TCT-422

Large 22 to 24Fr femoral vein hemostasis with a subcutaneous stitch or a double Perclose closure is effective and safe.

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Background: Various methods of hemostasis have been developed for large 22 to 24Fr femoral vein accesses for structural heart disease. Manual compression (MC) is uncomfortable whilst a subcutaneous stitch (SCS), which too is uncomfortable to remove, and a double Perclose (DPC; Abbott Vascular Devices, CA) closure enables immediate hemostasis. This study is to determine the effectiveness and safety of these methods.

Methods: 155 patients (mean age 70±17; 60% female) underwent 158 valvular therapies with the MitraClip device (n=147, 93%); Abbott Vascular, Santa Clara, CA), Melody n=12, 1% (Medtronic Inc., Minneapolis, MN) or Edwards SAPIEN n=9, 6% (Edwards Lifesciences LLC, Irvine, CA) valves. There were 24(16) SAC and 99(62) DPC and 35(22%) MC.

Results: There were 8(5%) access site complications (ASC): 4/35(11%) in MC (2 hematoma ≥1cm but <5cm, 1 hematoma ≥5cm requiring 2U of blood, 1 arterial venous fistula, 1/244%) in SCS (1 bleeding requiring 1U of blood), and 39(3%) in DPC (1 femoral vein thrombosis, 1 hematoma ≥1cm but <5cm, 1 hematoma ≥5cm requiring 2U of blood). The frequency of ASC between methods was not significantly different (MC vs. SCS p=0.33, MC vs. DPC p=0.06, SCS vs. DPC p=0.78). Median length of stay was 1.02±1.1 days and was similar to patients that developed ASC (p=0.09) and between groups (p=0.23). Proximal (median dose 30±18mg) use did not influence the frequency of ASC (28% prostate use with ASC vs 6/8 without ASC, p=0.29). Post procedure hemoglobin and hematocrit drop was significant (1.4±1.0g/dl and 4.2±3.5%; both p<0.001) and by comparison, this decline was significantly less for SCS (0.7±1.2g/dl and 1.9±3.9%; both p<0.001). DPC required additional interventions (like SCS to attain immediate hemostasis more than SCS (26/99 (26%) vs. 1/24 (4%); p=0.02). Overall there were no in hospital deaths, ASC related deaths and wound infections at follow-up (mean 20±16months).

Conclusions: Femoral vein closure for large 22 to 24Fr accesses, with either the SCS or DPC method enables immediate hemostasis and reduces patient discomfort, without compromising safety.

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Profile, Safety, And 1-Year Outcome Of Patients With Same-Day Discharge After Percutaneous Coronary Intervention Using Different Vascular Access: A High-Volume Single-Center Experience.

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Background: Same-day discharge after elective percutaneous coronary interventions (PCI) allows a decrease in length of hospital stay, waiting list and costs with increased patient satisfaction. However, data regarding clinical features of the population with potential benefit and safety are limited.

Methods: A consecutive group of patients who underwent elective PCI and considered suitable for same-day discharge over a period of 4 years were enrolled. Unstable patients with left main disease, left ventricular ejection fraction ≤45%, non-use of dual antiplatelet therapy, use of oral anticoagulants or inability to reach the PCI-center within 60 minutes were excluded. Patients were examined 6 hours post-PCI and discharged if there were no procedural complications. Clinical follow-up was carried out in all patients after 7 days from discharge, and at 1-month and 1-year.

Results: After 981 potentially ambulatory-PCI procedures, 417 patients (42.5%) were discharged as day cases. PCI procedures were performed by transradial (89%), transfemoral (9%), or transcutal (16%) access. Mean age was 65±10 years (80% male), 50% active smokers, and 27% diabetics. Most patients (62%) lived in the city area (<50 km away from the PCI-hospital). Percutaneous success was achieved in 100% of patients. In over 85% of patients one or two lesions in one or two vessels were treated. The mean procedure time, mean post-PCI observation time, and mean length-of-stay after PCI were 58±22 min, 6.5±1.24 hrs, and 10.35±4.11 hrs, respectively. During the procedure, vascular complications related to the radial route were found in 9 (2.1%) patients, and conversion from transfemoral to transradial was needed in 6 (1.4%) of patients. At 7 days follow-up, 2 patients developed mild size hematoma on radial access site and 1 patient on femoral access site, without any other vascular complications or major bleeding. There were no deaths or myocardial infarction within 7 days of discharge. The 1-year mortality rate was very low (0.2%; 1 patient).

Conclusions: Same-day discharge after elective PCI is feasible and safe with a remarkable 1-year outcome. Its application and benefits could be extended to a broader population of patients.

TCT-424

Trends in access site choice for PCI and influence on mortality - Observational data from the British Cardiovascular Intervention Society PCI database.

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Background: In the UK, there has been a significant change in choice of access site for PCI driven by the desire to reduce access site complications. This has become increasingly important with the shift to more acute PCI with the use of more potent anti-platelet therapies with the move from radial accesses. We hypothesised that this might impact on the UK PCI database. Over the last four years we sought to assess changes in outcome using nationally collected data from the British Cardiovascular Intervention Society database.

Methods: This study includes data collected by the British Cardiovascular Intervention Society under the auspices of the Central Cardiac Audit Database. We performed a retrospective analysis of the BCIS database between January 2006 and December 2010. The data was split into 2 cohorts based on access site: either radial or femoral (mixed access site use and other access sites were excluded from the analysis).

Results: Of the 370,238 procedures recorded, 223,476 (60.4%) used only transfemoral access (TFA) and 124,616 (33.7%) used only transradial access (TRA). Data was missing or mixed access was used in 22,146 (6%) of procedures. Between 2006 and 2010 TRA for PCI increased from 17.1% to 50.8%. Over the same period, PCI for ACS increased from 47% to 61% of procedures. 30 day mortality was 1.9% in the TFA group and 1% in the TRA group (p < 0.001). The incidence of patients presenting with cardiogenic shock was significantly higher in the TFA group (2.1% vs 0.9%, p < 0.001). With shocked and intra-aortic balloon pump (IABP) treated patients excluded, TRA remained independent associated with a reduction in 30 day mortality (HR 0.65, CI 0.60-0.70: p<0.0001) in a multivariate analysis.

Conclusions: The majority of PCI in the UK is now undertaken using radial access. In this large observational study, there is an association between TRA and lower 30 day mortality. The association persists even when shock and IABP treated patients are excluded.

TCT-425

Repeated Transradial Catheterization: Feasibility, Efficacy and Safety

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Background: Transradial approach is used as an alternative to transfemoral approach for coronary angiography (CA) and primary coronary intervention (PCI). Transradial approach results in less access site bleeding, immediate ambulation after the procedure, reduced length of stay and costs, less patients discomfort and hospital stay. Many centers have been suggested that transradial approach can lead to increased incidence of radial artery occlusion, not allowing for repeated catheterizations from the same artery. There is limited data on the feasibility, safety and efficacy of repeated transradial (rTR) catheterization from the same artery. We evaluated the incidence of failure and major complications during rTR catheterization.

Methods: We performed 3,857 catheterizations with various indications and access sites at the American Heart Institute, in Nicosia-Cyprus, between Jan 2006 and Dec 2009. In our center, we established TR catheterization as the routine method for elective, urgent and emergency procedures (primary or rescue PCI). Baseline characteristics (e.g. sociodemographics, underlying disease, smoking, prior CABG), procedural success rates and major complications were recorded.

Results: Right rTR catheterization was attempted in 92 patients. Repeated access to the radial site was not possible in only 2 patients, due to poor pulse (n=1), and inability to advance the wire (n=1). In 84 patients right rTR was successfully performed twice, and in 6 patients 3 times. No major access site complications were noted in any of the above procedures.
Conclusions: Our findings indicate a procedural success rate of 98% in performing same artery rTR catheterization with no major complications, providing support for the feasibility, efficacy and safety in performing rTR catheterizations.

Baseline Characteristics of 92 patients with Repeated Right Transradial Catheterization

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Diabetes</td>
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<tr>
<td>Hypertension</td>
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<tr>
<td>Hyperlipidemia</td>
<td>77.2%</td>
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<td>Current Smoker</td>
<td>43.5%</td>
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<tr>
<td>Previous CABG</td>
<td>2.2%</td>
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<tr>
<td>Male Gender</td>
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Mean Age at the time of procedure 59.34 (range 34 - 84)

TCT-426

“Balloon angioplasty tamponade facilitated seal” of large diameter arteriotomy vascular access during Endovascular interventions, from the SIMPLIPHiDE Study (Single center IMPELLA LVAD supported Pci in High Risk group of patients-Detroit Medical Center Experience)

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Background: In recent years there has been an increase in the use of percutaneous Impella LVAD supported high risk coronary interventions. Currently this technique requires large diameter arteriotomy via Common Femoral Access (CFA) to allow equpitment passage. Most commonly up to 14 French size sheaths are currently being inserted via CFA without a surgical cut-down. The limitation of large diameter arteriotomy has been closure of vascular access sites at the end of the procedure. A novel technique, named here; “Balloon angioplasty tamponade facilitated seal” of large diameter arteriotomy via contralateral access is described. At the time of 13-14 French sheath insertion, usually 2 Perclose sutures are deployed 90 degrees of each other which allows for sutures to provide a tighter seal. Post procedure the contralateral artery serves as an access for introducing appropriate sized balloon to tamponade flow of blood in External Iliac Arteries (EIA) during the final deployment of sutures.

Methods: LIMA catheter is introduced over a wire via the contralateral access to the ipsilateral Common Iliac Artery (CIA). Guide wire 0.035 is then introduced to the ipsilateral CFA passed the sheath into the SFA. Next, a balloon of appropriate size is introduced to the level of External Iliac Artery. The balloon is then inflated completely occluding blood flow to the ipsilateral CFA while Perclose sutures are finally tied in the remaining cases a femoral route was preferred due to a worst killip class or cardiogenic shock at presentation.

Results: In the “Pre-Tamponade” era there was a total of 129 patients. Post procedure there were 8 groin hematomas, 1 pseudoaneurysm and 3 patients with TIMI major bleeding requiring transfusion. In the “Post-Tamponade” era there were 159 patients. Post procedure there were 2 hematomas, no pseudoaneurysms or major bleeding. (p<0.01).

Conclusions: We can reduce major vascular complications including major bleeding, hematomas, pseudo-aneurysms in less time compared to conventional closure with “balloon angioplasty facilitated seal” technique , permitting efficient, effective, and safe hemostasis for high risk patients.

TCT-427

Transradial access for primary percutaneous coronary interventions in octogenarian patients with acute myocardial infarction. The ORA-STEMI (Octogenarians Radial Access in ST Elevation Myocardial Infarction) registry

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Background: Trans-radial access (TRA) in percutaneous coronary interventions reduce vascular complications. In ST-segment elevation myocardial infarction (STEMI) patients accepted for primary percutaneous coronary intervention (PPCI), there is also a reduction in major cardiovascular events and hemorrhagic complications. Despite recent published good results comparing TRA versus transfemoral in PPCI, limited data are available on elderly STEMI patients, were TRA access can be sometimes difficult and time consuming. We describe our experience in TRA approach for PPCI in the octogenarian STEMI patients and we compare these results with those obtained in younger subgroup.

Methods: In a single high volume PCI center (2000-2500 TRA elective PCI per year, of the 2655 patients accepted for PPCI between 2006 and June 2012, 304 were octogenarians (mean age: 83.6 ± 3.1 years). Of them, 240 (79%) were selected for TRA as first vascular approach. This group were compared with 2080 younger patients (mean age: 59.2 ± 12 years) undergoing TRA PPCI.

Results: The octogenarians had higher rate of women (55% vs 17%; p < 0.001), hypertension (71.2% vs 45%; p < 0.001), peripheral arterial disease (7% vs 3.1%; p = 0.004) and Killip class 3-4 (7.5% vs 4.1%; p = 0.03). They had less height (161 ± 9.1cm vs 168 ± 7.6cm; p < 0.001), corporeal surface (1.74 ± 0.1 m2 vs 1.9 ± 1.1 m2; p = 0.04). 6F guide catheter was used in all patients. Femoral crossover rate was higher in octogenarians (6.6% vs 3.8%; p = 0.01) most of them due to radial artery tortuosity or calcification (75% Vs 80%). There were no differences in time from arrival to cath lab to arterial cannulation (17.4 ± 10min vs 17.5 ± 7.2min; p=0.08) but octogenarians had longer intervals from arrival to cath lab to reperfusion (31.4 ± 14.1min vs 25.8 ± 11.3min; p = 0.01) and also longer fluoroscopy time (13.6 ± 8.9min vs 10.4 ± 7.2min; p < 0.001). There were no differences in procedural success rate (96.3% vs 97.8%).

Conclusions: Octogenarian patients can undergo successful PPCI for STEMI with radial access for PPCI with minimal longer reperfusion and fluoroscopy time delays due to femoral crossover and difficult radial anatomy.