

**Presentation
Number:** KC28

**Publishing
Title:** Retrograde Superior Mesenteric Artery Stenting for the Treatment of Acute-on-Chronic Mesenteric Ischemia: A Case series

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**Abstract
Body:**

Objective: Acute mesenteric ischemia is a life threatening vascular emergency associated with a very high mortality rate. The current standard of care for acute mesenteric artery thrombosis is mesenteric arterial bypass grafting, but the perioperative mortality has been reported to be as high as 45%. A hybrid technique that employs an exploratory laparotomy, canalization of the distal superior mesenteric artery (SMA), and stent deployment across the atherosclerotic lesion was first described in 2004 for the treatment of acute on chronic mesenteric ischemia. We report 5 cases where acute on chronic mesenteric ischemia was treated with exploratory laparotomy and retrograde SMA stent placement. The purpose of this study is to describe this novel technique and to present our clinical outcomes, with regard to mortality, re-operation rate, and symptom resolution.

Methods: This is a retrospective review of 5 cases of acute on chronic mesenteric ischemia that required emergent revascularization. Each patient in the study had a diagnosis of chronic mesenteric ischemia based on imaging that revealed atherosclerosis of the SMA, food intolerance or aversion, and a history of weight loss. In each case, a balloon mounted covered stent (iCAST™, Atrium Medical Corp.) was directly placed in the SMA in a retrograde fashion during exploratory laparotomy. A completion angiogram was performed in each case to ensure patency. All operations were performed at a single institution between 20011-2013.

Results: The mean age of the patients in the study was 83 ± 8.6 with an average APACHE II score of 14.5 ± 2.6 upon presentation. Of the 5 patients reviewed, 3 had necrotic bowel necessitating resection, and 4 patients required ICU admissions. All attempts at SMA stenting were successful without technical complications as verified by completion angiogram. Overall, 4 of 5 patients survived the hospitalization and were discharged tolerating PO diet without symptoms. Re-interventions were required in 2 cases, one patient died of overwhelming sepsis within 24hrs of presentation.

Conclusions: The hybrid technique of exploratory laparotomy and retrograde SMA stenting is a viable revascularization option for the treatment of acute on chronic mesenteric ischemia. The preliminary results in this study for this novel technique have been promising with regards to patient mortality, when compared to that of mesenteric arterial bypass surgery.

**Presentation
Number:** KC29

**Publishing
Title:** En Bloc Resection of Pancoast Tumor with Adjuvant Aortic Endograft and Chemoradiation

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En Bloc Resection of Pancoast Tumor with Adjuvant Aortic Endograft and Chemoradiation
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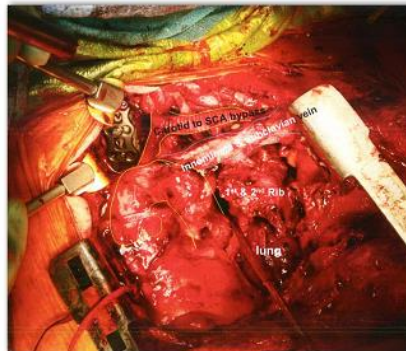
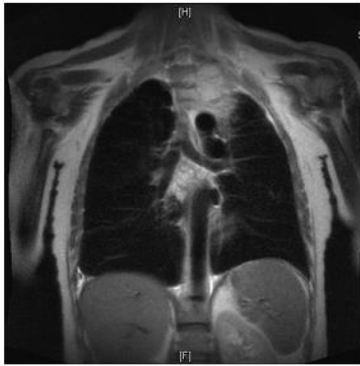
Abstract

Objectives: Pancoast tumors frequently require a multidisciplinary approach to therapy and are still associated with high morbidity and mortality. Due to their sensitive anatomic location, complex resections and chemoradiation regimens are typically required for treatment. Those with signs of aortic invasion pose an even greater challenge, given the added risks of cardiopulmonary bypass for aortic resection and interposition. Placement of an aortic endograft can facilitate resection if the tumor is in close proximity to or is invading the aorta. Prophylactic endografting to prevent radiation associated aortic rupture has also been described.

Methods/Results: We report the case of a 60 year old female with a left upper lobe undifferentiated non-small cell carcinoma encasing the subclavian artery with thoracic aorta and bony invasion (Figure left). Following carotid-subclavian bypass, resection of the lung with en bloc resection of the affected ribs and vertebral bodies was achieved (Figure right). The aorta was prophylactically reinforced with a Gore TAG thoracic endograft prior to adjuvant chemoradiation. The patient remains disease free at over five years follow-up after completing her treatment course.

**Abstract
Body:**

Conclusion: Endovascular stenting with subsequent chemoradiation may prove to be a viable alternative to palliation or open operative management and prevention of aortic injury during tumor resection and/or adjuvant therapy in select patients with aortic involvement.



Presentation Number: KC30
Publishing Title: WITHDRAWN

Presentation Number: KC31

Publishing Title: Flush Superficial Femoral Artery (SFA) Occlusion does not alter stent patency but is associated with increased Profunda Femoris Artery (PFA) interventions

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Abstract Body:

INTRODUCTION: Inability to engage origin of the SFA makes endovascular intervention difficult to treat flush SFA occlusions. If successful, stenting could compromise flow into the PFA. We report our experience with endovascular treatment of flush SFA occlusions.

METHODS: We retrospectively reviewed all SFA endovascular interventions from 2008 to 2011. Stent patency of flush SFA occlusions was compared to non-flush SFA occlusions. We examined whether stenting of flush SFA occlusions was associated with increased PFA interventions.

RESULTS: We identified 164 SFA interventions, 31 cases were flush occlusions (18.9%). Successful stenting was performed in 24 cases (77.4%). Indication for surgery was claudication in most cases (90.3%). There was no significant difference in the incidence of diabetes, hypertension, cardiac disease, and smoking between the 2 groups. Primary, primary-assisted, and secondary patency is not statistically different between the 2 groups (see Kaplan Meier curves). Seven patients (29.2 %) required PFA intervention during a 3 year follow-up. Two were managed intraoperatively at the time of the SFA stenting due to complete PFA coverage. One with balloon angioplasty of the SFA stent struts and the other by stenting the PFA origin through the struts. Five cases required patch angioplasty into the PFA, two with partial SFA stent removal. Indication for intervention was progressive worsening of velocities in the PFA origin. In 3 cases it was due to neointimal hyperplasia from the SFA stent and not due to stent coverage of the PFA (See figure). These interventions were performed within 6 months of the SFA stenting in 3 cases and within one year in the remaining 2 cases.

CONCLUSION: Flush SFA occlusion can be treated with angioplasty and stenting with comparable patency rates to non-flush SFA occlusion. Due to the high rate of PFA intervention, we offer surgical bypass to treat flush SFA occlusions at our institution.

**Presentation
Number:** KC32

**Publishing
Title:** Selective Endovascular-first approach for critical limb ischemia carries minimal cost of worsening long-term outcomes

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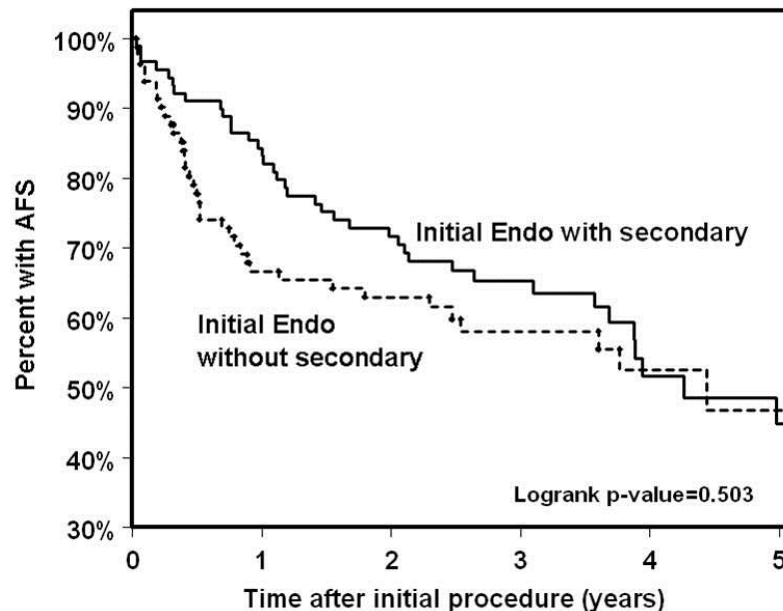
OBJECTIVES: Treatment failures are common in patients with critical limb ischemia (CLI) and are associated with increased risk of limb loss. Endovascular-first approach is associated with worse overall limb salvage rates presumably because subsequent open bypass options are compromised. To evaluate the effect of endo-first interventions, we examined the late outcomes of patients with failed endovascular attempts undergoing secondary interventions.

METHODS: We identified a cohort of 302 patients with CLI, from March 2007 to December 2010. Endo-first was selected if: 1) the patient had short (5-7cm occlusions or stenoses in crural vessels) 2) the disease in superficial femoral artery disease was limited to TASC II A, B or C and 3) no impending limb loss. Endo-first was performed in 187. Failures were defined as recurrent clinical signs and symptoms of CLI.

RESULTS: Secondary procedures (either endo or open) were less common after endo-first (endo 102 of 187, 55% vs. open 71 of 105, 68%; $p=0.029$). Secondary revascularization was carried out using endovascular (57 of 102), open (38 of 102) and hybrid interventions (7 of 102). The 5-year limb salvage rate for endo-first with a secondary intervention was 83% and amputation-free survival (AFS) was 45%, and was no different for those not requiring a secondary intervention (Figure 1). For failures requiring open revascularization, the limb salvage and AFS rates at five years were 87% and 59%, respectively. For those treated using endovascular revascularization, the limb salvage and AFS rates at five years were 82% and 35%, respectively

CONCLUSIONS: Failed initial endovascular revascularizations for CLI requiring secondary interventions (either endovascular or open) have favorable limb salvage rates and AFS. In patients with CLI undergoing a selective endovascular-first approach for revascularization, failure does not confer poor prognosis in the long-term in properly selected patients. Furthermore, open reconstruction options may not be compromised after an endovascular intervention in appropriately selected patients.

**Abstract
Body:**



**Presentation
Number:** KC33

**Publishing
Title:** Management of Non-infected Prosthetic Aorto-iliac Bypass Failures Using Femoral Vein

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Objectives: Femoral and popliteal vein as a conduit to treat infected aortic pathologies has been described extensively. We examined the outcomes after using deep vein as a conduit for the salvage of failed prosthetic bypasses in non-infectious cases.

Methods: Patients undergoing procedures using femoral vein as conduit at the University of Arkansas for Medical Sciences between January 2005 and July 2013 were reviewed (n = 113). Patients were excluded if the reconstruction was for infectious etiologies (n=70) or for non-aorto-iliac indications (n=34).

**Abstract
Body:**

Results: Nine patients had failed aortobifemoral (8) or iliofemoral bypass (1). Indications included rest pain (8) and short distance claudication (1). Reconstruction was with aortobifemoral bypass in 4 patients, aortofemoral bypass in 2 patients, aortoiliac bypass in 1 patient, and iliopropunda bypass in 2 patients. Mean follow up was 24 months. There were no major postoperative complications. 2/9 patients developed symptoms secondary to deep vein harvest (swelling/dermatitis). Average ankle brachial Index (ABI) improved from 0.32 to 0.71 (p = 0.002). Limb salvage was 100%. Only one limb of an aortobifemoral bypass occluded at 31 months, but did not undergo re-intervention. 4/9 patients underwent subsequent open or endovascular interventions.

Conclusions: Despite frequent secondary interventions (44%) and venous hypertension syndromes (22%), deep vein offers good patency and excellent limb salvage after failed prosthetic aorto-iliac bypasses.

**Presentation
Number:** KC34

**Publishing
Title:** Ultrasonic accelerated thrombolysis of IVC thrombosis

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**Abstract
Body:**

OBJECTIVES: Inferior vena cava(IVC) thrombosis remains rare with an incidence of 0.4%. Successful ultrasonic accelerated thrombolysis, using the EkoSonic Endovascular System(EKOS® Corporation), has been previously reported in patients with iliac vein and lower extremity deep venous thrombosis(DVT). We describe our initial experience with ultrasonic accelerated thrombolysis of IVC thrombosis.

METHODS: All patients diagnosed with symptomatic IVC thrombosis who were treated with ultrasonic accelerated thrombolysis from January 2012 to August 2013 were assessed. Patient data regarding clinical presentation,thromboembolic risk factors,pertinent imaging,treatment pathway and clinical outcome were recorded.

RESULTS: Seven patients (5 males,mean age 58.1 years) presented with lower extremity DVT. Four patients had a history of neoplastic disease and two were current smokers. Four patients had a history of previous DVT and six patients a history of pulmonary emboli. All seven patients were previously anticoagulated and had IVC filters in-situ. Pro-thrombotic hematological analyses were negative for all patients. Ultrasound duplex imaging identified proximal lower extremity thrombus in four patients while cross-sectional imaging confirmed thrombus extending from the iliac veins into the IVC in all patients. All patients were initially treated with limb elevation, compression hosiery combined with intravenous therapeutic unfractionated heparin infusions. The indication for thrombolytic therapy was continued significant symptomatology in all patients. Following venography and confirmation of clot burden in the IVC, the thrombus was crossed and bilateral EKOS catheters were placed extending into the suprarenal IVC. EkoSonic treatment was commenced with combined infusions of 0.5mg tissue plasminogen activator and 35mls of normal saline coolant via the EKOS catheters and 500IU of heparin via the 7-Fr sheath per hour to each limb separately.After twenty-four hours,repeat venography was satisfactory in one patient. The remaining six patients required mechanical thrombectomy using the Angiojet® system(Possis Medical), and balloon angioplasty if necessary, which resulted in satisfactory flow in five patients. The remaining patient required an additional twenty-four hour EKOS infusion and further mechanical thrombectomy. All patients are currently well and remain anticoagulated(warfarin=6,rivaroxaban=1) with improvement in lower extremity symptomatology and no recurrence of IVC thrombosis (mean follow-up 7.6,range 1-20 months).

CONCLUSIONS: This is the first reported series of ultrasonic accelerated thrombolysis for IVC thrombosis in patients with large IVC thrombus burden and significant clinical signs where successful clot dissolution and satisfactory venous flow without significant patient distress or complications.