Twelve-month Angiographic and Clinical Outcomes Following Infrapopliteal Artery Intervention in Patients with Critical Limb Ischemia

Background: Prognosis of endovascular therapy (EVT) for isolated infrapopliteal artery disease has not been adequately studied. We investigated the mid-term outcomes following EVT for isolated infrapopliteal lesions attributable to critical limb ischemia (CLI) in Korean population.

Methods: A total 298 consecutive CLI patients (pts) were treated by EVT from August 2004 to October 2012. Out of 298 pts, a total 176 pts (214 limbs, 341 lesions) underwent infrapopliteal intervention with balloon angioplasty alone and/or provisional stenting. Procedural success, periprocedural complications and clinical outcomes up to 12-months were analyzed.

Results: The baseline clinical characteristics showed that the mean age was 67.2 ± 11.0 years old and diabetes was in 89.2%. Ipsilateral lesion was in 70.1% but bilateral lesions were in 29.9%. Distant lesion was in 63.4% and CTO lesion was in 24.2%. A total 97 pts (55.1%) had chronic total occlusion (CTO) lesions and mean lesion length was 47.0 ± 44.6 mm. Overall procedural success was achieved in 94 pts (88%). Non-critical periprocedural complications were developed including 88 dissections (50%), 4 abrupt closure (2.2%), 8 no reflow (4.5%), 4 acute thrombosis (2.2%) and 15 perforation (8.5%). At 12 months, primary patency was 37.7%, assisted primary patency was 42.6%, secondary patency 72.1%, repeat PTA 12.5%, limb salvage rate 93.9% and major amputation 6.1% were occurred.

Conclusion: Infrapopliteal EVT with balloon angioplasty alone and/or provisional stenting in a series of Korean CLI pts showed excellent mid-term patency and higher rate of limb salvage.

Inferior Mesenteric Artery Embolization Repair with a Bifurcated Stent Graft with Internal Iliac Artery Coil Embolization

Background: Endovascular aneurysm repair (EVAR) has become a first-line therapy for treating abdominal aortic aneurysms (AAAs). The endovascular treatment for common iliac artery aneurysms (CIAAs) must consist of two parts: first, the branching vessels of the internal iliac artery (IIA) are embolized using coils, and second, a covered stent is placed in the common iliac artery (CIA) and the external iliac artery (EIA) covering the ostium of the IIA. In some selected patients with CIAAs might be treated with a tubed stent graft, and preserve the unilateral or bilateral IIA circulation; however, most patients with bilateral CIAAs have to be managed with bifurcated stent graft and bilateral IIA embolization. Bilateral IIA and internal mesenteric artery (IMA) interruption embolization carries risks of colonic ischemia, which might be fatal complication of EVAR.

Methods: From February 2013 to November 2013, a total of 3 patients with bilateral CIAAs have been treated by EVAR using bifurcated stent graft with bilateral IIA embolization. All patients were male. The median age at the time of the surgical procedures was 80 years (range, 78 – 84 years). All patients underwent EVAR under general anesthesia. Bilateral femoral arterial access was obtained through bilateral femoral cut-down in the usual manner, and guidewires were placed in the aorta. First, both side of IIA were embolized with coil. Second, unilateral branchial artery was punctured, and a 4-Fr guiding sheath was placed to cannulate to the IMA. Then, the main body of the bifurcated stent graft, which length was 60 mm (Endologic Powerlink® IntuiTrak, Endologix, Inc. Irvine, CA, USA) was inserted into the femoral access. After the stent graft deployment, a 4 – 5mm sized bare metal stent (Express SD®; Boston Scientific, Cork, Ireland) was inserted into the IMA through the brachial access in order to achieve bail out. The bare stent was partially positioned in the aorta, and the main body and the bare stent were simultaneously dilated. Both EIAs required iliac extenders (Endologic Powerlink®, Endologix, Inc. Irvine, CA, USA) to cover the IIA orifice.

Results: The median operative time was 243 minutes (range: 218 – 295 minutes). All patient’s postoperative course were uneventful without the development of colonic, spinal and other pelvic ischemia. During the follow-up period (median 6 months; range 5 – 9 months), enhanced computed tomography showed a patent IMA without enhancement of either CIAA in all treated cases. There was no postoperative complications, including colonic ischemia during the follow-up period.

Conclusion: Even though some endovascular surgeons prefer bypass procedures to maintain IIA circulation, there are few data to support a direct association between the preservation of IIA circulation and colonic ischemia. This endovascular procedure has been attempted in a good proportion of patients for preventing postoperative ischemic colitis in EVAR patients accompanied with bilateral IIA embolization.

Impact of Coronary Artery Fixed Lesion on 3-years Clinical Outcomes in Vasoactive Angina Patients with Myocardial Bridge

Background: It is not known whether the presence of angiographic fixed coronary lesion (FLC) can negatively impact on long-term major clinical outcomes in vasodilator angina patients (pts) with myocardial bridge (MB).

Methods: A total 5,882 patients (pts) underwent coronary angiography with acetylcholine (AcCh) provocation test from Nov 2004 to Oct 2010. Among them, total 563 pts who had MB and documented significant coronary artery spasm (CAS) by AcCh provocation test were enrolled. Study populations were categorized into two groups; the fixed coronary lesion (FLC) group (n=216) and the non-FLC group (n=347). Cumulative major clinical outcomes were compared between the two groups up to 3 years.

Results: Baseline characteristics were similar between the two groups except the incidence of elderly, hypertension, diabetes, and dyslipidemia were higher in the FLC group. In univariate analysis, only the composite end-point consisted of cardiac death, de novo percutaneous coronary intervention (PCI), myocardial infarction (MI), and cerebrovascular accident (CVA) was higher in FLC group (Table). However, in multivariate regression analysis, the incidences of cardiac death, PCI, MI, CVA, recurrent chest pain, and other composite end-points were similar between the two groups up to 3 years.

Conclusion: In our study, the presence of angiographic fixed coronary lesion (FLC) with MB was not a predictor of adverse long-term clinical outcomes.

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