

**CRT-200.15**

**A Retrospective Analysis Comparing Ultrasound Guidance With Direct Palpation as Methods for Common Femoral Artery Access Procedure**



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Traditionally, common femoral artery (CFA) access procedures were, and still commonly are, performed via direct palpation of the CFA. This method, using estimation, has been thought to contribute to vascular complications, with the trend now favoring ultrasound (US) guided CFA access. While there is added time and cost associated with its use, a study conducted in 2013 by Gedikoglu et al. demonstrated that US guidance improved the rate of vascular complications associated with vascular access when compared to the traditional palpation-guided procedure. This is a retrospective study analyzing completed CFA-access procedures performed by interventional cardiologists at a single center that aims to confirm the results of the Gedikoglu et al. study. We proposed that using US-guided techniques for CFA access would decrease post-procedural complications, thereby improving patient outcomes. Data were collected on patients with CFA access using either palpation (n= 453) or US (n= 122) guidance. Patient outcomes were measured and defined via the occurrence of access site complications including: pseudoaneurysms, AV fistulas, hematomas (defined as > 1 cm), or retroperitoneal bleeding. Statistical analysis was conducted using a logistic regression model to understand the associations between these complications and several independent variables including, but not limited to: hypertension, diabetes, hyperlipidemia, previous MI and diagnostic vs. interventional procedures. There was insufficient evidence to claim significant differences in the proportions of pseudoaneurysm, AV fistula, and retroperitoneal bleeding for both cohorts; therefore, the analysis focused on hematoma occurrence. After adjusting for gender, BMI, and periprocedural antithrombotic therapy use, the odds of having a hematoma for patients with palpation were found to be 3.4 times that of patients with US (p =0.047). This reflects a 240% increase in risk of hematoma with palpation guidance alone. Therefore, our results confirm that there is a significant improvement of patient outcomes in relation to the development of hematoma using US-guided CFA access versus palpation. Thus, as current trends have been toward implementing US guidance in CFA access procedures, larger studies may need to be done to determine whether other complication rates are also improved to prevent redundant health-care costs and hospital length of stay associated with vascular access complications.

**CRT-200.16**

**Comparison of Surgical Repair and Endovascular Intervention for Chronic Mesenteric Ischemia**



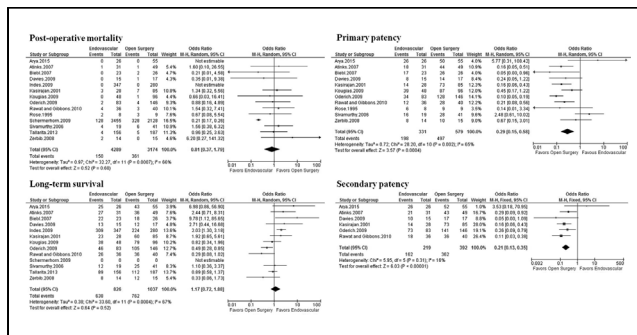
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**INTRODUCTION** Chronic mesenteric ischemia can be managed by open surgical repair (OS) or alternatively, by endovascular repair. It is still to be determined what the best approach is. We sought to evaluate the clinical and procedural outcomes between the two treatment modalities through a meta-analysis of current clinical studies.

**METHODS** Systematic review of PubMed, Cochrane and Embase database was performed for all clinical studies that directly compared OS and endovascular therapy for chronic mesenteric ischemia. Primary outcome was post-procedure mortality. Secondary outcomes included long-term survival and primary and secondary lesion patency. We used random effects analysis according to the Cochrane-Handbook of Systematic Reviews and RevMan 5.2 for statistical analysis.

**RESULTS** A total of 14 studies (13 retrospective and one prospective) provided a total of 7463 patients, 4289 in the endovascular group and 3174 in the OS. There was no significant difference in the post-procedural death between the endovascular and OS groups (3.4% vs. 11.3%, p = 0.60). There also was no significant difference in long-term survival between the endovascular and OS groups (77% vs. 73%, p=0.52). Primary and secondary patency were significantly better in the OS group compared to the endovascular group (p<0.001) (Figure 1).

**CONCLUSION** Our analysis was based mainly on retrospective studies and suggested that endovascular therapy has comparable mortality and morbidity, although OS is associated with superior patency over time. Endovascular therapy might be indicated for the patients who are not good surgical candidates. Newer-generation stents can help to improve lesion patency. Further randomized studies are warranted.



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**Lack of "Learning Curve" in Transradial Carotid Artery Stenting: Comparison of Transfemoral vs. Transradial Access in a Single-Center, Single-Operator Experience**



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**BACKGROUND** Initial transradial (TR) access in coronary intervention showed a "learning curve" regarding radiation exposure, dye use, and procedural times compared to transfemoral (TF) access. Data are limited in TR access in carotid artery stenting (CAS), and it is unclear whether a similar "learning curve" exists when this approach is chosen.

**METHODS** We compared data of 195 patients from a single center, single operator who performed carotid stenting from 2010 to 2017 with either TF (n=157) or TR (n=38) access. From retrospective chart reviews, statistical analyses were generated. Access site and stent/embolic protection were left to operator discretion.

**RESULTS** Baseline clinical characteristics were similar, except that there significantly more men (81.6% vs. 61.8%), higher prior CVAs (39.5% vs. 18.5%) and right CAS (94.3% vs 49.0%) in the TR group. Table 1 demonstrates that procedural success was achieved in all patients, with a crossover rate of 15.8%. Interventional/embolic filter times and contrast use were similar. The TR group had higher fluoroscopy times but comparable cumulative radiation exposure. Hospital adverse events were similar, with one CVA event in the TF group. Blood loss (9.6% vs. 5.3%), acute kidney injury (8.9% vs. 2.6%), and vascular complication rates due to site hematomas (n=2) and pseudoaneurysm (n=1) were higher in the TF group.

**CONCLUSION** Although a "learning curve" is not evident with TR CAS, the crossover rate remains relatively high. However, with reduced vascular complication rates and increased patient comfort, the TR approach should be considered in many patients. Further analyses are required.

Table 1: Patient Risk Factors and Medical History			
Factor	Endovascular	Transradial	p-Value
Age	67.4 ± 8.9	67.1 ± 8.6	0.92
Male	127 (81.6%)	31 (81.6%)	0.92
Female	29 (18.4%)	7 (18.4%)	0.92
BMI - mean (SD), range	29.4 (11.3) 20.2 - 81.5	29.3 (9.9) 20.8 - 37.1	0.8025
Current or former smoker	107 (68.2%)	18 (47.4%)	0.0178
Current or former Hypertension	117 (74.2%)	14 (36.8%)	0.0012
Current or former Diabetes	56 (35.7%)	12 (31.6%)	0.6459
Hyperlipidemia	140 (89.2%)	30 (78.9%)	0.0009
Family History of Premature CAD	107 (68.2%)	20 (52.6%)	0.0002
Prior MI or History of CAD	124 (79.0%)	35 (92.1%)	0.0007
Prior Heart Failure	107 (68.2%)	6 (15.8%)	0.0001
Prior Heart Surgery	60 (38.2%)	16 (42.1%)	0.6799
Relevant Aortic Lesions (n=8)	1 (12.5%)	0	0.2069
Carotid Artery Stenosis (n=10)	104 (66.2%)	29 (76.3%)	0.2506
Carotid Artery Stenosis (5.1 - 1.2mg/dl)	2	1.2%	0
Prior CVA	20 (12.6%)	15 (39.5%)	0.0058
Previous Aortic Disease	12	14	0.6534
Chronic Lung Disease	18	24.2%	0.1835
Diabetes Mellitus	14	36.8%	0.7644
Leukemia	74	49.0%	0.0431
High CAS	77	54.8%	0.57%
Low CAS	148	94.9%	0.0489
Renovascular	7	4.6%	0
Renovascular	7	71.4%	0
Comorbidity (Outcome)	4	2.5%	0.3344
Stroke (n=1)	4	2.5%	0.6053
High Cervical Lesion	27	14.0%	0.2105

Table 2: Procedural and Hospital Outcomes			
Factor	Endovascular	Transradial	p-Value
Procedure Success	157 (100.0%)	38 (100.0%)	n/a
Total Number of Patients	157	38	15.8%
Crossover	0	6	15.8%
Flow Time (minutes) - mean (SD), range	83 (5.5)	3-53	0.0019
Interventional Time (minutes) - mean (SD), range	17.1 (8.6)	5-76	0.0019
Contrast Volume (ml) - mean (SD), range	212 (74.9)	51-475	0.0019
Fluoroscopy Time (minutes) - mean (SD), range	14.1 (5.9)	2.5-32	0.0019
Cumulative Radiation (mSv) - mean (SD), range	693 (106.6)	231-2064	0.0019
Access Site Complication	2	1.3%	0.22%
Hematoma*	2	1.3%	0
Pseudoaneurysm	0	0	0
AV Fistula	1	0.6%	0
Stroke (n=1)	1	0.6%	0
Length of Stay (days) - mean (SD), range	14	8.9%	1.2%
Cost (\$1000) - mean (SD), range	1,875 (212)	1,158	0.0019

\* Time from aortic dissection to removal of embolic protection device  
 † Diameter > 3cm