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A New 6F Guiding Catheter for Right Transradial RCA-Percutaneous Coronary Interventions: First Report of Performance

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Background: Success of percutaneous coronary interventions (PCI) through Transradial access (TRA) relies on capable guiding catheters (GC). The GC's performance is partly driven by its distal shape. Most of the actual shapes address the problem of the back up support through optimized contact with the aortic ascending wall.

Aim: Through a shape modification in the shaft of existing GC, we tried to add a pendular effect, in order to make easier and safer the re-cannulation of coronary artery (CA) ostium. We tested the modification for GC used for left and right CA via right TRA, as for right CA via left TRA. The present communication reports the results of a modified GC aimed at RCA-PCI via right TRA.

Methods: The new shape was added to the actual 6F Heartrail™ II GC from Terumo and the catheter was tested on 46 consecutive patients requiring RCA PCI through 6F TRA. The catheter's performance was scored on a scale of 5 for ease of RCA cannulation ("friendly"), degree of support and level of safety (well aligned in the centre of the lumen's artery, no induced wall damage). Presence of a pendular effect, fluoroscopy time, volume of contrast used and, crossover to another GC were recorded. Level of difficulty of the PCI was evaluated as "easy" or difficult using a scoring system based on patient, aorta, coronary anatomy and lesions characteristics.

Results: PCI was successful for 45 patients (one patient left with partial revascularization). 6 GC crossovers happened (to 3 RRAD and 3 AL1 curves). Ease of RCA cannulation was graded $\geq 3/5$ for only 29 cases. For the 40 successful PCI with the new GC shape, degree of support and safety were respectively scored at 4,62 and 4,75/5. A pendulum-like effect was present for half of the cases. For the 22 PCIs classified as difficult, the crossover occurred for 3, support and safety remain at 4,2 and 4,5/5. The pendulum effect was detected for 14 (63%) of the 22 difficult cases but only for 8 of the 24 easy PCI (33%). There was no complication.

Conclusion: A pendulum-like effect was visible in 63 % of the difficult PCI. The GC shape modification provided a good support, allowing successful PCI for 40 of the 46 cases, and for 19 of the 22 difficult RCA cases. Further modifications are required for enhancing the ease of RCA cannulation.

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Avoiding The Low Road. Cath Access Site and Acute Kidney Injury

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Background: Acute Kidney Injury (AKI) is an important complication following cardiac catheterization, and it is not only the result of contrast medium exposure. Contrast independent factors such as atheroembolic phenomenon as a result of instrumentation of the abdominal aorta contribute to the development of AKI. Trans-radial cardiac catheterization has been shown to reduce the access site related bleeding complications. Trans-radial cardiac catheterization eliminates the passage of catheters via the abdominal aorta and can potentially reduce the incidence of AKI. In this study, we compare the incidence of AKI between trans-femoral and trans-radial approach.

Methods: Retrospective analysis of 2922 femoral and radial cardiac catheterizations at George Washington University hospital from 7/1/2009 to 12/30/2011 was performed. We then included patients who had elective and urgent cardiac catheterization and had follow up serum creatinine up to 7 days following cardiac catheterization. AKI was defined as rise of serum creatinine \Rightarrow 0.5 mg/dl from baseline up to 7 days after procedure. Other variables including hypertension, diabetes, age, gender, race, contrast volume, hypotension, smoking, hyperlipidemia, peripheral vascular disease, hematocrit, congestive heart failure, use of mechanical support devices (intra-aortic balloon pump or Impella) were collected.

Results: A total of 636 cases of elective and emergent cardiac catheterizations were studied (57% trans-femoral, 42% trans-radial). The incidence of AKI was reduced in the trans-radial cohort, but the difference was not statistically significant when corrected for Mehran score in a multivariate logistic regression ($P=0.9$). In the subgroup with acute coronary syndrome ($n=232$), the incidence of AKI was significantly reduced in the trans-radial group (1% in the trans-radial group vs 9% in trans-femoral group, $P<0.05$)

despite comparable mean contrast volume (204cc in femoral and 189cc in radial group) and correction for Mehran score.

Conclusions: Trans-radial catheterization is a safer alternative to trans-femoral approach and in addition to reducing the bleeding complications, it can also reduce the risk of AKI in patients with acute coronary syndrome.

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Same Day Discharge Radial Angioplasty, An Obligatory Reality In Centers With High Demand

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Background: Radial access is the access choice since many years in our hospital. For long time angioplasties were done by femoral access requiring more than 24 hrs of hospitalization. Nowadays radial access in the recent guidelines has an indication class IIa.

Objective: Show the great impact of a successful same day discharge radial angioplasty program, his limitation and complications.

Materials and Method: It is an observational, longitudinal, prospective and descriptive study, which includes patients who were treated by radial coronary angioplasty in the hemodynamics service of la raza medical center. The procedures were done since November 2009 to January 2012. The inclusion criteria are: not complicates angioplasty, main left artery not affected, true bifurcation, good result without: 1. - Dissection, 2. - Hemodynamic instability, 3. Electrocardiographic changes, 4. - Angina, 5. - timi flow less than 3, 6.- thrombosis, 7.- more than 3 hours, 7.- more than 300 ml of contrast.

All patients received aspirin and clopidogrel and were checked for 6 hours in an observational area.

Results: 375 coronary angioplasties were done: 69% males, mean age 56 years, 60% diabetics, 50% with hypertension, 30% dyslipidemias and 60% smokers. The anterior descending coronary was the most affected vessel. We used in 72% patients drug eluting stents. Post procedure patients were checked at the first 48 hours, 1 month, and 6 months. 17% patients refer pain in the access site and were treated with analgesics. Only one patient present cellulitis in the forearm and was treated with antibiotics, 2 patients presented not complicated hematomas and one patient important edema in the forearm, because he didn't take off the compressive apposite as indicated. There were no major cardiovascular complications.

Conclusions: The Same Day Discharge Radial Angioplasty is a safe procedure in appropriate selected patients, with no major complications and only 1.5% minor complications. It permits early stroll, with great comfort, easy and early discharge, reducing the hospitalization time by optimizing the human and material resources of de Institute with 100% of patients and family acceptance.

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Trends And Learning Curve In Characteristics And In-hospital Outcomes During Initiation Of A Trans-radial Coronary Intervention Program

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Introduction: Trans-radial approach for percutaneous coronary intervention (PCI) is gaining acceptance with larger numbers of operators undergoing conversion to this approach. However, there is limited data regarding the learning curve of transformation for trans-radial approach. The aim of the present study was to assess the trends and learning curve of trans-radial approach in terms of procedural and hospital outcomes.

Methods: The initial 250 consecutive patients who underwent trans-radial approach for PCI were divided to five chronological groups which were also compared with 621 transfemoral patients. Baseline, procedural characteristics as well as in-hospital outcomes were assessed for these pre-specified groups.

Results: Throughout the study period there were no significant differences in the baseline characteristics of trans-radial patients apart from hypertension which decreased along the study period (90% to 80%, $p=0.01$). The rates of patients who were treated for acute myocardial infarction increased (26% to 34%, $p=0.03$). Procedural characteristics were generally unchanged throughout the study period including amount of iodinated contrast volume used, lesion complexity and procedural complications. However, the rates of proximal lesion increased (8.8% to 35%, $p=0.01$) as well as the use of drug eluting