

**Conclusions:** NEL revascularization of chronic mesenteric ischemia has a higher mortality, longer length of stay, and associated health care costs as well as higher rate of bowel resection. Mortality for both NEL and EL revascularizations has reduced over time. The rate of mortality has decreased more dramatically for EL revascularization. These findings may point to benefit from EL revascularization for CMI, but longitudinal studies are needed to see if this benefit extends beyond the index hospitalization.

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IP243.

**Outcomes of Celiac Decompression in a Cohort of Patients With Median Arcuate Ligament Syndrome**



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**Objectives:** Median arcuate ligament syndrome (MALS) is a rare clinical entity characterized by postprandial abdominal pain, nausea, vomiting, and weight loss. Timely diagnosis and optimal management remain challenging in contemporary vascular practice, and treatment delays are often the norm. The purpose of our study was to review our experience with celiac decompression for MALS.

**Methods:** All patients undergoing celiac decompression for MALS between July 2013 and December 2016 were retrospectively reviewed. Patient demographics, clinical data, and outcomes (length of stay, morbidity and clinical response) were collected. Clinical response was assessed during follow-up visits using a quality of life questionnaire. At our institution, a dynamic computed tomography angiography (CTA) protocol with inspiratory and expiratory pressure gradient measurements was developed to assess these patients.

**Results:** Over the study period, 25 patients (80% female) underwent celiac decompression for MALS (one laparoscopically). Four patients underwent aortoceliac bypass in addition to celiac decompression. The mean age was 47.4 ± 20.1 years. The mean body mass index was 25.5 ± 7.5 kg/m<sup>2</sup>, and mean weight loss at presentation was 20.3 ± 36.2 pounds. The mean time from symptoms to diagnosis was 28.3 ± 30.1 months. Diagnostic imaging used prior to referral to us most commonly involved mesenteric ultrasound (16%), magnetic resonance angiography (4%), angiography (8%), and nondynamic CTA (64%). The mean degree of celiac artery stenosis on dynamic CTA was 73.7% ± 23.8%. Seventeen patients (68%) had celiac plexus block prior to definitive intervention. No in-hospital morbidity or mortality occurred in this cohort. Follow-up data were available for all patients for a median of 4.3 months (range, 1-90 months). The freedom from symptoms was 92%, and freedom from reintervention was 100%. All patients reported excellent or good response to surgery with improvements in their quality of life and weight gain.

**Conclusions:** An institutional protocol of dynamic CTA has greatly expedited diagnosis and treatment plans for patients with suspected MALS. In this longitudinal evaluation, celiac decompression, with or without bypass, was associated with symptomatic relief and improvements in quality of life. Further prospective evaluation of these results is warranted.

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IP245.

**Implementation of a Standardized Audit-Feedback-Education Quality Assurance Cycle Improves Venous Duplex Ultrasound Protocol Compliance in a Vascular Laboratory**



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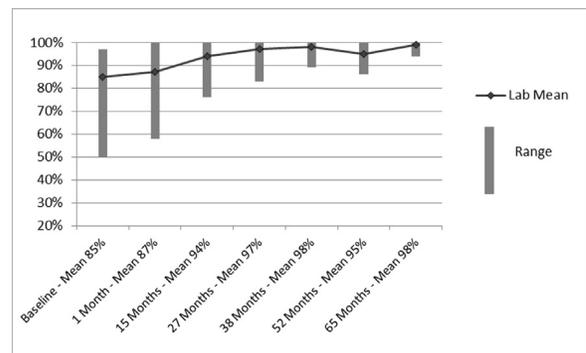
**Objectives:** Venous duplex ultrasound (VDU) imaging is often the sole imaging modality used to diagnose deep vein thrombosis and guide critical clinical decision making. However, VDU imaging is highly user dependent, with considerable inter- and intra-sonographer variation, making quality assurance (QA) imperative. We hypothesized that a standardized audit-feedback-education QA cycle, based on objective scoring criteria, reduces variation as measured by compliance with a written VDU protocol. Our goal was to achieve at least 90% VDU protocol compliance at the laboratory and sonographer levels.

**Methods:** At the UMass Memorial Health Care vascular laboratory, we implemented a standardized audit-feedback-education QA cycle that addressed four domains: minimum views, documentation, image optimization, and scanning time. Each domain was scored according to predefined objective criteria and then weighted in order to calculate a protocol compliance index (PCI) for each sonographer. At baseline, three VDUs per sonographer were scored. After implementation, three to five VDUs per sonographer were scored at 1 month, then at 15, 27, 38, 52, and 65 months (Table). Each standardized audit-feedback-education QA cycle included structured 1-hour sessions between the lead technologist and each sonographer to review scores and protocol deviations. Baseline and postimplementation scores were compared at the laboratory and sonographer levels.

**Results:** Between December 2010 and May 2016, 31 sonographers and 442 VDUs were reviewed. At the laboratory level, baseline mean scores were minimum views, 85%; documentation, 98%; image optimization, 88%; and scanning time, 88%; yielding a mean PCI of 90%. At 1 month, mean scores did not change significantly. By 15 months, improvements were observed: minimum views, 94% (Fig); documentation, 98%; image optimization, 93%; scanning time, 116%; yielding a mean PCI of 96%. At

**Table.** Total sonographers and venous duplex ultrasound (VDU) studies reviewed throughout the quality assessment program (2010-2016)

Variable	Year						
	2010	2011	2012	2013	2014	2015	2016
Audit interval (months)	Baseline	1	15	27	38	52	65
Audit period (days)	31	26	19	32	59	61	62
Sonographers audited	15	15	17	17	17	18	15
Total VDU studies audited	45	62	65	71	66	73	60
Total VDU studies during audit period	462	367	345	446	773	884	929
Percentage audited, %	9.74	16.89	18.84	15.92%	8.54	8.26	6.46



**Fig.** Improvement in venous duplex ultrasound (VDU) protocol compliance: acquisition of minimum required views throughout the study period (2010-2016).