

**Methods:** Of 1918 PCI (1623 pts, aged  $66 \pm 4$  years old; 65% males) performed in our catheterization laboratory from January the 1st 2011 to January the 31st 2012, the 70% (1342) were performed via radial and 576 (30%) via femoral (187 cross over from radial, 324 due to operator criteria 65 for no appropriate Sheathless shape available) and 156 PCI (142 pts) initially scheduled via femoral were rescue to radial using SGC. Reasons for SGC use were: moderate to severe radial spasm in 48, tortuosity and/or subclavian elongation in 36, proximal radial take-off in 12, insufficient backup or difficulties to coronary engage in 23 and 37 by expected mismatch between radial artery and catheter needed for PCI.

**Results:** A total of 164 SGC were employed (98 (60%) of 6.5 Fr), being Super Power Backup (68%) the most common used followed by Amplatz left (21%). Successful rate was 100%. 105 left and 51 right coronary were engaged with SGC. There were 5 left main and 2 right coronary ostium (4.5%) iatrogenic dissections (all resolved with stent implantation). In 13 (8.3 %) cases there was an insufficient backup due to backward slip of the catheter at radial insertion point in the wrist that led to the need of active fixation of the catheter at that point.

**Conclusions:** The larger inner diameter, hydrophilic coated and tractability of SGC allows performing complex transradial procedure with a high successful rate and low cross over rate. The risk of coronary ostium dissection with SGC is not negligible and manufacturers should consider diminishing catheter tip stiffness. In complex procedures (chronic occlusions, rotablator, etc) active fixation at the wrist should be considered to avoid the backward slip of the catheter at the insertion point in the wrist.

**TCT-409**

**Radial Access: Is There An Increased Risk Of Operator Radiation Exposure During A Right Versus Left Radial Approach?**

Herma Kado<sup>1</sup>, Ambar Patel<sup>1</sup>, Siva Suryadevara<sup>1</sup>, Dominick Angiolillo<sup>1</sup>, Lyndon Box<sup>1</sup>, Martin Zenni<sup>1</sup>, Theodore Bass<sup>1</sup>, Luis Guzman<sup>1</sup>

<sup>1</sup>University of Florida College of Medicine-Jacksonville, Jacksonville, United States

**Background:** The transradial approach (TRA) is widely being adopted as the preferred method of access for coronary angiography. Previous studies have demonstrated that access with the left radial approach (LRA) may have some advantages over the right radial approach (RRA) such as decreased tortuosity and better catheter support. Few studies have demonstrated a significant difference in the amount of fluoroscopy time (FT) and environmental radiation exposure, but little data exist showing direct radiation exposure to the operator when comparing these two approaches. The aim of this study is to determine weather there is a significant difference in direct radiation exposure to the operator when using a LRA versus a RRA.

**Methods:** A total of 60 consecutive patients were randomized to a LRA or RRA. Patients with arteriovenous fistulas, prior coronary bypass surgery, or ST-elevation myocardial infarcts were excluded. Radiation dosimeter badges (RDB) were strategically placed on the head, external thyroid and internal sternum for each operator. Individual variables, including FT, scenes, calculated radiation dose, Head RDB, External Thyroid RDB and Internal Sternum RDB, were independently compared between LRA and RRA using a two-sampled t-test.

**Results:** There was no significant difference in FT, scenes and calculated radiation dose between LRA and RRA. However, a comparison of the RDB reveals a significant difference in direct radiation exposure to the operators' external thyroid RDB ( $p=0.015$ ) and a trend towards significance in the head RDB ( $p=0.070$ ). There was no significant difference in the internal sternum RDB measurements. (Table 1)

**Table 1**

	LRA (n=31)	RRA (n=29)	p-value
FT (min)	13.1±8.9	11.5±8.2	0.483
Scenes	15.1 ± 9	16.2 ± 10	0.659
Calculated Radiation Dose (MGy)	1634 ± 921	1853 ± 1545	0.512
Head RDB (mRems)	12.5 ± 9.3	17.7 ± 12.6	0.070
External Thyroid (mRems)	19.1 ± 15.0	33.0 ± 26.9	0.015
Internal Sternum (mRems)	3.0 ± 4.5	4.0 ± 5.3	0.462

**Conclusions:** There is a statistically significant increased risk of operator radiation exposure seen in the external thyroid RDB, and a trend towards significance in the head RDB, during a right radial approach.

**TCT-410**

**Arteriotomy Location Guided by Fluoroscopy Plus Real-time Ultrasound: In Defense of the Femoral Approach**

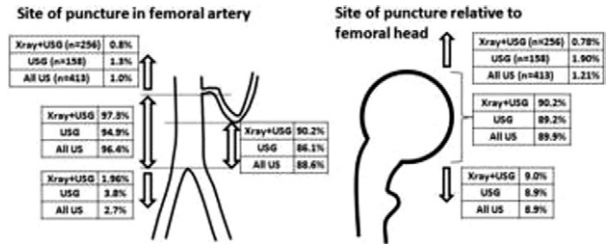
Michael Dyal<sup>1</sup>, Alan Heldman<sup>1</sup>

<sup>1</sup>University of Miami, Miller School of Medicine, Miami, FL

**Background:** Vascular complications are increased by puncture above or below the common femoral artery (CFA). The FAUST study showed that real-time ultrasound guidance (USG) modestly increased accuracy over fluoroscopic guidance (86.4% vs 83.3% CFA punctures) and decreased vascular complications. We hypothesized that USG accuracy could be improved.

**Methods:** 416 consecutive femoral sheath arteriograms were analyzed by a blinded reviewer. Procedures were performed with USG alone or with fluoroscopic femoral landmarks + USG (Xray+USG) by a single operator with USG experience. A micropuncture system and ultrasound probe needle guide were used. We recorded the site of arteriotomy in the femoral artery and also relative to the femoral head (FH), and the relation of the femoral bifurcation (FBI) to the FH.

**Results:** The puncture was in the CFA in 97.3% (Xray+USG; n=256) and 94.9% (USG; n=158; difference NS). The FBI was above the inferior border of the FH in 47.6% of studies, and above the middle of the FH in 4.1%.



**Conclusions:** Despite many high bifurcations, Xray+USG guidance permitted CFA puncture in 97.3% of catheterizations. The radial approach, pharmacologic improvements and other strategies have focused attention on the importance of reducing bleeding and vascular complications. Our series suggests that the Xray+USG technique may improve outcomes when the femoral approach is needed, as for large catheter interventions.

**TCT-411**

**Use of Sheathless Guide Catheter with Transradial Percutaneous Coronary Intervention: Single Center Experience with 7853 Procedures**

Mitsuru Kahata<sup>1</sup>, Norio Tada<sup>2</sup>, Taku Honda<sup>3</sup>, Kazunori Horie<sup>3</sup>,

Kaname Takizawa<sup>3</sup>, Tatsushi Otomo<sup>3</sup>, Naoto Inoue<sup>4</sup>, Taiichiro Meguro<sup>3</sup>

<sup>1</sup>Sendai Kousei Hospital, Sendai, Japan, <sup>2</sup>Sendai, Japan, <sup>3</sup>Sendai Kosei Hospital, miyagi, Japan, <sup>4</sup>Sendai Kosei Hospital, Sendai City, Miyagi Pref, <sup>5</sup>Sendai Kousei Hospital, Sendai, Japan

**Background:** Sheathless guide catheter is a hydrophilic catheter without use of an introducer sheath so that it decreases stress to radial artery. Although transradial percutaneous coronary intervention (TRI) using a sheathless guide catheter (Sheathless TRI) associates potential limitations such as its procedural complexity or coronary ostial dissection due to its tip stiffness, any large number studies have not shown the data yet. **Methods:** Our institution has utilized transradial approach as an initial system for more than ten years. Since we started to use sheathless TRI in 2004, with experiences and improvement of devices sheathless TRI is currently utilized in most TRI including emergent cases, even in bifurcation or rotational atherectomy by using 7.5 Fr sheathless TRI. We retrospectively investigated the feasibility and safety of sheathless TRI, undertaken at our institution from January 2004 to December 2011.

**Results:** A total of 10293 PCIs was performed in this study period by 43 operators including beginners to specialists. TRI was performed in 8868 cases, consisting of 7853 cases (88.5%) of sheathless TRI and 1015 cases (11.5%) of TRI using a conventional sheath. In any cases other than chronic total occlusion procedural success, defined as successful revascularization without conversion to other guide catheter systems, was achieved in 98.9% of sheathless TRI and 98.0% of TRI using conventional sheath ( $p=0.018$ ). Conversion from sheathless TRI to other system was occurred in 37 cases (0.47%) including 35 cases from sheathless TRI to TRI using conventional sheath and 2 cases from it to transfemoral approach. Coronary ostium dissection was occurred in 20 cases (0.23%) in all TRI including 16 cases (0.20%) by sheathless TRI and 4 cases (0.39%) by TRI using conventional sheath ( $p=0.28$ ), which were all bailed out by stent deployment resulting in procedural success. Critical arm ischemia requiring amputation or resulting in persistent paralysis was not seen in any cases.

**Conclusions:** Use of sheathless guide catheter via transradial artery is a feasible approach as an initial system for any interventionalists in any situations as long as transradial approach is permitted.

**TCT-412**

**Diltiazem, verapamil or dinitrate isosorbid for prevention of radial artery spasm in percutaneous coronary intervention**

Julien Rosencher<sup>1</sup>, Arthur Huber<sup>1</sup>, Aures Chaib<sup>2</sup>, Jacques Monsegu<sup>3</sup>,

Marc Antoine Arnould<sup>1</sup>, Philippe Allouch<sup>1</sup>, Arnaud Jegou<sup>1</sup>, Emmanuel Salengro<sup>1</sup>, Patrick Schiano<sup>3</sup>, Olivier Varenne<sup>1</sup>

<sup>1</sup>Cochin Hospital, Paris, France, <sup>2</sup>Montreuil Hospital, Montreuil, France, <sup>3</sup>VAL-DE-GRACE HOSPITAL, PARIS, France

**Background:** Radial artery spasm (RAS) remains the major limitation of transradial approach for percutaneous coronary interventions (PCI). We have previously demonstrated efficacy of verapamil to reduce RAS but recently, supply problems have occurred and many cathlab have changed verapamil to another calcium channel blocker, diltiazem.

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