was to review the results in a series of patients undergoing standard transthoracic Heller's Myotomy
Methods:
Computerized clinical data of 207 patients from January 2002 to January 2016 was retrospectively analyzed. All had preoperative barium study, manometry and in some cases CT thorax with upper abdomen. After general anesthesia had been induced with double-lumen tracheal intubation, the patient was positioned in right lateral decubitus. Mini thoracotomy performed over 7th rib extending from anterior costal margin for 4 cm .The myotomy was carried out proximally to the level of the left inferior pulmonary vein and distally for approximately 1.5 cm on the anterolateral portion of the gastric cardia. Chest was closed with single drain chest X-ray was done in the immediate post-operative period, and then the patient was orally allowed. Mean operative time was 25 minutes Operative data obtained included duration of surgery, intraoperative complications, and postoperative complications including perforation, atelectasis, pneumonia, and length of hospital stay.
Results:
Mortality was nil. Morbidity was 4/207(1.93%) in the form of atelectasis. There were no leaks, Out of 207 patients 197 had no symptoms after a follow up of 12 months, while 8 patients had reflux and 7 patients had persistent dysphagia with mega oesophagus. They subsequently underwent oesophagectomy with stomach pull-up. Mean operative time was 25 min and mean length of hospital stay was 3 days
Conclusion:
Tran thoracic Hellers Myotomy,iiiia left anterior mini thoracotomy for lchalasia is a safe and effective pro5edure giving satisfactOry results with minimum operative time, hosbital stay and morbidity and with no mortality

Total gastrectomy with partial Oesophagectomy roux en y oesophagojejunosotomy for adenocarcinoma stomach and lower esophagus: Peshawar experience of 478 cases in 15 years

Amer Bilal

Objectives:
To audit the results of478 cases done for Carcinoma stomach over 15 years period.
Methods:
This observational descriptive study was conducted at Department of Cardiothoracic Surgery, Lady Reading Hospital, and Khyber Medical Centre Peshawar from April 2002 to April 2017. Computerized clinical data of 478 cases of roux en y for Carcinoma stomach was retrospectively analyzed. All patients had apart from routine investigations, Barium studies, Endoscopy and biopsy, CT Thorax/Upper abdomen with Oral and I/V Contrast and Abdominal ultrasound. Detailed examination of clinical record was made to determine the surgical outcome. Left thoracolaprotomy with total gastrectomy, partial oesophagectomy, roux en y oesophagojejunostomy at level of inferior pulmonary vein was done in all cases. Feeding jejunostomy was done simultaneously. Contrast study was done on 7th day, then allowed orally**.**
Results:
Males were 316 and females were 162 with a mean age of51.6 years. The age range was 17 80 years. Left thoracolaprotomy with Roux en-Y was done in all 478 cases. Morbidity was 27/478 (5.64%) which include anastomotic leaks 13, wound infection 09, and 05 strictures,
thirty-day mortality was 13/478(2.71%).
Conclusion:
478 cases in 15 years is a very high volume of gastro oesophageal cancer. Our morbidity of 5.64 % and mortality of 2.71 % shows that such major operations can be done safely via left thoracolaprotomy with roux en y oesophago jejunal anastomosis with feeding jejunostomy

To Compare The Out Come Of Surgical Resection For Bronchiectasis With And With Out Intercostal Muscle Flap-peshawar Experience Of 15 Years.

Amer Bilal

Objectives:
To compare the outcome of surgical resection for bronchiectasis with and without intercostal muscle flap.
Methods:
Computerized clinical data of 1810 patients surgically managed for bronchiectasis from April 2002 to April 2017 were respectively analyzed. Patients were registered through OPD. After necessary preoperative workup the patients were subjected to the surgical procedure. Detailed scrutiny of the record was carried out to determine the surgical outcome.
Results:
A total of 1810 patients of diagnosed cases of bronchiectasis underwent various surgical procedures. Male to female ratio was 3:1. Age range was 13-62 years with a mean age of 28.7 years. In initial 905 cases intercostal muscle flap were not used. We employed intercostal muscle flap in last 905 patients undergoing different procedures. Included left lower 245, left upper 206, right lower 197, and right upper lobectomies 153. Similarly, flaps were done in 104 pneumonectomies. We observed decreased rate of bronchopleural fistula in intercostal muscle flap group 19/905 (2.09%) then in non-intercostal muscle flap group 39/905(4.30%).
Conclusion:
There is a variety of flaps that can be used and tailored in lung resectional surgery. Mobilization of these flaps should be a part of training of a general thoracic surgeon. Use of flaps significantly reduces the dreadful incidence of bronchopleural fistula formation.

Thoracoplasty, an experience of 874 cases in 15 years period in a developing country

Amer Bilal

Objectives:
To assess that thoracoplasty is still a useful space obliterating collapse procedure.
Methodology:
This retrospective observational study was conducted in Thoracic surgery unit Lady Reading Hospital, Peshawar from April 2002 to April 2017. 874 patients who had thoracoplasty done as a collapse therapy in last 15 years were included in this study. The demographic data, operative findings, outcome of procedure in terms of postoperative complications, 30-day mortality and duration of ICU and hospital stay were recorded from the data base ofpatient's record of the ward.
Results:
Study included 539 male and 335 female patients, age ranges from 16 years to 70 years (median age 31 years). Out of 874 patients 783 presented with residual space due to post Lobectomy (53) 6.76%, post Pneumonectomy (27) 3.44% and post decortication (703) 89.78% which were treated by Thoracoplasty. Partial Thoracoplasty were performed in (541/783) 69.09% cases while complete Thoracoplasty in 242/783 (30.90%) cases. 94/874(10.75%) patients underwent Thoracoplasty for destroyed lung with poor PFT's as collapse therapy. In 32 cases it was total Thoracoplasty and in 62 cases apical partial thoracoplasty was done. Morbidity was 53(6.06%) including wound dehiscence in 9 patients , 30 wound infection, 6 patients with partial thoracoplasty were re-opened to do complete thoracoplasty and 8 patients had persisting sinus. Mortality was 21 (2.40%), 11 patients did not recover from anesthesia, and 10 of them had persistent sepsis, septicemia and cachexia. Mean ICU stay was 2 days and mean hospital stay was 5 days.
Conclusion:
Thoracoplasty is indicated in:
1. Infected space with no viable lung ± BPF
2. Infected post resectional space ± BPF
3. Collapse therapy for hemoptysis in patients not fit for lung resection.

Surgical Resection Of Pulmonary Hydatid-an Experience Of 819 Cases Over A Period Of 15 Years

Amer Bilal

Objectives:
To assess outcome of surgical resection of pulmonary Hydatid disease.
Methodology:
All patients admitted to cardiothoracic unit from 1st Jan 2002 to 30th Dec 2016 with pulmonary hydatid cysts were evaluated retrospectively as to age, sex, symptoms, diagnostic procedures, anatomic location of cysts, surgical procedures, complications, and outcomes
Results:
Total of 819 patients were operated for pulmonary hydatid. 526 were male and 293 female. Median age was 39.14 ± 16.8 years (range, 16-69 years). 507 of these were symptomatic, with hemoptysis in 274 and chest pain in 151 cases. 103 Patients presented with ruptured hydatids leading to Pneumothorax in 42 cases and Empyema in 62. 289 patients were asymptomatic, found to have Hydatid cyst incidentally. There were 447 Hydatid cysts on the right side while 372 on the left side. Hydatid cystectomy was done in 623 cases,

wedge resection 108, Lobectomy 59, Bilobectomy 21 and Pneumonectomy was done in 8 patients. Albendazole was prescribed to all patients postoperatively. Patients were followed up for a period of 6 months. 27 (3.29%) patients had postoperative complications including wound infection in 13 patients, bronchopleural fistula in 9 patients and recurrence in 5 patients. Mortality was 9 (1.09%) including respiratory failure 7 and septicemia in 02 patients.

Conclusion:

The principles involved in surgical resection of pulmonary Hydatid included; in toto resection, individual closure of bronchial communication, obliteration of cavity and assessment of drAidugl lobe, whethei viable or required resection and anthelmintiC medical regimen post operatively.

Pneumonectomy for Benign Lung Disease: Peshawar Experience of 1053 Cases

Amer Bilal

Objectives:

To assess the surgical outcome of Pneumonectomy for benign lung disease.

Material and Methods:

1053 patients who underwent pneumonectomy for benign lung diseases were retrospectively analyzed carefully for surgical outcome. Routine workup, sputum for AFB, CT scan chest with I/V contrast, pulmonary function test, echocardiography in elderly patients, exercise testing in patients with marginal pulmonary function test. All patients had conventional posterolateral thoracotomy. Stump closure was done in 2 layers with reinforcement of stump with intercostals muscle flap or pleural flap was done in all cases. Specimen sent for histopathology and follow up was done in all cases.

Results:

Out of 1053 cases 581(55.17%) were male and 472(44.82%) female, age range from 4 months to 74 years with a median age of 32.5 years. Clinical presentation was recurrent chest infection with copious amount of foul smelly sputum in 507 cases (48.14%), recurrent hemoptysis in 529 cases (73.47%) and chest pain in 98 cases (9. 30%).Tuberculosis was present in 720 cases (68.37%), bronchiectasis in 287 (27.25%) pulmonary Aspergilloma in 47 cases (4.46%)and hydatid lung disease in 13 (1.23%) cases. Left sided pneumonectomy was performed in 599 (56.88%) cases, right sided pneumonectomy in 454 (43.11%) cases. Mortality was 17 (1.63%) and morbidity was 57 (5.41%). Out of 57 cases Bronchopleural fistula was'seen in 19 cases, post pneumonectomy empyema 13 cases and wound infection in 25 cases.

Conclusion:

Pneumonectomy is the most effective treatment in symptomatic patients with destroyed lung. We recommend reinforcement of stump with intercostals muscle flap or pleural flap, meticulous closure, early pre- and post-operative triflow exercises for better outcome.

Outcome of Surgical Management of Pulmonary Aspergilloma — An experience of 720 cases in 15 years

Amer Bilal

Objectives:

To analyze the results of surgery in the management of Pulmonary Aspergilloma.

Methodology:

Computerized records of 720 cases of diagnosed Pulmonary Aspergilloma were retrospectively analyzed from May 2002 to April 2017. Patients of all ages, both sexes, medically fit and unilateral Pulmonary Aspergilloma were included in the study. Routine investigations, sputum culture, Computed Tomography, Pulmonary Function Tests and Bronchoscopy were performed in all cases. Specimen sent for histopathology in all cases.

Results:

Out of 720 patients, 414 patients were male and 306 were female, age ranges from 16 years to 70 years, median age was 35.6 years. The most common symptom was hemoptysis (92%) followed by persistent chest pain (30.7%) and recurrent cough with sputum (23%). The most common underlying lung disease was tuberculosis in 667 (92.63%), whereas lung abscess was present in 84 (11.66%) and lung cancer in 12(1.66%) case. The procedures performed were Lobectomy in 536 (74.44%) cases, Bilobectomy 87 (12.87%), wedge resection 64 (8.88%), Pneumonectomy 33 (4.58%). Postoperative complications occurred in 47 (6.52%) patients, of which 25 (3.47%) had prolonged air leak, 11 (1.52%) had significant postop bleeding out of which two required re-exploration, 7 (0.97%) patients developed Empyema and wound infection occurred in 4 (0.55%) patient. 30 days Mortality was 17 (2.36%) of which 14 patients died due to respiratory failure and three patient due to pulmonary embolism.

Conclusion:

We recommend early surgical resection of symptomatic and asymptomatic cases of Pulmonary Aspergilloma, both,:ivith the use of one 1png ventilation

Surgical intervention in treatment failure multidrug resistant tuberculosis-Experience of 162 cases

Amer Bilal

Objectives:
To assess the results of surgery for treatment failure Multidrug-Resistant Tuberculosis.
Methodology:
Retrospective analysis was done in 162 cases of multidrug-resistant tuber culosis in whom surgical cure was attempted after being declared treatment failure were carried out at Department of Thoracic surgery, Lady Reading Hospital, Peshawar, Pakistan between the years Jan 2002 to Dec 2016.
Results:
There were 96 male and 66 female patients in the age group of 14-54 years. All were sputum positive at the time of surgery. Majority of patients were treated with pulmonary resections (Pneumonectomy [n=40], bilobectomy [n=41] and lobectomy [n=66), while primary thoracoplasty with apcolysis was done in 15 patients. Post operatvey 2nd line anti tubercular chemotherapy was prescribed for 24 months.
There were four early deaths which incude drespiratory failure in three and myocardial infarction in one and two late death due to bronchopleural fistula with empyema. Postoperative complications were seen in fourteen cases; seven patients developed bronchopleural fistua with empyema, a pical space in three patients and wound infection in four patients. At a mean follow-up, of 6 months bacteriological cure (-ve Sputum microscopy & Culture) was achieved in 144(92.30%) patients while only 12(7.69%) patient sremained sputum +ve after the surgery.
Conclusion:
Judiciously performed adjuvant surgery can yield excellent long term bacteriological cure with acceptable mortality and morbidity in multidrug-resistant tuberculosis.

Space Obliteration for Failed Decortication an experience of 804 cases over a period of 15 years

Amer Bilal

Objectives:
To find out different factors which lead to failed Decortication and to evaluate their management and outcome.
Study Design:
Place and Duration: Methods:
This is a retrospective observational descriptive study conducted at Department of Cardiothoracic Surgery, Postgraduate Medical Institute, Lady Reading Hospital Peshawar from Dec 2002 to Dec 2016. Clinical record of 6939 patients who underwent decortication for chronic Empyema during the last 15 years was retrospectively analyzed and their results evaluated. Detailed scrutiny of the computerized clinical record was carried out to analyze the etiology of failure of the operation. The variables studied were persistent broncho-pleural fistula, poor postoperative efforts by the patients, wound infection, old chest drain site infection, technical failure and nutritional state of the patient.
Results:
Of the 6939 decortications performed over the period of 15 years, 5768 patients had a successful outcome in terms of lung expansion and improved pulmonary functions.
In 804 patients (501 males, 303 females with age range of 12 to 70 years) decortication failed to achieve the desired results. These patients had to undergo space obliteration procedures for persistent infected space. 783 cases(11.28 %) had thoracoplasty (complete or partial) while 21 patients (0.30%) had intra thoracic muscle transposition as flaps. Out of 21 cases 18 had lattissimus dorsi muscle flap 2 had serratus anterior and on had pectoralis major muscle flap repair. 2708 patients had history of tuberculosis and 4231 patients had non-tuberculous Empyema. All patients had chronic empyema with duration of more than 12 weeks before the first operation. All patients, were nutritionally cOmpromised. All patients had successful obliteration of, the persistent space. Mortality was 19(2.36%). 11 patients had respiratory failure and 08 patients had persistent sepsis, septicemia and cachexia. Morbidity was 24(2.98%). Wound infection was in twenty one patients and seroma formation in 03 cases.
Conclusion:
Space obliteration via Thoracoplasty or intra thoracic muscle transposition is a useful procedure following failed decortication in patients with nutritional impairment and poor respiratory efforts.

Retrosternal Goiter and Surgical Approaches-Peshawar experience of 207 Cases over 15 years

Amer Bilal

Objectives:
To observe the various clinical presentations of retrosternal goiter and evaluate their management and outcome.
Methodology:
Clinical record of 207 surgically treated patients over a period of 15 years (April 2002 — April 2017) was retrospectively analyzed. Detailed scrutiny of records was carried out to analyze the clinical presentation, Surgical procedures, histopathology of specimens and surgical outcome.
Results:
Cervical collar incision was used in all patients and in 187 cases was adequate. In one patient it had to be combined with a full median sternotomy while 5 patients had a partial sternal split along with the cervical collar incision. In 14 cases anterior mediastinotomy was done to push the goiter from below to aid delivery through cervical collar incision. The mean operative time was 68 minutes. Over all

morbidity was 17(8.21%) Post-operatively 07 patients required ventilatory support, 5 patients had hoarseness while 2 each had transient hypocalcemia and wound hematoma. There were 2 (0.966%) mortalities, due to tracheomalacia despite tracheostomy and ventilatory support; one of these was a redo case. 123/207(59.42%) cases were multinodular goiter, follicular adenoma in 46/207(22.22%); and papillary carcinoma in 28/207(13.52%) cases.

Conclusion:

Retrosternal goiters can be delivered through the cervicalapproach, but where delivery is difficult it can be aided by a mediastinotomy thereby avoiding splitting the sternum.

Primary Repair of Esophageal Perforation: An experience of 81 cases

Amer Bilal

Objectives:

To assess the outcome of primary repair of Esophageal perforation.

Methods:

The study was conducted at the Cardiothoracic Surgery Unit, Post Graduate Medical Institute, Lady Reading Hospital Peshawar, from Jan 2002 to December 2016. A total of 81 patients who underwent primary repair of esophageal perforation from Jan 2002 to December 2016 were retrospectively analyzed. Patients of all ages, both sexes and benign thoracic esophageal perforation were included. Malignant esophageal perforations, benign cervical and abdominal esophageal perforation cases were excluded from the study. Patients were admitted through emergency department as a referred case after 12 hours of incidence. Immediate management was resuscitation and chest intubation, and monitoring in ICU. Contrast study was done after stabilization usually after one week. Procedure includes separate closure of mucosal and muscle layer by continuous suturing after refreshing the margins and buttressing the anastomotic area with intercostals muscle flap, followed by feeding jejunostomy. Feeding through Jejunostomy tube started on second postoperative day, while contrast study was done on 7th post-operative day. Three months follow-up was done in all cases. Variables measured were postoperative leakage, stricture formation, morbidity and mortality.

Results:

Out of 81 patients, male to female ratio was 2:1, age ranges from 12 to 65 years with a median age of 38 years. Perforation was caused by iatrogenic instrumentation in 53(65.43%) patients, trauma in 12(14.81%) and ingested foreign bodies in 16(19.75%). In all patients initial chest x ray was done, location of perforation was confirmed by gastrograffin study involving upper third thoracic esophagus in 21 cases , middle thirIA·27 and lower third in 33 cases. 9(11.11%) patients developed postoperative 1Faks. 5 patients died due to respiratory comjlications and 1 patient died due to myocardial Infarction. At 3 months follow-up, all 75 surviving patients were able to eat a normal diet.

Conclusion: Primary repair and tissue reinforcement of benign oesophageal perforation is safe in early cases and obviates the need fora second operation.

Thirteen years experience of the management of corrosive intake at Nishtar Hospital Multan

Iftikhar Hussain Khan

Objectives:

To review our experience of management of corrosive injury to upper gastrointestinal tract and to develop management protocols for this difficult clinical problem.

Methods:

This retrospective observational study was conducted in thoracic surgery unit Nishtar Hospital Multan from October 2003-September 2016.All patient having history of corrosive ingestion whether acute or chronic were included in study. Demographic, clinical, radiological, endoscopic data, pre and per-operative findings and operative procedure(s) performed were recorded. Based on this data a protocol is developed so that the best management option can be chosen in a particularcorrosive injury complex.

Results:

A total of 3653 patients underwent management for corrosive ingestion injury. 2191 were female and 1462 were male. Age ranged from 2-55 years with a mean age of24.6 years. Dysphagia was present in all the patients. In addition to dysphagia, additional presentations include hematemesis, vomiting, oral ulceration, facial and chest wall burns, hoarseness, dyspnea and stridor. Cause of injury in 97% of the patients was a suicidal attempt where as in 3% of the patients (including all the children) had accidental ingestion of corrosive. Procedures performed were Oesophagoscopy and dilatation in 2529 patients, Dysjunction (drainage gastrostomy and feeding duodenostomy after separating stomach from duodenum) in 258 patients, Jaboulay's Pyloroplasty in 519 patients, Colonic interposition in 153 patients, Roux-En-Y Esophagojejunostomy in 94 patients, feeding jejunostomy in 87 patients, Near total Gastrectomy and Roux-En-Y Gastrojejunostomy in 44 and Bifid Stomach Tube in 56 patients. Our protocol of management of corrosive intake is given below in tabulated form which we developed as a learning consequence of our experience.

Conclusion:

Corrosive intake can present with a wide variety and severity of combination of laryngeal, pharyngeal,

esophageal, gastric and duodenal injuries. This calls for carefully designing the management plan in each individual, considering his/her particular needs.

A comparison of Laparoscopic Modified Heller's Cardiomyotomy with Trans Abdominal Heller's Cardiomyotomy and Dor's Patch

Farhan Ahmed Majeed

Objectives:
The study was carried out to ascertain the outcome by comparison of Laparoscopic modified Heller's myotomy for Achalasia Cardia with Trans Abdominal Heller's Cardiomyotomy and Dor's Patch, and to determine the morbidity associated with both procedures.
Methods:
This is a retrospective descriptive study conducted in CMH Rawalpindi and CM H Lahore over a period of 5 years**.** Total numbers of cases operated for achalasia cardia were 40. Laparoscopic Modified Heller myotomy was done in 18 patients. 6 ports were used for laparoscopic approach. 5 cm over esophagus and 1.5 cm over stomach dissection was done to expose the mucosa for 180 degrees. Inclusion criterion was patients with Achalasia Cardia with no sigmoid esophagus. Trans-abdominal Heller's cardiomyotomy with Dor patch were done in 22 patients. All patients were diagnosed for Achalasia Cardia after detailed history, upper GI endoscopy and barium studies. Relief of dysphagia and occurrence of reflux symptoms were evaluated clinically after both procedures.
Results:
Age range was between 22 years to 62 years with mean age of 45 years in laparoscopic group, while mean age was 21 years (range9-51 years) in the open group. The most frequent symptom was dysphagia (80%), followed by regurgitation of ingested food (60%), weight loss (40%) and chest pain (20%) for both groups. Mean operating time was fifty minutes in laparoscopic group and 62 minutes in open group. Mean hospital stay was 3.5 days in open group and 2.8 days in laparoscopic group. There was no peri operative mortality in both groups. We applied Dor patch in 3 patients, while 2 patients had nivcosal tear, diagnosed per operatively and repaired in the laparoscopic group. TWere was no conversion to open procedure! In the open group, intcapperafive nfucosal ictjury occurred in one patient, which was repaired immediately. There was marked improvement in symptoms in second week post operatively in both groups.
Conclusion:
Laparoscopic Modified Heller's Cardiomytomy is a safe and effective procedure for achalasia cardia when compared to open transabdominal approach, with shorter hospital stay and acceptable results.

Single Institutional Experience of Interrupted Aortic Arch Repair

Asad Khan

Background:
Interrupted aortic arch (IAA) is a rare congenital heart disease and is often associated with other cardiovascular anomalies, including ventricular septal defect (VSD), truncus arteriosus, aorto-pulmonary window and various types of single ventricle. One staged repair of interrupted aortic arch (IAA) was first described by Barratt-Boyes et al. In the procedure he described in 1972, arch continuity was established using a synthetic conduit. One-stage repair incorporating direct arch anastomosis was first described by Trusler in 1975. As outcomes of neonatal cardiac surgery have been improved, primary complete repair of IAA and concomitant congenital heart disease in neonatal period has been gradually applied in many institutions.
Methods:
Retrospective chart review and database of patients operated for interrupted aortic arch from 2007 to 2016 has been reviewed.
Results:
22 patients underwent interrupted aortic arch repair between 2007 to 2016. Mean Age at the one stage repair was 5 days. Mean age at the second stage repair was 8 months. 15 patients (68.1%) were female and 7 patients (31.8%) were male. Di George syndrome was associated in 9 patients (40.9%). Type B (81.9%) was the most common. Mean weight at one stage repair was 3.15 kg at one stage repair. A variety of concomitant procedures were performed at same time including VSD repair in 19 patients (86.3%), AP window repair in one patient (4.5%), Left pulmonary artery re-implantation in one patient (4.5%) and truncus arteriosus repair in one patient (4.5%). Mean total bypass time and cross clamp time was 174 minutes and 89 minutes respectively. The mean circulatory arrest time was 28 minutes. Postoperative mean ventilatory support was 6 days. The overall mortality was one patient (4.5%).
Conclusion:
Surgical outcomes for Interrupted aortic arch has significantly improved in last decade. One stage repair with concomitant procedures can be undertaken with good results.

Tetralogy of Fallot: New Paradigm

Syed Aitizaz Uddin

Objectives:
To review the present practices and outcome of intervention in children with Tetralogy of Fallot in the

present era. The data of Surgical and Catheter based interventions carried out in Madinah Cardiac Center in past 4 years is presented.

Methods:

Natural History of Tetralogy of Fallot shows very high early mortality in infants and young children. In countries with developed pediatric cardiology and cardiac surgery services, the overwhelming majority of these children are corrected or palliated in infancy. However, this approach adds a set of clinical issues which need lifelong follow up and further interventions. The timing of further intervention and the procedures are debatable. A review of the literature to ascertain the change in management of this disease over the past 5 decades is also included.

Results:

All of the duct dependent infants with Tetralogy of Fallot in our unit were palliated with Ductal stenting or RVOT stenting in our unit. Majority of the patients are corrected in early infancy surgically. Overall surgical survival is 95 %.Pulmonary valve implantation for late pulmonary regurgitation was carried out by trans femoral catheterization in 70 % of the cases.

Conclusion:

Tetralogy of Fallot in present era carries excellent survival to adult hood in present era. Surgical techniques, based interventions, medical and ICU management have all come ,a3ong vs/ay fdr the past 5 to 6 decades. However a new set of "lesions" are persisting in the treated population which require continued efforts to stream line the long term management.

Right Ventricular Out Flow Tract Reconstruction using a hand-sewn tri-leaflet valve Conduit

Salman Shah

Objectives:

Prohibitive cost and subsequent unavailability of valved homograft or CONTEGRA conduits lead us to construct our own hand-sewn conduits for right ventricular outflow tract (RVOT) reconstruction. We have implanted hand-sewn conduits made of a bovine pericardial tube with 1 mm PTFE (PRECLUDE/ GORE TEX) tri-leaflet cusps. This report assesses the short-term outcome of these prostheses.

Methods:

From 2012 to 2016, self-sewn tri-leaflet conduits were implanted in 46 patients. During surgery on a back-table a piece of bovine pericardium is taken and cut to size as per a pre-calculated nomogram. A l.0 mm PTFE membrane is similarly cut and shaped to pre-determined size and is then sewn onto the bovine pericardium as three semilunar leaflet cusps. This is then sewn into the shape of a tube, thus making a valved conduit.

Results:

The mean age at operation was 9.6 years (range: 0.1 to 38 years). The most common procedure performed was a Rastelli operation in 28 patients followed by Ross procedure in 10 patients. 4 patients had previously placed conduits replaced and 2 patients had primary Truncus arteriosus repair, while 2 had primary repair of Tetralogy of Fallot (TOF). The most common size conduits were 20mm (24 patients) and 22mm (19 patients). Follow-up was complete. There were 2 in-hospital deaths. Both were unrelated to the conduit. None of the 46 PTFE tri-leaflet conduits developed significant obstruction. Mean gradient across the valve conduit was 19 mmHg (10-38mmHg). No patient required reoperation for graft failure till last follow up There was one late death in a patient who developed infective endocarditis in the implanted conduit. Overall functional status of patients was excellent at last follow-up.

Conclusion:

Short term results show that hand-sewn tri-leaflet conduits have provided a reliable conduit for RVOT reconstruction. Longer follow-up is needed to determine durability and longevity.

Clinical Features And Associations Double Chambered Right Ventricle

Salman Shah

Objectives:

DCRV is a rare congenital cardiac anomaly characterized by hypertrophic mid cavity right ventricular (RV) bundles causing the RV to be divided into high and low-pressure chambers. We evaluated the anatomical features, associations and surgical results of patients undergoing surgery for Double Chambered Right Ventricle (DCRV).

Methods:

All patients presenting with DCRV between 2006 and 2014 were included in the series. Retrospective review of the demographics, chart, echo reports and surgical record was done. The information was entered into a structured database. The results were evaluated using SPSS software Version 16.

Results:

Between 2006 and 2014, we performed surgical repair of DCRV in 52 patients. The patient age ranged from 6 months to 31 years, with a median of 5 years. 15% patients presented in infancy. Overwhelming majority of patients (92%) had an associated VSD. Aortic valve right coronary cusp prolapse (RCCP) with varying degrees of aortic regurgitation was present in 15% patients. All patients had a RV mid-cavity and infundibular muscle resection via the tricuspid valve. Two patients had an infundibular patch placed. There was one hospital death due to an intra-operative global neurologic catastrophe. Median follow-up subsequent to surgery was 2 years, with a range from 0.25 to 7

years. There was no late death. No patient needed aortic valve replacement and one patient developed recurrent mid cavity obstruction later requiring early reoperation.

Conclusion:

DCRV was most commonly associated with a VSD that was of varying size. In contrast to previously published literature there is a high incidence of right coronary cusp prolapsed with patients who have DCRV. Previously described association with left ventricular outflow tract obstruction was not seen in our series. Association between VSD with RCCP and DCRV in South Asian population is a finding that has not been previously reported. Short term surgical results of repair are excellent.

Management of Deep sternal Wound Infection in Pediatric Cardiac Surgery with Vacuum Assisted Closure

Salman Shah

Objectives:

Deep sternal wound infection (mediastinitis) is rare but dreadful complication in pediatric cardiac surgical population. The use of vacuum assisted closure (VAC) in the management of mediastinits in adult cardiac surgery is well established. We studied the use of VAC in pediatric cardiac surgical population in our department.

Methods:

From June 2011 to June 2017 deep sternal wound infection developed in 12 patients. They were managed with wound debridement with application of Wound Vacuum (VAC) dressing system and secondary wound closure.

Results:

Complete wound healing and successful wound closure was achieved in **11** patients. Discontinuation of VAC and wound closure was possible after mean of 10 days.

Conclusion: We conclude that the use of VAC is very effective in the management of Deep Sternal wound infections with mediastinitis in pediatric cardiac surgical population.

Antegrade Oxygenated Perfusion in MPA Protect Myocardial Functions and Impact Outcome in ALCAPA

Asim Khan

Background:

Anomalous origin of the left main coronary artery from the main pulmonary artery (ALCAPA) is a rare congenital abnormality, affects 1 in 300,000 live births and accounts for 0.25%-0.5% of all CHD. If left untreated, up to 90% of pediatric patients with this syndrome die within the 1st year of life. Survival to adulthood is further rare. Symptoms are due to "coronary steal" phenomenon, in which a left-to-right shunt from RCA to LCA leads to abnormal left ventricular perfusion, sub-endocardial ischemia leading to infarction and LV dysfunction. Diagnosis is an indication of SURGERY.

Methods:

Retrospective review of patients with echo diagnosis of ALCAPA, from December 2005 to August 2016. A total of 12 patients. We made some recent changes in perfusion strategy from 2012 and found change in outcomes of this treatment strategy in this cohort of patients. The mean age was 4 months (2-11 months)and mean weight w a s 4.18 kg (2.6-6 kg). The mean Pre-op EF was 20% (15-25%), and Pre-op MR was mild in 7 and moderate in 5. The surgery was LCA translocation in 11 and Takeuchi in 1 pt.

In pre 2010 era there was high mortality, due to low cardiac output and arrhythmias. We then did change in perfusion strategy, by simultaneous cannulating aorta and MPA and perfusing MPA along with aorta after snaring branch PA for 15 min with LV vent in LA. We let the heart beat empty with LCA being perfused, to protect the myocardium.

Conclusion:

Early experience indicates that in a developing country like Pakistan, where an ECMO program does not exist, surgery for ALCAPA was very high risk with poor outcome. Modification in perfusion strategy with myocardial protection has definitely improved outcome. Though the exact mechanism remains unclear, further prospective studies are required to prove its efficacy.

Management of complex aortic stenosis, the role of Ross procedure: Local experience.

Asim Khan

Background:

In the management of complex aortic stenosis where repair is not possible, one has to replace valve. The quest for ideal valve continues. It should be durable, good longevity, no thrombogenicity, no need for supplemental anticoagulation, no inherent gradient, easily implanted, readily available and should have growth potential.

Methods:

Retrospective data of 14 patients, who underwent Ross procedure from Jan 2012 to Dec 2016 was analyzed. The mean age was 8.3 years (3-11 years), and the mean weight was 28 Kgs (12-41 Kgs). There were 06 males and 08 females.10 patients had congenital AS with SAS and 04 patients had severe AR, with valve not repairable, and small annulus. Patients with AS had previous Balloon aortic valvuloplasty 8 out of 10 patients had bicuspid AV. In 04 patients Contegra was

used as RV to PA Conduits and Self constructed bovine pericardial tube with PTFE valve was used in 10 pts. In post op echo there was no significant AS or RVOTO. In 2/14 patients there was Mild AR and in 3/14 patients there was Mild PR. One patient develops CHB requiring PPM. There was one mortality related to pulmonary sepsis. In Short term follow up Neo AR worsen in one patient over one year and had to go for re-operation and AV replacement. One patient develop SBE after one year and died. There was No RV— PA conduit related issue.

Conclusion:

Though Ross operation provides near ideal valve replacement. The chief uncertainty regarding the use of the Ross operation remains the need for re- operation due to Conduit regurgitation or obstruction and dilatation of the wall of the pulmonary autograft and the development of progressive valvular regurgitation as a result of continued exposure to systemic pressure. In our experience for RV to PA conduits self-constructed bovine pericardium conduit with **PTFE** leaflets is a very good and cheap option. Long term patency and complications results are awaited though short term results are encouraging.

Proposing Guidelines And Evaluation Of Two Stage Arterial Switch As A Treatment Strategy In The Management Of Delayed Presentation Of Transposition Of The Great Arteries With A Regressed Left Ventricle.

Asim Khan

Objectives:

Management of transposition of the great arteries with intact ventricular septum (TGA/IVS) is currently an arterial switch operation (ASO) performed in the first 2 weeks of life. Two stage ASO is one form of treatment in infants with TGA presenting late. But the guideline on how to train LV is not clear in literature.

Methods:

From December 2009 to January 2016 total of 33 patients with TGAIVS presented late and were selected for a two stage ASO. Serial echocardiography was used to assess the increased thickness of LV posterior wall. A stage II ASO was done a few weeks later. Retrospective review of patient charts was done. Data was formulated into a structured database and statistical analyses were performed with the statistical package SPSS for Windows.

Results:

A total of 33 patients underwent Stage I while 10 patients underwent isolated Pulmonary artery banding (PAB), 17 patients underwent PAB and The Blalock-Taussig shunt (BTS) and in 6 patients PDA stenting was done. Stage I had an in hospital mortality of 22%, while the interval mortality between both stages was 14%. Initial increased mortality was probably due to acute volume loading of the RV due to unrestrictive atrial communication, hence we modify to do PA band only in the presence of large ASD, and to shunt only selected patients. The mean interval between the two stages was 3 ± 1 weeks.16 patients have undergone a successful Stage II ASO. Stage II mortality was zero. All patients had remarkably rapid recoveries and short hospital (6± 2 days) stay.

Conclusion:

Early experience indicates that in a developing country like Pakistan with a rapid two stage arterial switch is an acceptable treatment option. Patients who survived Stage I and the interval period Waive excellent results with Stage II. We prippose changes in management strategy to improve outcome. We recommend to pressure load only by t'AB and if atrial communication is small then BAS if possible, and then PAB, and in older patients, PDA stent to volume load. Avoid BTS in large ASD. Prospective studies are required to strengthen our proposition.

Bidirectional Glenn Shunt as an Adjunct to Surgical Repair of Tetralogy of Fallot: Relevance of the Fluid Pressure Drop-Flow Relationship

Kamal Saleem

Objectives:

Surgical repair of Tetralogy of Fallot (TOF) using trans-annular patch (TAP) is associated with progressive pulmonary regurgitation and its negative consequences. We hypothesized that volume unloading of Right Ventricle (RV) by incorporating Bidirectional Glenn (BDG) during Total correction would reduce RV stroke work and gradient across the residual obstruction, thus limiting the requirement ofTAP. We conducted this study to determine immediate results and midterm follow up in patients using this strategy.

Methods:

After trans-atrial / trans-pulmonary repair pulmonary annulus is assessed using Hagar dilators. If adequate size has been achieved operation is completed in routine manner. However, if adequate size cannot be achieved we prefer not to perform TAP and rather add in-parallel BDG during rewarming. We carried out analysis of medical records of all patients and prospectively studied them with detailed history & physical examination; 6 minutes' walk test, 12 lead ECG, oxygen saturation, echo and in some cases cardiac catheterization &Angiography.

Results:

A total of 33 cases operated at our center from January 2011 to July 2017 were included. Underlying diagnoses was TOF. Mean age was 4.6±7.29 years (11 months —31 years). There were 19 males and 14 females. 03 patients died and out of these in 2 patients a BDG was added as a salvage option after initial TAP,

significant hemodynamic instability and failure to wean from cardio-pulmonary bypass and 01 patient died of severe sepsis. Follow-up was complete in 26 patients with a mean of 15.08 months (3months-75months). All the patients were in NYHA Class I, with no dyspnea, rhythm abnormality or fatigue after 06 minute walk test. Jugular venous pressures were not raised on clinical examination and mean room 02 saturations was 94%. All patients were in Sinus Rhythm with mean QRS duration of 0.14 ± 0.2 seconds and no abnormality on X-ray chest. On Echocardiography the mean gradient across RVOT was 25.5± IlmmHg. Pulmonary regurgitation was assessed to be trivial in 18 patients, mild in 4 and moderate in 4 patients. All BDGs were patent with biphasic flow pattern (PA to SVC during systole and SVC to PA during diastole)

Conclusion:

Since pressure gradient across any fixed obstruction is a function of flow across the obstruction, we believe BDG in this scenario reduces the blood flow (equivalent to superior vena cava blood flow) across the residual obstruction and hence lowers trans pulmonary peak systolic gradient with preservation of RV functions and pulmonary valve competence with no intra-cardiac shunt. Despite our excellent short-term results, longer follow-up evaluation and additional information may be important for predicting the clinical course of patients who have undergone cardiac repair involving an in-parallel BDG.

Should vasopressin be used as a first line systemic vasoconstrictor in pulmonary hypertension patient: An in-vitro study

Azar Hussain

Objectives:

Pulmonary hypertension is an important prognostic factor in cardiac surgery and is associated with increased morbidity and mortality. However, limited data is available on the efficacy and potency of clinically used systemic vasopressors on the human pulmonary vasculature. The aim of this study was to use human pulmonary artery rings to characterize the pharmacological effects of clinically used vasopressors on the human pulmonary vasculature.

Methods:

Pulmonary arteries dissected from disease free areas of lung resection and 57 PA rings of internal diameter 2-4 mm and 2 mm long were prepared. Integrity of endothelium was confirmed with luM Ach and KCI was used to check the contractility of PA rings. Multiwire myograph system was used to mount the PA rings under physiological conditions in modified Krebs solution. A basal tension of 1.61gm was applied and the rings were left to equilibrate for 60 min. After equilibration concentration response curves were constructed to KCl, Noradrenaline, Adrenaline, Vasopressin, Endothelin-1 and Prostaglandin Fla by cumulative addition to the myograph chambers.

Results:

The Adrenaline, Noradrenaline, Endothelin-1, PGF2a and KC1 caused dose-dependent vasoconstriction in the pulmonary artery (pEC50 246nM, 150nM, 1.46nM, 6.35uM and 17.24mM respectively) while vasopressin had no significant effect. The order of efficacy was KCl = PGF2a > Ad > NA > ET-1 and the order of potency was ET-1 >Ad = NA> PGF2a > KCI.

Conclusion:

This study demonstrated the differential effect of commonly used agonists on pulmonary vascular reactivity with PGF2a and KC1 equally causing maximal constriction while Endotheli$_i$n 1 had less effect with Vasopressin having no effect. These effects may need to be taken into account in the clinical setting as they might result in development of pulmonary hypertension. The vasopressin has no effect on PA so can safely be used in pulmonary hypertensive patient while adrenaline and noradrenaline need to be cautiously.

Total Correction of Tetralogy Of Fallot: Do We Still Need Transannular Patch

Dr. Iqbal Hussain Pathan

Objectives:

While planning the most appropriate surgery for TOF, the postoperative physiology should always be taken into consideration. The balance between pulmonary stenosis (PS) and pulmonary insufficiency (PI) is very important for preservation of ventricular function. Our study is a population-based evaluation of the early results after surgical repair for tetralogy of Fallot (TOF) to find out the trends and outcome at NICVD.

Methods:

All the patients operated for total correction of Tetralogy Of Fallot (TOF) in the NICVD since the 1st of Jan till 31 of December 2016 were identified via database of pediatric cardiac surgery. Patients operated by single surgeon with availability of desired postoperative record were included in study. Total of 74 patients with male 45 (61%) and female 29 (39%) with age range of 2 to 13 years, average 6.3years and BSA from 0.4 TO 1.2 were included in final cohort of patients.

Results:

A total of 74 patients underwent surgical repair of TOF were included in study . Each patient was followed for three month post repair and echocardiography was included in final assessment of right ventricular outflow tract obstruction (RVOTO) . Repair via ventriculotomy with TAP was done in seven patients (n = 7,9%). Repair without ventriculotomy was performed in 67 patients (n= 67,91%). Analysis

showed statistically significant association between TAP and severity of pulmonary regurgitation, delayed extubation and over all ICU stay compared to repair without ventriculotomy. Follow up echo showed residual RVOTO in patients operated without ventriculotomy is mild (n=29,43%), moderate (n= 36 56%)and severe (n= 2, 3%). However our findings suggestive of moderate RVOTO in all patients operated with TAP

Conclusion:

The short-term prognosis of surgically corrected TOF patients is good and has improved with each decade since the beginning of TOF surgery. Repair of Tetralogy Of Fallot predicts a lower mortality rate; however, residual hemodynamic impairment remained a concern. Longer freedom from hemodynamic impairment requires changing surgical techniques from large ventriculotomy to use of homograft has been reported.

Spectrum of heart defects in children presenting for pediatric Cardiac surgery

Objectives:

To determine gender distribution and relative frequency of cardiac defects in children who underwent palliative or corrective cardiac surgery at pediatric cardiac surgery department at NICVD Karachi, Pakistan.

Methods:

This retrospective cross sectional descriptive study was conducted in Department of Pediatric Cardiac Surgery at National Institute of Cardiovascular Diseases (NICVD), Karachi, Pakistan from October 2013 till September 2015. One thousand and four patients up to age group of 14 years admitted for Cardiac Surgery at Pediatric Cardiac Surgery at National Institute of Cardiovascular Diseases (NICVD) were included.

Results:

Out of 1004 patients, there were 683 males (68%) and 321 females (32%). Patients presented with cyanotic heart disease were 578(57.5%) while acynotic patients were 426 (42.4%) . Tetralogy of Fallot (TOF) followed by Ventricular Septal Defect (VSD) were the commonest congenital heart lesions, 42.8% and 20% respectively.

Conclusion:

Majority of patients with pediatric heart disease had cyanotic CHD with the commonest lesion being Tetralogy Of Fallot (TOF). Most of the patients were more than one year(70%) with significant difference in sex distribution with male predominance.

Dr. Iqbal Hussain Pathan Pediatric Cardiac Surgeon

Great Artery Ratio: Does it really matter in total correction of Tetralogy Of Fallot

Iqbal Hussain Pathan

Objectives:

To investigate the significance of Great artery ratio, for decision for right ventricular outflow tract management in patients with Tetralogy Of Fallot.

Methods:

A retrospective review of surgical record of patients operated for total correction of Tetralogy Of Fallot from January 2015 to December 2015 in department of pediatric cardiac surgery NICVD was done. Patients whose aortic annuals was documented in record were included in study. A relation of great artery ratio with cut off value of 0.55 with Trans Annular Patch Enlargement Repair and patient outcome was evaluated . Data was analysis on SPSS 21 and presented using frequency / percentage and analysis was done for any association with outcome.

Results:

Of total 66 patients male were 44 (66.7%) and female were 22(33.3%). Great artery ratio of 0.55 or less was calculated in 26(39.4%) patients. While trans annular patch enlargement repair of Tetralogy Of Fallot (TOF) was observed in 10(15%) patients with 6 patients in GA Ratio 0.55 or less required trans annular patch enlargement compare to 4 patients in GA Ratio of >0.55(p=.14). However, a significant association of mortality was observed with, 4 (15.4%) patients expired in group with low GA Ratio.

Conclusion:

In our patient population only 10(15%) patients required trans annular patch enlargement with insignificant association with low GA Ratio. However a significant association of decrease survival was observed in low ratio group.

Grown-Up Congenital Heart (GUCH) surgery at PIC, Lahore, Pakistan

Faiz Rasool

Objectives:

Highlight the versatility and outcomes grown up congenital cardiac surgery.

Methods:

Retrospective study of 200 congenital cardiac surgery patients. Epidemiology and outcomes were studied.

Results:

Out Of 200 patients 56 % were having TOF. Others included VSD ,TAPVC, COA, PDA, aortic valve repairs, mitral valve repairs and replacement etc. Our mortality was 3 percent. Morbidity was 8%.

Conclusion:

We are dealing with variety of congenital cardiac diseases at PIC with acceptable mortality and morbidity. The disease burden in grown up congenital cardiac surgery is very different from that of modern world.

Optimum time for antibiotic prophylaxis prior to surgical incision in open heart surgery in pediatric population

Muneer Amanullah

Objectives:
To determine whether:
1. The time at which antibiotic prophylaxis is given pre-operatively has a correlation with the incidence of SSIs in pediatric patients undergoing open heart surgeries.
2. The NSIPP guidelines regarding administration of antibiotic prophylaxis are being implemented at the AKUH.
Methods:
We conducted a retrospective cohort study with 258 patients undergoing open heart surgeries in 2016. We excluded cases involving the adult age group, reopening of surgical sites and patients with low cardiac output syndrome. Additionally, we took note of possible confounders such as age, birth weight, BMI and comorbidities such as congenital abnormalities, diabetes, hypertension and lung disease. Any significant pre-, peri- and postoperative findings were also recorded.
Results:
We are yet to analyze the data that we have collected. The incidence of SSIs will be calculated and divided into time intervals in order to determine at which time interval, between administration of pre-operative antibiotic prophylaxis and time of incision, the incidence of SSIs was the greatest in our study population.
Conclusion: Pending

Endocardial Cushion Defects in Down Syndrome and Non-Down Syndrome: Outcomes from a teaching University Hospital

Saleha Aziz

Objectives:
To compare pre-operative, intra-operative and post-operative parameters in Down Syndrome (DS) and non-Down syndrome (non-DS) children with endocardial cushion defects (ECD).
Methods:
All ECD repair surgeries, (CAVSD, PAVSD, Ostium Primum ASD and VSD with inlet extension) at the Aga Khan University Hospital, Karachi, Pakistan were retrospectively reviewed from January 2007 to December 2016. Children with syndromes other than DS were excluded. Demographic and pre and peri-operative variables: bypass time, aortic cross-clamp time, minimum temperature, and postoperative data: ventilation time, inotropes administered in the first hour, CICU and hospital stay were recorded. Post-surgical morbidities: pericardial effusion, pleural effusion, pneumothorax, respiratory tract infections, and arrhythmias were noted.
Results:
Amongst 31 cases of ECD, DS were 10. Median (Min-Max) age in the DS category was 1.0 (0.4-10) years, whereas in the non-DS category was 5.0 (0.4-16) years (p=0.096). Mean BSA in DS was 0.41±0.18m2 and in non-DS was 0.67±0.44m2 (p=0.082). Median (Min-Max) ventilation hours after surgery in DS were 96.5 (4-208) while in non-DS were 4 (1-168) (p=0.001). All DS patients were placed on vent vs. 71.4% of non-DS (p=0.069). Mortality rates in DS vs. non-DS were 50% vs. 9.5% (p=0.022) respectively. There was no significant difference in bypass time, aortic cross-clamp time, minimum intra-operative temperature, and total hospital stay.
Conclusion:
According to this study, ventilation hours and mortality were significantly greater in DS case's and all DS cases had to be placed on vent compared to non-DS. It was of marginal significance that DS cases presented to the clinic at a younger age than non-DS.

Series Of Direct Closure Of Type-1 Aortopulmonary Window With Good Short And Mid Term Results: A safe And Cost Effective Technique

Jamal Abdul Nasir; Faiz Rasool

Objectives:
To Analyze the surgical outcome of direct closure of type-1 Aortopulmonary window by avoiding cardiopulmonary bypass.
Methods:
From January 2010 to December 2016, twenty infants with Aortopulmonary window were operated in the department of Pediatric cardiac surgery, Institute of children health Lahore, Pakistan. Out of twenty , fifteen were type 1 APW, in whom Operative technique included direct closure of the defect without using CPB. These fifteen patients were further analyzed for operative technique and clinical outcome.
Results:
Age at operation ranged from 1.5 to 10 months (median 5 months) . Weight at operation ranged from 3 to 6 kg (median 5kg) . Follow up ranged from 2 months to 48 months. There were no early or late deaths postoperatively. There were no residual defects or distortion of RPA in our series. ICU stay ranged from 1 to 2 days postoperatively.
Conclusion:
Direct closure of type-1 APW is safe and has excellent short and long term results in terms of cost and health of patient.

Re-do sternotomy: Is it something really to be afraid of ?

Dr. Intisar-ul-Haq

Objectives:
Re-do sternotomy remains a challenge and is associated with significant morbidity/ mortality especially if contemplated without necessary workup and special precautions. The procedure is becoming fairly common in congenital as well as adult cardiac surgery. Our budding cardiac surgeons need to be familiar with these simple maneuvers and measures in order to avoid a catastrophe.
Methods:
A retrospective review of prospectively collected data from a single institution. The patients mainly comprised pediatric population who underwent pulmonary valve replacement post fallots correction, bidirectional glens, Fallot's repair post BT shunt from central approach, Fontan, valvular repair post Fontan and post AVSD repair from 1st July 2013 to 30th June 2017. Patient clinical notes, charts were evaluated for demographics, operative details and postoperative outcomes. Elective peripheral cannulation and CPB was established in high risk patients. Per operative complications were inadvertent tear of ventricular or atrial cavity, some of which did require emergency CPB establishment through peripheral cannulation. Operative mortality was defined as death within 30-days of surgery. Morbidity was considered as bleeding requiring re-exploration, prolonged **ICU** stay > 3 days, excessive pleural drainage (> 7 days).
Results:
We identified 233 patients who underwent sternal re-entry over a period of four years. The age of the patients was 7 months to 38 years and the majority of the patients were male. The patient's commonest surgical procedure was predominantly BDG in 172 (73%) with the remaining patients having undergone Fontan 38 (16%), and other procedures 23 (09%) including pulmonic valve replacement and valve repairs. Elective peripheral cannulation was done in 46 (20%) patients and in 29 (12%) patients required establishing CPB in emergency due to catastrophic blood loss during re-entry. During resternotomy 16 % patients had complication in form of RV/ ıqiA tear. The mortality rate was 12 % for the entire group with 13% mortality for Fontan, 9% for valvular repair/ replacement and 141% for Fallot's repair. The rate of rd-exploration for bleeding was 19 % for the entire grodp, prolonged ICU stay was seen in 26 % and 31 % patients had prolonged pleural drainage.
Conclusion:
Repeat sternotomy has inherent increased risk for patients undergoing congenital/ adult cardiac surgery. The data from our study shows that the patients who underwent redo-sternotomy had safe outcome with reasonably low morbidity and mortality. Although the risks are high but with extensive workup and proper preparation of patients promising results can be achieved.

Nurse Practitioner program in a developing country congenital cardiac surgery program

Sadaqat Ali

Objectives:
To describe the experience of developing an Advanced Nurse Practitioner (ANP) program in a developing country
Methods:
The idea of developing this program was taken to the Dean school of nursing and later on also approved by s the hospital administration. Initially five nurses with at least 5 years of experience in a cardiac surgery intensive care unit were identified and recruited. The initial plan is to complete on job training and certification in 1 year. Educational component included a 10-day course in blended learning, participation in cardiopulmonary and pharmacology module of school of medicine along with a series of didactic lectures designed specifically for ANP. They were also required to participate in mortality-morbidity meetings of department as well as in journal club. Training component included active participation in daily rounds, different bedside procedures like chest drain insertion etc. these procedures and competencies were documented in log book and signed by a supervisor.
Results:
The program ran well for initial six months after which there was drop out of two nurses. With the passage of time service became busy and heavily dependent on ANP so their training was hampered so it was decided to prolong the training to two years. And its running well. While the impact of it will be clear after these ANP pass out and come into practice. There were many hurdles in this process which included proper registration and certification by a licensing body, adequate time distribution between learning and service delivery, and drop out.
Conclusion:
Developing a ANP program can help improve the patient outcome specially in a congenital cardiac surgery program in a developing country but there are some hurdles which can hamper the speed of the process and prolong its implementation and effects.

Association Of Aetiology, Presentation And Post-operative Complications Of Post-traumatic Peripheral Artery Pseudoaneurysm

Dr. Junaid Ahmed

Objectives:
To describe post traumatic pseudo aneurysms and its association to causes, presentation and conventional surgical treatment modalities.
Methods:
This Descriptive study carried out in the Department of Cardiovascular Surgery, Lady Reading Hospital, Peshawar from January 2003 to December 2007. Patients with associated arteriovenous fistula were excluded from this study. All the demographics including age, sex, type of injury, site, associated complications operative details, peri operative morbidity and mortality were prospectively recorded in a data base.
Results:
The total number of patients was seventy-five. All the patients underwent conventional surgical procedures. Reverse saphenous graft was received by 34%, 24% had end to end anastomosis, 12% had interposition synthetic graft, 8% had rent repair while 21.33% had primary ligation of the involved artery. There was no peri operative mortality. Six patients had postoperative complication in the form of graft thrombosis and or infection. Three patients had amputation, two in lower limb and one in the upper limb. Majority of them were male 90.66%. Age ranged from 7 years to 75 years. Most of the patients (77.3%) were in second to fourth decade of life. The most common cause of injury was gunshot wound (56%) followed by stab wounds (13.33%) and road traffic accidents (12%). Few cases of bomb blast (6.66%), Post cardiac catheterization (4%), glass injury (4%) and intravenous drug abusers (2.66%) were also reported. The commonest site of injury was femoral artery (37.33%).
Conclusion:
In this study majority of patients were male with gunshot wound as commonest cause. Reverse saphenous vein graft was treatment of choice. Infection and thrombosis were the commonest postoperative complications.

Surgical Repair of post-infarction ventricular septal rupture: Determinants of operative mortality and survival outcome analysis

Yasir Khan Adult Cardiac surgeon

Objectives:
Ventricular septal rupture (VSR) is one of the fatal complications of myocardial infarction (MI). Surgery provides the maximum survival benefit. Our objective was to investigate the risk factors of surgical mortality and to do the survival analysis in the past six years at our hospital.
Methods:
All the patients operated between 2009 and 2015 for repair of post MI VSR were analyzed retrospectively fore demographics, comorbidities, operative and post-operative outcomes. The primary outcome was 30 days mortality. The follow up was done till April 2017 and the follow up data was obtained from hospital records and by telephoning the patients. SPSS was used for statistical analysis. P value < 0.05 was considered significant.
Results:
A total of 31 patients were operated for VSR repair with a mean age of 57.19±7.73 years. 18 patients also had a concomitant coronary artery bypass grafting (CABG). The operative mortality in this series was 25.8% Univariate analysis that pre-operative ejection fraction (E.F) (p value, 0.010) and cardiogenic shock (p value 0.031) were a significant risk factors for operative mortality while on logistic regression analysis only the cardiogenic shock was found to be an independent risk factor for operative mortality with the odds ratio of 2.17. Low ejection fraction only acted as a confounding variable. The mean survival at 6 years was 34 months with a survival rate of 28.6%. The additional CABG did not confer any survival benefit.
Conclusion:
The patients in cardiogenic shock pre-operatively have a high operative mortality. Low E.F acts as a confounding factor. Concomitant CABG does not confer any survival benefit

Minimally Invasive Cardiac Surgery at AFIC/NIHD Rawalpindi

Muhammad Amir Khan

Objectives:
This study analyzes a single institutional experience of minimally invasive cardiac surgical operations for 3 years and 9 months, reviewing their short-term morbidity and mortality
Methods:
All the patients who underwent Minimally Invasive Cardiac Surgery (MICS) at AFIC/NIHD Rawalpindi from December 2013 to September 2017 were included in the study. Data collection was done from Cardiac Surgery Database of AFIC/NIHD.
Results:
During the study period a total of 93 patients underwent MICS at AFIC / NIHD.
These93 MICS procedures included 34 Mitral Valve Replacements (MVR), 25 Aortic Valve Replacements (AVR), 19 Atrial Septal Defect (ASD) closures, 03 ASD closures with MVR, 03 Mitral Valve Repairs, 02 MVR with Tricuspid Valve repairs and 07 Minimally Invasive Direct Coronary Artery Bypass Graft (MIDCABG) surgeries. Mean age was 43 years with the preponderance of male gender 56%. Comorbids included diabetes 9.8%, hypertension 17%, COPD

5.8% and atrial fibrillation 42%. Mean CPB time was 142 ± 41 min and ACC time 84 ±43 min. The operative mortality was 0%. Median ventilation time was 7.0 hrs and median ICU stay was 28.4 hrs. Postoperative wound infection was 1.16%

Conclusion:

This study demonstrates that the minimally invasive cardiac surgical operations are reproducible with low perioperative morbidity and mortality and with early outcomes that are equivalent to conventional operations.

Comparative study on clinical characteristics of rheumatic heart disease patients undergoing surgical valve replacement at Punjab Institute of Cardiology, Lahore, Pakistan

Hamza Islam Butt

Objectives:

To assess prevalence patterns of isolated/mixed rheumatic valvular lesions and their associated risk factors amongst rheumatic heart disease (RHD) patients undergoing surgical valve replacement.

Methods:

An analytical cross-sectional design was used. Convenient sampling technique was used to select 87 RHD patients who underwent a first-time valve replacement for mitral valve (MV), aortic valve (AV) or both (DV) between 1st April and 20th October 2016 at the Cardiac Surgery Units of Punjab Institute of Cardiology, Lahore, Pakistan. Patients with systemic hypertension, diabetes mellitus type-II, congenital heart defects, coronary artery disease, non-rheumatic valvular degeneration, positive for hepatitis C, undergoing concomitant coronary artery bypass graft or a 'redo' valve replacement procedure were excluded from the study. A proforma was used to collect pre-operative data on patients' demographics, laboratory investigations, ECG, trans-thoracic echocardiography reports and short-term postoperative outcomes. Data was entered into and analyzed using IBM Statistical Package for Social Sciences Version 23.0.

Results:

Age (mean ± S.D.) was 32.79 ± 13.06 years, which was divided into 4 groups based on quartiles. The number of males was 46 (52.9%). Majority (56.3%) patients underwent MV replacement. Mitral regurgitation (MR) was the most common lesion followed by aortic regurgitation (AR), observed in 80% and 57.5% cases respectively. Of 71 available ECGs, atrial fibrillation (AF) was observed in 46.5% cases. Increasing age group was negatively correlated with mitral regurgitation severity (ic = -0.188, p-value = 0.033) and positively with aortic stenosis severity (Tc =0.141, p-value= 0.010).

No significant elevations were observed for ASO Titer, C-reactive protein and leukocytes though erythrocyte sedimentation rate wa' abnormally high in 46.94% cases, collectively indicating little ev$_s$idense of ongoing residual inflammation.

Conclusion:

Amongst RHD valve replacement cases, MR was the most common lesion (80%) followed by AR (57.5%). MR was more severe in younger patients whilst AS was more severe in older cases. There is little evidence of ongoing residual inflammation.

The surgical outcome and quality of life after the repair of Post-Infarct Ventricular Septal Rupture

Anjum Jalal; Irfan Rasheed

Back ground:

Post infarct ventricular septal rupture is a potentially fatal complication. In the current era of aggressive revascularization its incidence ranges 0.17-0.32 % of all acute myocardial infarctions. Despite the best medical and surgical treatment 45-80% patients die after VSR.

Objectives:

To review the outcome and quality of life after surgical repair of VSR performed by single surgeon using the technique of repair without clamping of aorta.

Methods:

It is a retrospective analysis of 26 patients operated at three different centers by one surgeon. The data was retrieved from the electronic databases of all these three centers which are using the same database software. The numeric data x& as summarized in Mean +Standard Deviation while categoric variables were summarized into Frequency and Percentage. All operations were done on conventional cardiopulmonary bypass, systemic hypothermia to 30C and local hypothermia with ice clod saline. The cross clamp was not used except in two patients.

Results:

The mean age was 49.85 $\pm$ 16.43 years. There were 17 male and 9 female patients. Twenty one patients had apical VSR while five patients had postero-basal VSR. The mean time from VSR to surgery was 14-days. Most of the operations (n=18) were done as Urgent while 8 patients were done as Emergent/Salvage. Fourteen (14%) patients underwent concomitant CABG. Preoperative IABP was used in six patients. Fifteen patients had IABP after completion of surgical repair. The post operative ventilation time was 22.00 $\pm$ 25.85 hours and duration of inotropes was 72.42 $\pm$ 37.63 hours. The average chest drainage was 971.67 $\pm$ 706.68 ml. Five (19.23%) patients died within the hospital stay after surgery while one patient died after six weeks due to pulmonary sepsis and ongoing congestive heart failure. Out of the 5 surgical deaths 3 were of posterior VSRs. Interestingly these patients did

not have IABP as well. Out of 20 survivors 16 reported back to have excellent quality of life with NYHA Class I while 4 patients could not be traced.

Conclusion:

Surgical repair of VSR results in satisfactory survival and excellent quality of life. The posterior VSR and non utilization of IABP seems to have adverse effect on surgical outcome

Neurological Complications are avoidable during CABG

Zulfiqar Haider; Asif Rashid Alamgir; Anjum Jalal

Background:

Stroke and other neurological complications have devastating impact on the patients undergoing CABG. The SYNTAX study has shown 2.2% incidence of early stroke in CABG vs 0.6% in **PCI.** Nearly 40% strokes occur intra-operatively and are attributed largely to manipulation of aorta.

Objectives:

To review the incidence of stroke in patients undergoing CABG at Faisalabad Institute of Cardiology AND to review the impact of using the technique of single clamping in preference to the conventional multiple partial clamping technique for proximal anastomosis.

Methods:

It is a retrospective analysis of our database. The data of all patients who underwent CABG (N= 795) from July 2016 to August 2017 was retrieved from our dedicated electronic database. These included 722 patients of Isolated CABG while 73 patients had combined procedures. All operations were done on conventional cardiopulmonary bypass and cold blood cardioplegia. The numeric data was summarized in Mean+Standard Deviation while categoric variables were summarized into Frequency and Percentage.

Results:

The mean age of isolated CABG group was 53.83$\pm$8.8 years. The mean Parsonnet and Logistic EuroScore were 4.3$\pm$3.2 and 3.3$\pm$0.9 respectively. Forty nine patients (6.78%) had significant carotid artery disease. The mean number of grafts was 2.8$\pm$0.82. Diabetes was present in 27.8% patients. Only 1.25% had Emergent/Salvage CABG. Three vessel coronary artery was found in 74.69% patients while 1.66% patients had significant left main stem stenosis. A vast majority of patients had diffuse coronary artery disease and for that reason 106 patients underwent coronary endarterectomies. Neurological complications were noticed in 14 patients (1.94%) which included 12 permanent paralysis. The second part of analysis revealed that 67 patients were operated by single clamp techniflue. None of the these 67 patients developed neurological complications. Although this is a remarkable finding, due to small population it is difficult to draw any statistical significance.

Conclusion:

The incidence of neurological complications can be reduced significantly by adopting the appropriate preventing measures. A policy of continuing the use of pre-operative anti-platelets, stringent management of per-opertive blood pressure, use of arterial filters, administration of Aspirin within 6-hours of surgery and use of Single Clamp technique may be the reasons of such a low incidence of stroke in this study.

Immediate outcome of Mitral Valve Repair: Punjab Institute of Cardiology experience

Aftab Yunus; Taimoor Khan

Objectives:

To evaluate the early results of mitral valve repair.

Methods:

The study was conducted at Junaid Surgical Block, Punjab Institute of Cardiology Lahore. From February 2017 till September 2017 a total of 60 patients underwent mitral valve repair. The mitral valve was approached by superior septal approach. Ring annuloplasty was done in all the patients; neochord formation, quadrangular or triangular resection was done when required. The results were assessed by per operative trans-esophageal echo and post-operative trans-thoracic echo.

Results:

The age range of patients is 13 to 63 years (mean 35.4 years). The male to female ratio was 1:1. The repaired valve were ischemic 08, mixed mitral valve disease 08, pure MR 29, with aortic valve disease 15 and miscellaneous 03 (ASD, Ruptured Sinus of Valsalva, ascending aortic aneurysm). Three patients died. Post-operative trans-thoracic echo at discharge showed that 22 patients had no MR (36.67%), 20 patients had trivial MR (33.33%), 17 patients had mild MR (28.33%) and 01 patient had moderate MR (1.67%).

Conclusion:

Mitral Valve Repair can be done with good results. It should always be attempted in a repairable valve.