TCTAP A-108

Initial Experience of Rheolytic Thrombectomy for Acute Thrombotic Lesions in Peripheral Vascular Disease

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Background: The rheolytic thrombectomy are recently introduced for the treatment of acute thrombus in peripheral lesions in Korea. The ArgonNet (MEDRAD, Warrensville Heights, PA, USA) is a dual lumen catheter that uses the principle of the Bernoulli’s principle to capture, fragmentate and remove unorganized thrombus. We experienced 10 cases with rheolytic thrombectomy and report them.

Methods: This is a retrospective review from prospectively registered data base of the patients who underwent rheolytic thrombectomy with ArgonNet from Nov 2011 to July 2013. The patients’ clinical characteristics and procedure was reviewed and summarized.

Results: Ten cases were enrolled. The mean age was 59.7 years old and five were male. There were 3 cases for acute arterial thrombosis/emboli from atrial fibrillation, acute on chronic peripheral vascular disease, acute thrombosis of femoral stent with instant restenosis, 5 cases for acute iliofemoral deep vein thrombosis with May-Thurner’s syndrome, and 2 cases for acute mesenteric venous ischemia. There was no mortality. Technical success rate was 90%. There were 1 distal embolization, 3 hemoglobinuria, and 1 stent occlusion. For all the arterial lesions, stentings were needed. Two cases required additional thrombolysis due to incomplete thrombectomy and four cases needed iliac vein stenting for venous cases. There were 3 additional thrombolysis. The operating time for AngioJet was about 5 minutes while the mean procedure time was 116 minutes.

Conclusion: The rheolytic thrombectomy using ArgonNet showed good results in acute thrombosis in the peripheral lesions and can be considered as a useful alternative to open thrombectomy or thrombolysis.

TCTAP A-110

Impact Factors of Distal Stent Graft Induced New Entry in Type B Aortic Dissection

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Background: Stent graft-induced new entry (SINE) is a major complication after thoracic stent graft implantation in aortic dissection. This devastating complication may cause pseudoaneurysm with possible lethal rupture. Here, we retrospectively analysed our patients receiving stent graft for complicated type B aortic dissection and tried to find the impact factors of SINE.

Methods: From November 2006 to July 2012, 84 patients received thoracic stent graft implantation +/- cervical bypass due to complicated type B aortic dissection in our institute. 73 of them had regular post-operative follow up more than 1 year and then were included in this study. 49 of 73 patients received stent graft implantation as sequence with proximal deployment first and then distal deployment (proximal first group). The other 24 of 73 patients received stent graft implantation as sequence with distal deployment first and then proximal deployment (distal first group). 16 of 49 patients in proximal first group and 1/17 patients in distal first group developed distal SINE. We chose 5 items, including longitudinal, transverse and mean diameters, circumference and area of the true lumen as characters. And we measured these 5 items at proposed proximal and distal landing zones, and the distal stent graft before and after procedure. With these items, we calculated the taper ratio, proximal grafting and poststen grafting oversizing ratio and expansion mismatch ratio of distal true lumen to evaluate the possible impact factors of distal SINE.

Results: The incidence of distal SINE reached significant difference between group of proximal deployment first and distal deployment first (p=0.007). In each group, all the calculated ratios had no significant difference. When comparing between two groups, there was much significant difference in the present grafting and poststen grafting oversizing ratio in diameters, circumference and area. (p < 0.001)

Conclusion: We found that too much oversizing at distal landing zone should be avoided to decrease the possibility of distal SINE. Besides, thoracic stent graft implantation as sequence with distal deployment first and then proximal deployment should be executed if possible.
iliac arteries (mean stenosis for the LCIA 86.7%, for the RCIA 85%). In all of them after consult with the members of the team we performed contemporarily one stage PTA with stenting of both iliac arteries.

Results: As a procedural standard in our cathlab the diagnostic procedures were performed via right radial artery with 5F long (21 cm) radial introducer. The contrast injection was applied or through the pigtail catheter or through the MP catheter. Once established the extension of the disease and its severity and after complete agreement with the vascular surgeon the PTA was performed. The radial pigtail catheter was left for dial injection during the procedure. The puncture of the both femoral arteries was performed under X-ray control to reduce the risk of unsuccessful puncture attempts and with small contrast injections from the pigtail catheter for better visualization of the femoral artery. In the both femoral arteries a 6F introducer was placed. Then in case of non total occlusions two long 0.35” wires were placed in the aorta. In the case of the two patients with total bilateral ostial occlusion of the both common iliac arteries first we placed a 5F introducer and with the Terumo 0.35” wire with the support of 5F JR catheter we performed reopening of the artery. Pre-dilatation was performed in 4 LCIA and in 5 RCIA. After achieving a sufficient lumen to pass through the lesion with the stent and under contrast injection from the radial pigtail catheter control contemporary in one moment the two stents were placed (Fig.1.b). In 4 patients the stents were balloon expandable ones. Post-dilatation kissing balloon for symmetric expansion of the stents was performed in all patients. The success rate was 100% and no complication was observed (Fig.1.c). No access site problems were noted. All patients were discharged with significant clinical improvement and at the one month follow-up all were free from claudication.

Conclusion: According to our experience bilateral ostial stenosis or occlusions of common iliac arteries can be consider a real bifurcation lesion and thus must be treated in one stage procedure with contemporary placing of both iliac stents. This will give an anatomic and homogeneous dilatation and apposition of the stents. Moreover the patients satisfaction from one stage procedure and immediate resolution of their problem is another issue in favour of one stage procedure.

TCTAP A-112
Comparison of 12-month Clinical Outcomes of Infrapopliteal Balloon Angioplasty Alone Versus Balloon Angioplasty with Provisional Stenting in Patients with Critical Limb Ischemia
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Background: The restenosis rate after infrapopliteal balloon angioplasty (BA) may be as high as 70% at 3 to 6 months. However, the efficacy of BA alone compared with BA with provisional stenting for the reduction of restenosis with critical limb ischemia (CLI) has not been adequately investigated yet. We compared 12-month clinical outcomes between two different strategies in CLI patients undergoing infrapopliteal intervention.

Methods: A total 180 consecutive patients who underwent infrapopliteal BA for CLI from August 2004 to November 2012 were enrolled for this study. We compared the clinical outcomes of CLI patients who underwent infrapopliteal BA alone to those who underwent infrapopliteal BA with provisional stenting at 12-months.

Results: The baseline clinical and procedural characteristics are well balanced between the two groups except claudication, which was higher in the provisional stenting group (Table 1). At 12 months, there was no difference in the incidence of mortality, target lesion revascularization (TLR), target extremity revascularization (TER) and limb salvage rate in both groups (Table 2).

Conclusion: Infrapopliteal BA alone was not inferior to infrapopliteal BA with provisional stenting in reducing clinical events in this small number of patients with CLI in Korean populations at 12-month clinical follow-up. Nevertheless, there are still no definite data and randomized trial with larger study population will be needed to make the final conclusion.

TCTAP A-113
The Association of Serum Ferritin and 1-Year Mortality in Patients with Critical Limb Ischemia
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Background: Several studies have examined the association of biomarkers of iron metabolism with measures of peripheral arterial disease. Few studies, however, have evaluated the association between biomarkers of iron metabolism and mortality in critical limb ischemia (CLI).

Methods: Serum ferritin, iron (Fe), and total iron binding capacity (TIBC) were measured in 82 patients (pts) with CLI underwent endovascular therapy (EVT). The all enrolled pts had the below-the-knee (BTK) lesions and EVT was successfully performed. The patients with in-hospital mortality were excluded. The 66 of 82 patients assessed 1-year clinical follow-up (survivor group=57, non-survivor group=9).

Results: There were no significant differences in age, gender, hypertension, cerebrovascular accident, myocardial infarction, current smoking, dyslipidemia, chronic kidney disease between the survivor and non-survivor groups. As shown in the table, the survivor group had the higher serum ferritin level than non-survivor. However, there were no significant differences in Fe and TIBC in both groups. When ferritin was classified into high and low groups, the high ferritin group had more 1-year mortality than the low ferritin group (Table). In our study, increased serum ferritin level was associated with higher 1-year mortality in CLI pts who underwent successful EVT.

Table. The association of 12-month mortality and Ferritin

<table>
<thead>
<tr>
<th>Variable, n (%)</th>
<th>Survivor (n=57)</th>
<th>Non-survivor (n=9)</th>
<th>P value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferritin</td>
<td>235.7 ±186.2</td>
<td>708.12±247.38</td>
<td>0.016</td>
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<tr>
<td>TIBC</td>
<td>219.8±60.48</td>
<td>190.3±47.27</td>
<td>0.963</td>
</tr>
<tr>
<td>Fe</td>
<td>47.4±23.50</td>
<td>45.0±16.24</td>
<td>0.214</td>
</tr>
</tbody>
</table>

* P value, Mann-Whitney U test

P value* | Twelve-month mortality

<table>
<thead>
<tr>
<th>Variable, n (%)</th>
<th>High ferritin (n=30)</th>
<th>Low ferritin group (n=36)</th>
<th>P value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twelve-month Mortality</td>
<td>7 (23.3)</td>
<td>2 (5.6)</td>
<td>0.036</td>
</tr>
</tbody>
</table>

* P value, χ2 test