

e0563 **IMPLANTATION OF LEFT VENTRICULAR EPICARDIAL LEAD GUIDED BY OVERLAY REF FOR CARDIAC RESYNCHRONISATION THERAPY**

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Objective This study was to report our initial experiences with cardiac resynchronisation therapy (CRT) guided by Overlay Ref for the treatment of heart failure.

Methods Eleven patients with heart failure were enrolled in this study, with (24%±11%) of mean left ventricular ejection fraction (LVEF) and (78 mm±13 mm) of left ventricular end-diastolic dimension (LVEDD). Using Overlay Ref technique, a reference image (inverted) of coronary sinus (CS) and its branches was faded into the live fluoroscopic image. The guidewire (originally designed for percutaneous transluminal coronary angioplasty) could be placed to the target branch of CS guided by Overlay Ref image. Then the left ventricular epicardial lead was positioned to the desired spot through the guidewire.

Results All patients were successfully implanted with LV leads guided by Overlay Ref. Exposure time to X-ray was (19.7 min±14.2 min). And the total duration of procedure was 99 min±42 min). 2 weeks after the implantation procedure, ultracardiography (UCG) test showed that LVEF of this patient was raised to (28%±9%).

Conclusion Overlay Ref technique could facilitate the procedure of LV lead implantation for CRT.

e0564 **EFFICACY AND SAFETY OF IMPLANTABLE CARDIOVERTER DEFIBRILLATOR AVOIDING ROUTINE DEFIBRILLATION THRESHOLD TESTING**

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Objective To evaluate the efficacy and safety of implantable cardioverter defibrillator (ICD) and cardiac resynchronisation therapy-defibrillators (CRT-D) avoiding defibrillation threshold (DFT) testing when treating ventricular tachycardia (VT) or ventricular fibrillation (VF).

Methods We analysed a continuous database of the 21 patients who had avoided DFT during ICD implantation from Oct. 1999 to Aug. 2008. Follow-up data were completed and analysed in the 21 patients with ICD implantation.

Results ICDs were implanted successfully in 17 patients with VT or VF, and CRT-D were implanted successfully in 4 myocardial patients with severe heart failure who avoided DFT during ICD or CRT-D implantation. Eight patients accepted DFT 1 week later, VT or VF was not induced in 3 patients (37.5%). During the mean follow-up of 1–7 (4.2±1.9) yrs, malignant ventricular arrhythmia was recorded in 16 patients. Among them, 89 episodes were successfully terminated by defibrillation (100%), 120 VT events were terminated by the first run of antitachycardia pacing (51.1%) and 22 by low energy cardioversion (59.2%). All patients took antiarrhythmia drugs after ICD or CRT-D implantation. No patient died from malignant ventricular arrhythmia during the follow-up.

Conclusion No application of routine DFT may avoid complications associated with DFT during ICD or CRT-D implantation. ICD or CRT-D implantation may effectively treat fatal ventricular tachyarrhythmias and prevent sudden cardiac death.

e0565 **ANALYSIS OF INAPPROPRIATE THERAPY IN THE PATIENTS IMPLANTABLE CARDIOVERTER DEFIBRILLATORS**

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Objective Observed the efficacy of the patients with implantable cardioverter defibrillators (ICD). Sought to identify the reasons of inappropriate shocks, to minimise the risk of inappropriate shocks.

Methods Followed up nineteen patients with ICD. Stored ICD electrograms from all shocks episodes were analysed to distinguish appropriate and inappropriate shocks according to history of tachycardia. Any ICD therapy not delivered for VT or VF was deemed inappropriate shocks therapy. It can be considered as inappropriate that ICD firing for sinus tachycardia, supraventricular tachycardia, atrial fibrillation, atrial flutter, and nonsustained ventricular tachycardia.

Result There is no shock episode in ten patients (52.63%). Appropriate shocks occurred in 6 patients (31.58%) Inappropriate shocks occurred in three patients (15.79%). Inappropriate shock episodes constituted 4 of 11 total shock episodes. We presented three cases of inappropriate shocks due to atrial fibrillation, sinus tachycardia and high frequency noise.

Conclusions Inappropriate shocks occurred commonly in our cases. Varied reason induced the inappropriate shocks. Programing the device parameter and choosing proper discriminators can minimised rate of inappropriate shocks.

e0566 **CORRELATION OF ECG FINDINGS WITH SYMPTOMS OF PALPITATIONS USING NOVEL MULTI-LEAD MOBILE PHONE ECG**

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Objective The aim of this study is to correlate the ECG findings with symptoms of palpitations using a novel multi-lead mobile phone ECG.

Methods A total of 39 consecutive patients with symptoms of palpitations were enrolled for a period of 3–6 months. Standard 12 lead baseline ECGs were performed and patients were divided into 4 main categories of ventricular conduction defects; 1) sinus tachycardia, 2) supraventricular tachycardia, 3) ventricular ectopics and 4) non-sustained ventricular tachycardia. Patients were each given a mobile phone ECG (EPI Life) to record their ECGs during symptoms. ECG recordings were correlated with symptoms including palpitations.

Results Of the 130 ECG recordings assessed, 33% showed sinus tachycardia, 25% supraventricular tachycardia, 41% ventricular ectopics and 1% non-sustained ventricular tachycardia. All patients were symptomatic during ECG recordings.

Conclusions Mobile phone ECG (EPI Life) is a useful diagnostic tool for early detection of arrhythmias and prevention of morbidities and mortalities.

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e0567 **EARLY DIAGNOSIS AND RESCUE PERICARDIOCENTESIS FOR ACUTE CARDIAC TAMPONADE DURING RADIOFREQUENCY ABLATION FOR ARRHYTHMIAS, IS FLUOROSCOPY ENOUGH?**

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Background With the number of complex catheter ablation procedures increasing, procedure-related acute cardiac tamponade is

encountered more frequently in the cardiac catheterisation laboratory. Survival depends on prompt recognition and rescue pericardiocentesis.

Objective The aim of this report was to validate fluoroscopic heart silhouette characteristics associated with cardiac tamponade as a diagnostic method, and evaluate the safety and effectiveness of fluoroscopy-guided pericardiocentesis during catheter ablation.

Methods All cases of acute cardiac tamponade that occurred in the cardiac catheterisation laboratory during radiofrequency catheter ablation from March 2004 to November of 2009 were reviewed retrospectively.

Results Of 1832 catheter ablation procedures performed during a 5-year period, 10 (0.55%) were complicated by cardiac tamponade. Fluoroscopic examination confirmed the diagnosis in all 10 patients and demonstrated effusions before hypotension in 4 patients. All patients were stabilised by fluoroscopy-guided pericardiocentesis with placement of an indwelling catheter and autologous transfusion. The time interval between recognition of cardiac tamponade and completion of pericardiocentesis was 6.0 ± 1.8 min (range 3–9 min). The mean aspirated blood volume was 437 ml (range 110–1400 ml), and the mean autotransfused blood volume was 425 ml (range 100–1384 ml). Surgical repair of the cardiac perforation was needed in one patient. No procedure-related death occurred. The ablation procedures were resumed and succeeded in 3 patients after pericardiocentesis.

Conclusion A reduction in the excursion of cardiac silhouette on fluoroscopy is an early diagnostic sign of cardiac tamponade during radiofrequency ablation. Fluoroscopy-guided pericardiocentesis is a safe and effective management strategy for cardiac tamponade developed in the cardiac catheterisation laboratory.

e0568 FOLLOWUP OF FIVE PATIENTS WITH BRUGADA SYNDROME TREATED WITH ICD

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Objective To investigate clinical symptoms, episodes of arrhythmias and its therapy in patients with Brugada syndrome treated with implantable cardioverter-defibrillator (ICD).

Methods Five patients with concealed Brugada syndrome (all male, mean age 41.6 ± 10.14 years) were treated with single-chamber ICD and followed up every three months. The time of onset, type of arrhythmia, treatments and its results of the episodes were investigated according to the data logs of the ICD.

Results The diagnosis of Brugada syndrome was made according to sodium channel blocker provocation test in four patients (2 by ajmaline, 2 by propafenone), and screen of new praecordial leads system in another case. Episodes of syncope in all patients and ventricular fibrillation in four cases were documented before ICD therapy. During electrophysiological study, ventricular fibrillation could be induced in three patients. During a follow-up of 22 ± 18 months, 75 episodes of ventricular fibrillation were documented. Among them 61 were terminated by 86 shocks successfully, 14 stopped spontaneously. One patient still experienced 4 episodes of syncope because of his increased defibrillation threshold. One patient had 26 times inappropriate shocks due to atrial fibrillation, which disappeared after we adjusted the protocol of the ICD. Another one had two episodes of syncope though no event was recorded in his ICD. Because the tilt test reached positive result, the diagnosis of vasovagal syncope was made.

Conclusion ICD implantation is a necessary and effective therapy for high risk patients with Brugada syndrome, and should be followed up regularly and programmed appropriately because of increased defibrillation threshold or inappropriate shocks.

e0569 POSTCONDITIONING EFFECT ON REPERFUSION ARRHYTHMIA OF ST-SEGMENT ELEVATION ACUTE MYOCARDIAL INFARCTION

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Objective To study postconditioning effects during the first minutes of reperfusion in STEMI patients undergoing emergency percutaneous coronary intervention (PCI) on the myocardial reperfusion Arrhythmia.

Methods Between Oct. 2006 and Jan. 2009 at affiliated hospital of Beihua University, 64 patients diagnosed with STEMI undergoing emergency percutaneous transluminal coronary angioplasty (PTCA) and stenting within 12 h from onset of symptoms to open the infarct-related coronary artery, were randomly divided in two groups: the control group (n=34) which were treated by implantation stent after PTCA, and the experimental group (n=30) which were treated by ischaemic postconditioning within first minutes of reflow by 3 episodes of 30-seconds inflation and 30-seconds deflation of the angioplasty balloon. All patients were first onset of STEMI, and did not have the inverse perfusion from collateral circulation. Two groups were observed and compared with reperfusion arrhythmias within 5 min after beginning put into practice reperfusion.

Results In the control group and experimental group the incidence of frequent premature ventricular contraction (PVC) was dividedly 52.9% and 26.7% ($p < 0.05$), paroxysmal ventricular tachycardia was dividedly 58.8% and 23.3% ($p < 0.05$), nonparoxysmal ventricular tachycardia was dividedly 41.2% and 16.7% ($p < 0.05$), ventricular fibrillation was dividedly 5.9% and 0%, sinus bradycardia was dividedly 26.5% and 6.7% ($p < 0.05$), sinus arrest was dividedly 20.6% and 3.3% ($p < 0.05$), and atrioventricular block was dividedly 14.7% and 0% ($p < 0.05$). In postconditioning group there was significant reduction in the incidence of reperfusion arrhythmias.

Conclusions postconditioning in emergency PCI for STEMI can significantly reduce the incidence of myocardium reperfusion arrhythmias.

e0570 CAN HATCH SCORE PREDICT RECURRENCE OF ATRIAL FIBRILLATION AFTER CATHETER ABLATION?

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Background HATCH score ($1 * \text{hypertention} + 1 * [\text{age} > 75] + 2 * [\text{stroke or transient ischaemic attack}] + 1 * [\text{chronic obstructive pulmonary disease}] + 2 * [\text{heart failure}]$) is an established predictor of progression from paroxysmal to persistent atrial fibrillation (AF). Whether atrial remodelling indexed by HATCH score could be a predictor of recurrence after catheter ablation of AF needs to be explored.

Methods The data of 608 consecutive AF patients who underwent an index circumferential pulmonary veins ablation were retrospectively analysed. Of these patients, 313 (51.5%) patients had HATCH=0, 225 (37.0%) patients had HATCH=1, 70 (11.5%) patients had HATCH ≥ 2 .

Results The patients with HATCH ≥ 2 had significantly the largest left atrium size, the largest left ventricular end systolic diameter, and the lowest ejection fraction among the three HATCH categories. There were significant differences of the proportion of diabetes mellitus, statins medication, and angiotensin-converting enzyme inhibitors/angiotensin receptor blockers medications among the