channels were used in 82 (45.8%), 63 (39.1%) and 23 (12.1%) procedures, respectively. There was no significant difference regarding clinical and angiographic characteristics among the three groups. Similar success (septal: 97.6%, epicardial: 96.8%, AV groove: 91.3%, p=0.352) and procedural complication (septal: 1.2%, epicardial: 4.8%, AV groove: 8.7%, p=0.189) rates were achieved in the three groups.

**Conclusion:** In contemporary era, retrograde approach in PCI for CTO is as effective yet safe as antegrade approach at the expanse of longer procedure and fluoroscopic time, more radiation exposure and more contrast medium consumption. When the retrograde approach is adopted, either septal, epicardial or AV groove collateral channels can be used with high success rate and low procedural complication rate. The selection of PCI strategy should be individualized in CTO recanalization.

**Table 1. Comparison of patient demographic, angiographic and procedural characteristics between antegrade and retrograde approaches.**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Antegrade (n=152)</th>
<th>Retrograde (n=169)</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, yrs</td>
<td>65.8±11.1</td>
<td>61.8±11.1</td>
<td>0.001</td>
</tr>
<tr>
<td>Male</td>
<td>122 (80.3%)</td>
<td>152 (91.3%)</td>
<td>0.001</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>52 (34.2%)</td>
<td>51 (30.2%)</td>
<td>0.473</td>
</tr>
<tr>
<td>Hypertension</td>
<td>135 (88.6%)</td>
<td>138 (81.9%)</td>
<td>0.085</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>58 (38.3%)</td>
<td>77 (46.0%)</td>
<td>0.213</td>
</tr>
<tr>
<td>Smoking</td>
<td>31 (20.4%)</td>
<td>62 (36.7%)</td>
<td>0.001</td>
</tr>
<tr>
<td>Previous CABG</td>
<td>4 (2.6%)</td>
<td>3 (1.8%)</td>
<td>0.712</td>
</tr>
<tr>
<td>CTO duration, month</td>
<td>18.2±13.5</td>
<td>22.0±17.4</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>IFO score</td>
<td>2.2±1.5</td>
<td>4.2±3.8</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

**Outcomes**

- **Success rate**: 148 (97.4%) vs. 163 (96.6%) vs. 163 (96.6%) vs. 0.754
- **Procedural complication rate**: 3 (2.0%) vs. 6 (3.9%) vs. 0.507
- **Procedure time, minute**: 85.3±15.0 vs. 122.5±40.8 vs. <0.001
- **Fluoroscopy time, minute**: 33.1±16.7 vs. 50.8±18.2 vs. <0.001
- **Fluoroscopy dose, cGy**: 4.3±2.4 vs. 6.5±2.4 vs. <0.001
- **Contrast medium, ml**: 241.3±78.4 vs. 287.3±71.4 vs. <0.001

**Results:** The baseline clinical characteristics were similar between the two groups. The 6-to-9 month angiographic and 2-year clinical outcomes were compared between the two groups. There was no difference regarding the success rate of recanalization after retrograde wire crossing the collaterals between the septal collateral group and the epicardial group (91.8% vs. 100%, P>0.05). CART or reverse CART technique was used in 15 patients, and 14 patients (93.3%) were successfully recanalized. Collateral related perforation was observed in 3 (18.8%) cases with epicardial collateral as first choice (compared with septal collateral group, P<0.001). There were 17 (20.2%) patients failure of recanalizing the CTO lesions, among which 13 (15.5%) patients were due to the failure of retrograde wire crossing the collaterals.

**Conclusion:** The retrograde approach is an effective technique to recanalyze CTO lesions, with septal collateral as preferable. When epicardial collateral is selected, careful manipulation of devices and wires is essential due to potential risk factor of perforation of collateral channels.

**TCTAP A-051**

**Retrograde Approach for the Recanalization of Coronary Chronic Total Occlusion: Collateral Effect and CollateralRelated Complication**

**Jiaying Ma, Juying Qian, Lei Ge, Junbo Ge**

**Zhongshan Hospital, Shanghai, China**

**Background:** Retrograde approach through collaterals has been applied in the treatment of chronic total occlusion (CTO) lesions during percutaneous recanalization of coronary arteries. This study was to investigate the success rate of recanalization and collateral related complications in patients with retrograde approach.

**Methods:** 84 cases subjected to retrograde approach identified from July 2005 to July 2012 were included in this study. Patient characteristics, procedural outcomes and in-hospital clinical events were evaluated.

**Results:** Mean patient age was 59.6±11.2 years, 91.7% were men. The target CTO lesions were distributed among left anterior descending artery in 45 cases (51.5%), left circumflex artery in 1 case (1.2%), right coronary artery in 34 cases (40.5%) and left main in 4 cases (4.8%) respectively. Overall success rate of recanalization was 79.8%. The septal collateral was three times more frequently used for retrograde access than the epicardial collateral (68/84[81%] vs. 16/84[19%]). Successful wire passage through the collateral channel was achieved in 58 (72.6%) patients. Success rate of recanalization was 93.1% (54/58) and 50% (13/26) respectively in patients with and without successful retrograde wire passage of collateral channel (P<0.01). Successful retrograde wire passage through the collaterals was achieved in 49 of 68 septal collaterals (72.1%) and in 9 of 16 epicardial collaterals (56.3%), respectively (P=NS). There was no difference regarding the success rate of recanalization after retrograde wire crossing the collaterals between the septal collateral group and the epicardial group (91.8% vs. 100%, P>0.05).

**Conclusion:** The retrograde approach is an effective technique to recanalyze CTO lesions, with septal collateral as preferable. When epicardial collateral is selected, careful manipulation of devices and wires is essential due to potential risk factor of perforation of collateral channels.

**TCTAP A-052**

**The Predictors of Successful Percutaneous Coronary Intervention in Ostial Left Anterior Descending Artery Chronic Total Occlusion**

**Hui-Ya Fang**

**Kaohsiung Chang Gung Memorial Hospital, Kaohsiung City, Taiwan**

**Background:** Percutaneous coronary intervention (PCI) to chronic total occlusion (CTO) had become one of the most treatment strategies in recent era. The ostium of left anterior descending artery was one of the most difficult positions for CTO recanalization. Until now, limited data was available for prediction of successful ostial LAD CTO PCI. The aim of the study was to compare the differences between ostial LAD and non-ostial LAD PCI and to identify the predictors of successful ostial LAD CTO PCI.

**Methods:** This retrospective analysis included consecutive patients referred for CTO PCI between January 2001 and September 2013. Ostial LAD CTO was defined as PCI at the position which distance between lesion and left main bifurcation was less than 12mm. Baseline demographics, lesion characteristics, interventional procedure details and devices were compared between ostial LAD group and non-ostial LAD group. The predictors of successful ostial LAD CTO PCI were also evaluated.

**Results:** 621 patients underwent CTO PCI were enrolled retrospectively to this study. Total 70 patients of ostial LAD CTO were compared with 551 patients of non-ostial LAD CTO in this study. Ostial LAD CTO had more bridging and good collaterals than non-ostial LAD CTO. Procedure time, fluoroscopic time, contrast volume, the use of contralateral injection, the use of retrograde approach were significantly different in ostial LAD CTO PCI. The aim of the study was to compare the differences between ostial LAD and non-ostial LAD PCI and to identify the predictors of successful ostial LAD CTO PCI.

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