

ENDOVASCULAR POSTERS MONDAY

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TCT-679

Intravascular ultrasound for stent graft sizing in emergency thoracic endovascular aortic repair

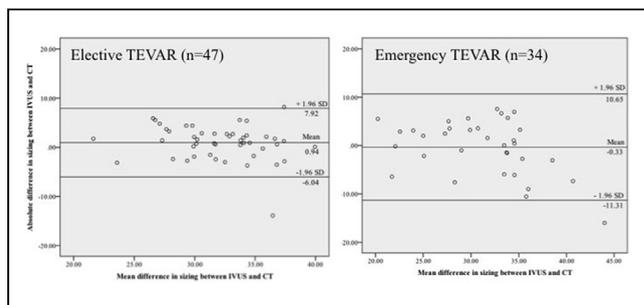


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BACKGROUND Computed tomography (CT) for emergency thoracic endovascular aortic repair (TEVAR) in patients with acute aortic syndrome (AAS) often yields poor quality images for optimal stent graft sizing. Intravascular ultrasound (IVUS) provides an accurate measurement of the aortic diameter (AD) of the landing zones for the aortic stent graft. Thus, we compared CT and IVUS for TEVAR.

METHODS In a single-center, prospective study we evaluated patients with AAS undergoing both CT and IVUS before emergency or elective TEVAR. We assessed the AD at the level of the left subclavian artery (LSA) for both CT and IVUS before stent graft implantation. Congruence between CT and IVUS aortic diameter measurements were assessed using a linear regression analysis and Bland-Altman analysis.

RESULTS We assessed 81 patients with TEVAR. The mean age of patients undergoing elective TEVAR (n=47) was 67.3 ± 10.5 years and that of those undergoing emergency TEVAR (n=34; p=0.03) was 59.2 ± 19.5 years. The measured AD of the proximal landing zone did not differ significantly (Tab) and showed high congruency between the two methods (Fig).



	Elective n=47	Emergency n=34	p-value
IVUS (mm), mean ± SD	32.5 ± 3.9	31.0 ± 5.0	0.76
CTA (mm), mean ± SD	31.5 ± 4.6	31.4 ± 7.2	0.90

CONCLUSION Although, CT is a state-of-the-art technique for stent graft sizing in TEVAR, IVUS is a valuable alternative approach during emergency TEVAR when further diagnostics would be too time consuming.

CATEGORIES IMAGING: Imaging: Intravascular

TCT-680

Transplant Renal Artery Intervention: Analysis of 15-year Single Center Experience



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BACKGROUND The transplant renal artery stenosis (TRAS) is still the main limitation after kidney transplant leading to hypertension, worsening renal function and finally graft loss. Percutaneous transluminal angioplasty/stent(PTA/stent) is an attractive treatment option in patients whom diagnosed with TRAS. We studied to assess clinical presentation and procedural success rate after PTA/stent in TRAS patients.

METHODS This is a single center retrospective cohort of patients whom diagnosed with TRAS and have been treated with PTA/stent between January 2001 and October 2016. The procedural success after PTA/stent was pre-specified as 1. renal outcome (reduction of serum creatinine > 15%) and 2. blood pressure outcome (either 2.1 reduction of mean arterial pressure (MAP) > 15% without decreasing of anti-hypertensive medication or 2.2 no reduction or reduction of MAP < 15% with decreasing of anti-hypertensive medication).

RESULTS Forty-eight TRAS were identified from 861 patients whom had kidney transplant. Mean time from transplantation to TRAS diagnosis was 11.9 months. Majority of them (97.9%) used the end-to-side anastomosis technique. Anastomosis (60%) is most common site of stenosis followed by post-anastomosis (20.7%). The presenting symptoms were worsening renal function (62.5%), accelerated hypertension (12.5%), combined symptoms (18.8%) and pulmonary edema (6.3%). Procedural success in term of renal outcome was 52% within 1 month, 70.8% within 6 months and 64.5% within 1 year. Procedural success in term of BP outcome was 77% within 1 month, 85% within 6 months and 75% within 1 year. Graft survival after PTA was 67% at 1 year, 52% at 2 years.

CONCLUSION Clinical presentation and procedural success rate after PTA/stent in TRAS patients were identified. PTA/stent has an acceptable 1-year renal and BP reduction outcome. But long-term survival of the TRAS graft after PTA/stent is still limited.

CATEGORIES ENDOVASCULAR: Peripheral Vascular Disease and Intervention

TCT-681

Retrograde popliteal access interventions for chronic total superficial femoral artery occlusions



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BACKGROUND Vascular intervention of superficial femoral artery (SFA) chronic total occlusions (CTO) is sometimes unsuccessful when the CTO cannot be crossed antegradely via contralateral or ipsilateral femoral approach because the proximal CTO cap is fibrocalcific or a CTO “nubbin” is absent.

METHODS We performed popliteal access to cross SFA CTOs retrogradely in 33 cases previously unsuccessfully attempted antegradely from contralateral/ipsilateral femoral approach. The popliteal artery was accessed using micropuncture needle with either fluoroscopic (n=27) or ultrasonographic guidance (n=6) with patient in a prone position. The distal cap of the SFA CTO was crossed with the Terumo guidewire and Trailblazer catheter, often using a loop in the Terumo guidewire to create a dissection plane. Reentry into the true lumen was confirmed by easy torquability of the Terumo guidewire in the proximal femoral, iliac arteries or the aorta after negotiating the entire length of the CTO. A 4 or 5 mm balloon was used to dilate the entire length of the CTO. Angiography was carried out to assess the result and stenting reserved for bailout in the event of slow flow or flow limiting dissection. Followup with arterial duplex ultrasonography or CT angiography was done in 2 weeks to evaluate vessel patency and repeated at 4 months to evaluate for restenosis.

RESULTS In 28 cases brisk antegrade flow was reestablished and no additional intervention was necessary after plain balloon angioplasty. In 2 cases stenting of the focal dissection was carried out and in 3 cases the occlusion could not be crossed. Vessel were patent in 26 cases at 2 weeks imaging. Reocclusion in the 4 cases was reopened

again via antegrade contralateral femoral access. All patients with successful intervention had relief of their claudication symptoms and/or rapid healing of the limb ulcers. Restenosis occurred in 5 cases by 4 months necessitating repeat intervention with Silverhawk atherectomy (n=4) or drug coated balloon (n=1).

CONCLUSION Retrograde popliteal approach is successful in about 90% of cases of chronic SFA total occlusion interventions when antegrade crossing of the CTO from contralateral or ipsilateral femoral approach is unsuccessful.

CATEGORIES ENDOVASCULAR: Peripheral Vascular Disease and Intervention

TCT-682

Single centre experience of 260 consecutive case of retrograde recanalizations in peripheral arterial disease



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BACKGROUND Retrograde recanalizations of femoropopliteal or below the knee occlusive disease potentially increase acute technical success rates in complex cases. Little is known so far regarding safety and acute technical success rates.

METHODS Between April 2014 and June 2017 we performed a total of 265 consecutive cases of retrograde recanalizations of either femoropopliteal and/or tibial occlusive disease. Retrograde vascular access was attempted via angiographic guidance in all cases.

RESULTS Retrograde access could be achieved in all but one case. Recanalization of the occluded artery and successful adjunctive therapy could be performed in 91.7% of cases. Predictors of failure to recanalize the occlude segment were severe calcification, below the knee occlusions, and severe calcification. Procedure related in-hospital complications occurred in 3/265 patients (0.11%).

CONCLUSION Retrograde recanalizations can safely performed with high technical success and low complication rates in femoropopliteal and tibial arterial occlusive disease.

CATEGORIES ENDOVASCULAR: Peripheral Vascular Disease and Intervention

TCT-683

Bivalirudin versus Heparin in Patients Undergoing Percutaneous Peripheral Interventions: A Systematic Review and Meta-analysis



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BACKGROUND Bivalirudin may be an effective anticoagulation alternative to heparin as anticoagulant agent in percutaneous peripheral interventions (PPI). We aimed to compare safety and efficacy of bivalirudin versus heparin as the procedural anticoagulant agent in patients undergoing PPI.

METHODS We conducted an electronic database search of all published data. The primary endpoint was all-cause mortality. Secondary outcomes were stroke, myocardial infarction, all-bleeding, major bleeding, minor bleeding, intracranial bleeding, blood transfusion, amputations, access site complications, and length of stay. Odds ratios (OR), difference in means (DM), and 95% confidence intervals (CI) computed using the Mantel-Haenszel method. Fixed-effect model was used; if heterogeneity (I²)>25 effects were obtained using a random model.

RESULTS Eleven studies (n=36,773 patients) were included in the analysis. There was a significant difference favoring bivalirudin over

heparin for all-cause mortality (OR 0.47, 95% CI 0.24-0.93), stroke (OR 0.73, 95% CI 0.56-0.96), all-bleeding (OR 0.59 95% CI 0.46-0.76), major bleeding (OR 0.58, 95% CI 0.41-0.80), minor bleeding (OR 0.63 95% CI 0.43-0.92), and amputations (OR 0.29, 95% CI 0.22-0.38). There was no significant difference in myocardial infarction (OR 0.72, 95% CI 0.38-1.36), intracranial bleeding (OR 0.76, 95% CI 0.20-2.03), blood transfusion (OR 0.72 95% CI 0.34-1.52), access site complication (OR 0.75, 95% CI 0.54-1.05), and length of stay (DM -0.15, 95% CI -0.86-0.56).

CONCLUSION Our meta-analysis suggests that use of bivalirudin compared to heparin for PPI is associated with lower all-cause mortality, bleeding, stroke and amputations. Further large randomized trials are needed to confirm current results.

CATEGORIES ENDOVASCULAR: Peripheral Vascular Disease and Intervention

TCT-684

Bronchial Artery Embolization: An uncommon necessity: A Single Center Experience



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BACKGROUND Bronchial artery embolization (BAE) is an emergency lifesaving procedure performed for submassive to massive hemoptysis. SE Asia has a high tuberculosis prevalence and many patients present with sub massive to massive hemoptysis. Given the inconsistent procedural success, unawareness about the procedure, lack of technical expertise and resources, the procedure is not commonly performed.

METHODS We analyzed consecutive patients that underwent BAE in our institution between January 2016 and January 2017. The patients were admitted to the Respiratory Intensive Care unit in our institution and met criteria for the procedure after a multidisciplinary consensus that included the critical care physician, respiratory specialist and the interventional physician performing the procedure. Patients were subject to the routine blood work, chest X-ray, and CT scan prior to the procedure. When possible, a bronchoscopy was performed prior to the procedure to help localize the location of hemoptysis. Procedural success was defined by successful embolization of all culprit vessels and collaterals to the area. Clinical success was defined by successful cessation of hemoptysis.

RESULTS In a 12 month period, BAE was performed in 29 patients. Average follow up was available for 6 +/- 5 months. 5F Simmons, Cobra or Judkins-Right catheters were most commonly used to engage the culprit vessels. The most common etiology for hemoptysis was Tuberculosis (65%) followed by Bronchiectasis (13.7%) and Aspergilloma (13.7%). A total of 78 vessels were embolized with a >95% procedural and clinical success. 80% (23/29) of patients were discharged home. Pertinent interventional details of the study are presented in the table.

Average vessels treated per patient	2.69
Total number of vessels treated	78
Bronchial Arteries	39
Intercostal	20
Systemic collaterals (Subclavian and non subclavian)	19
PVA Particles (300 micrometer) for embolization (Cook Medical, Bloomington, IN)	89% (70 vessels)
Microcoils for embolization (Cook Medical, Bloomington, IN)	11% (8 vessels)
Recurrence of Hemoptysis	1/29 (3.5%)
Procedure related major complication	0%

CONCLUSION In patients with submassive to massive hemoptysis, BAE is a safe and effective procedure with a very high procedural success. For best results, embolization of all vessels to the area should be aggressively performed.

CATEGORIES ENDOVASCULAR: Peripheral Vascular Disease and Intervention