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Endovascular Treatment of Common Femoral Artery Occlusive Disease in 167 Consecutive Patients:

Mid Term Analysis

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Disclosures

Nothing to Disclose



Introduction

- **The Gold standard for common femoral artery (CFA) occlusive disease remains surgical endarterectomy with or without patch angioplasty**



Introduction

- Endarterectomy as the procedure of choice for atherosclerotic occlusive lesions of the common femoral artery. Mukerjee et al.
 - 29 patients: CFA endarterectomy + Vein angioplasty
 - 5 year patency: 94%
- Common femoral artery occlusive disease: contemporary results following surgical endarterectomy, Kang et al.
 - 65 patients: CFA endarterectomy only
 - 5 year primary patency: 95%
 - Complications: 13.8%
 - Reinterventions: 5.0%



Emerging literature on endovascular treatments of CFA occlusive disease

- **Bonvini et al., J Am Col Card., 2011. Endovascular treatment of CFA disease, midterm outcomes of 360 consecutive procedures**

- 97 patients: CFA angioplasty with provisional stent
- 263 patients: CFA intervention + inflow and/or outflow intervention
- CFA primary patency at mean 10 month follow-up was 73.4%
- Complications: 6.4%



Emerging literature on endovascular treatments of CFA occlusive disease

- **Soga et al., Cardiovasc Interv Therapy., 2013, Clinical outcome after endovascular treatment for isolated common femoral and popliteal artery disease**

- 183 patients: CFA angioplasty with provisional stent
- CFA primary patency at 1 year: 74.4%
- Complications: 4.2%



Emerging literature on endovascular treatments of CFA occlusive disease

- Calligaro et al., J Vasc Surg. 2013. Results of PTFE-covered nitinol stents crossing the inguinal ligament

- 17 patients: CFA interventions with covered stents
- Primary patency at 2 years: 93%
- Complications: 0%



The Albany Vascular Group Experience

- **Our initial experience started with endovascular CFA interventions in only high risk patients**
 - Morbid obesity
 - Multiple prior CFA surgical procedures
 - Severe cardiac or pulmonary risk
- **Our experience increased gradually to include lower risk patients**



Methods

- **This is a 7-year retrospective study of a database that was prospectively maintained**
- **Endovascular CFA interventions were performed on 167 patients for Rutherford(R) 3-6 classifications.**
- **Patients underwent**
 - PTA only
 - Atherectomy +PTA
 - Provisional stenting



Methods

- **Follow up:**
 - Post-procedural clinical examination
 - PVRs and Duplex ultrasound
- **End point:**
 - Procedure related complications
 - Failure rate
 - Technical failure: Target lesion reintervention <1 month
 - >50% recurrent stenosis
 - Recurrence of symptoms
 - Major and minor amputations
- **Statistic Analysis**
 - Multivariate regression analysis



Baseline Characteristics (N=167)

Age	68
Male	101 (60.5%)
Female	66 (39.5%)
HTN	144 (86.3%)
Diabetes	72 (43.1%)
CAD	103 (61.7%)
Smoker	42 (25.2%)
COPD	27 (16.2)
Hyperlipidemia	47 (28.1%)
CKD	4 (2.4%)



Results

- This study includes 167 patients
- Claudication (R3): 91 pts (54.5%)
- Critical Limb Ischemia (R4-6): 76 pts (45.5%)

- Angioplasty (PTA): 114 pts (68.2%)
- Atherectomy+PTA: 38 pts (22.8%)
- Provisional stenting: 15 pts (9%)

- Angioplasty only mean follow up: 48.8 mo (+/-2.6)
- Atherectomy+PTA mean follow up: 25.8 mo (+/- 2.2)



Results

	Claudication	CLI
PTA	N=66	N=48
Recurrence	15 (22.7%)	14 (29.1%)
Atherectomy+PTA	N=20	N=18
Recurrence	1 (5%)	3 (16.7%)
Provisional Stenting	N=5	N=10
Recurrence	0 (0%)	1 (10%)



Angioplasty Only vs. Atherectomy+Angioplasty

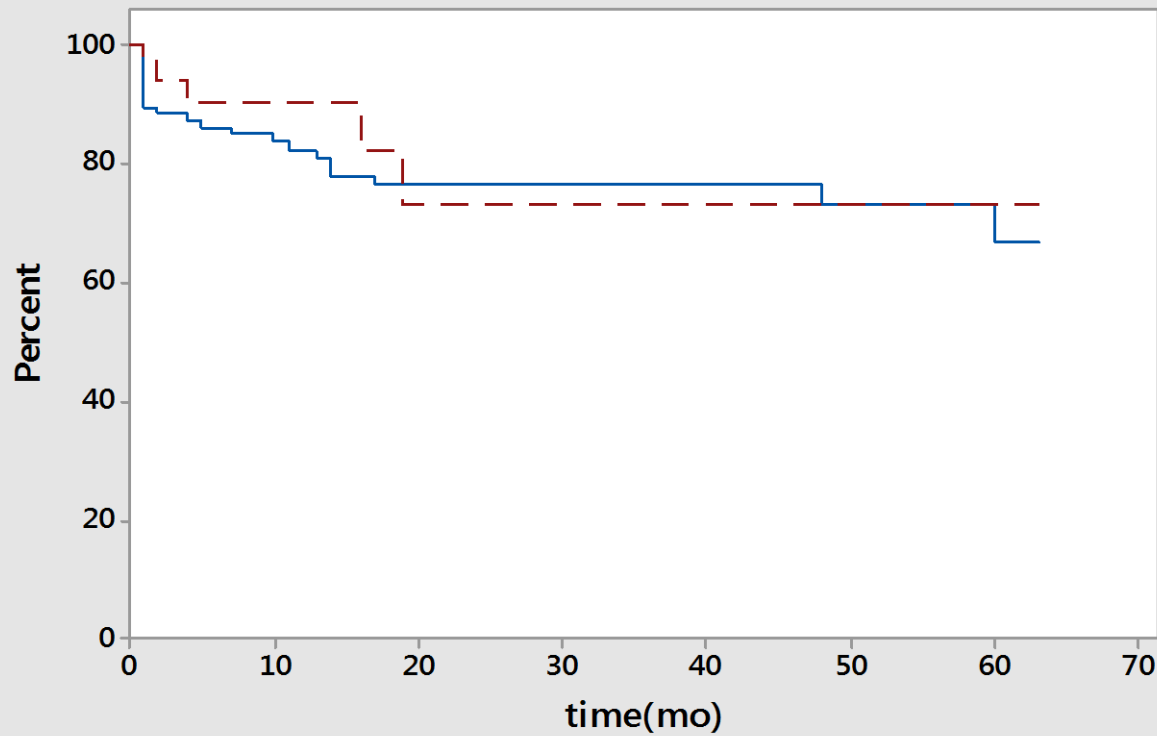
- **Technical Procedure Failure (Reintervention <1mo)**
 - Angioplasty 11.4% vs. Atherectomy+PTA 2.6% (P=0.105)
- **Primary Patency**

	Angioplasty	Atherectomy+PTA	P value
3 month	85.1%	97.4%	0.042
6 month	83.3%	94.8%	0.077
12 month	80.7%	94.8%	0.039
18 month	77.2%	92.1%	0.042



Overall

Survival Plot for time(mo)
Kaplan-Meier Method
Censoring Column in status(0cens)



Group	Mean	Median	IQR
angioplasty	48.8612	*	*
arterectomy	25.8835	*	*



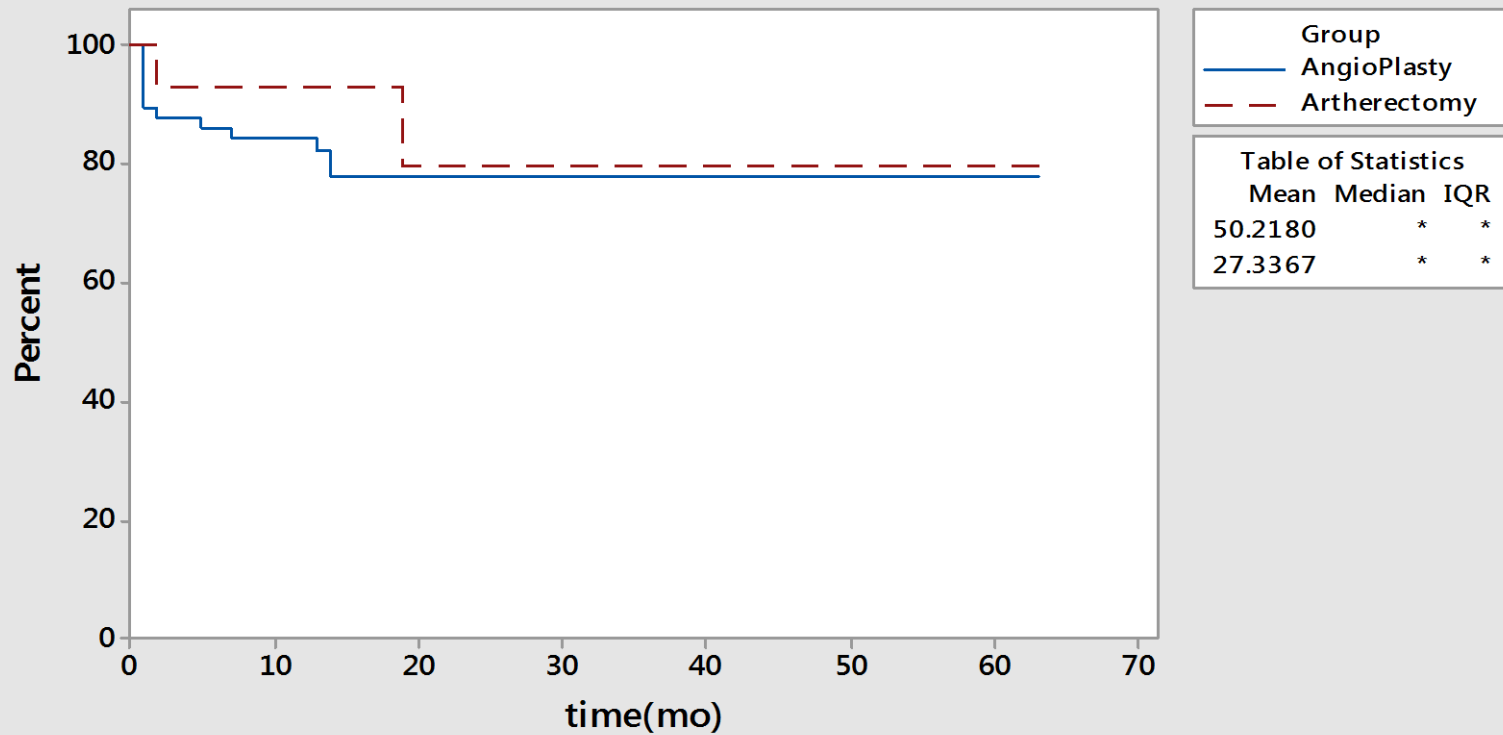
Claudication Group Patency

	Angioplasty	Atherectomy+PTA	P value
1 month	87.9%	100%	0.102
3 month	84.8%	100%	0.064
6 month	83.3%	100%	0.051
12 month	81.8%	100%	0.040
18 month	77.3%	100%	0.019



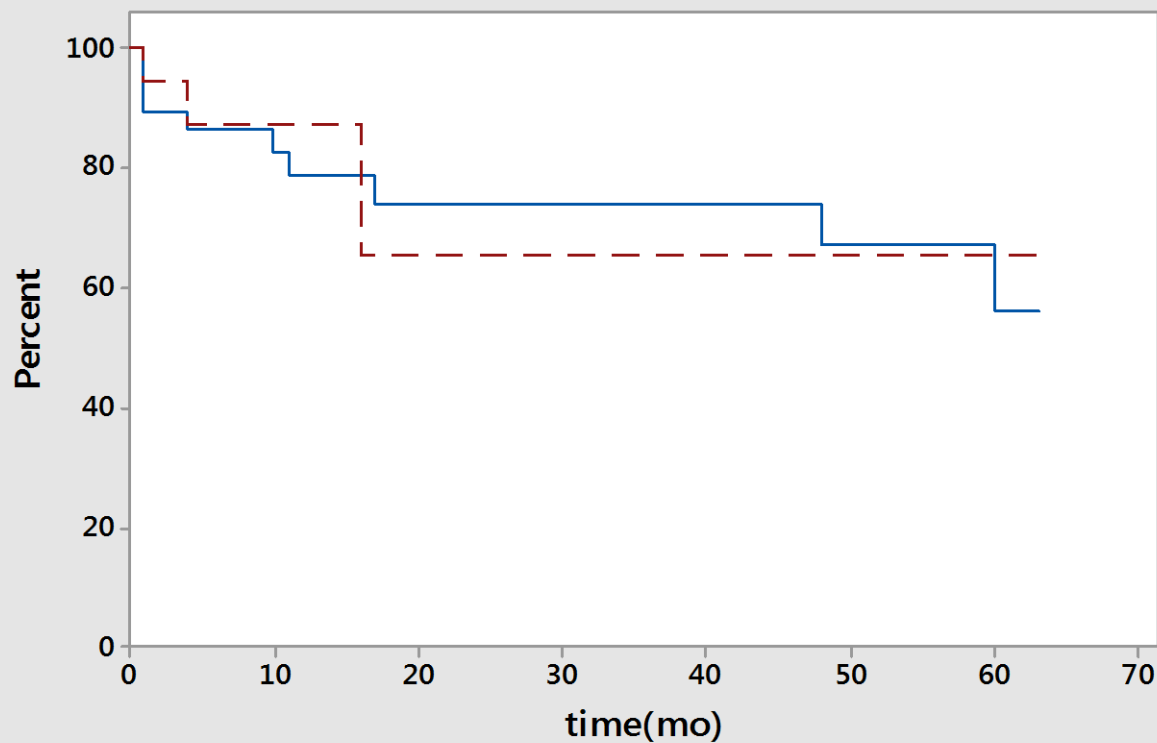
Claudication Group

Survival Plot for time(mo)
Kaplan-Meier Method
Censoring Column in status(0cens)



CLI Group

Survival Plot for time(mo)
Kaplan-Meier Method
Censoring Column in status(0cens)



Group
angioplasty
artherectomy

Table of Statistics			
	Mean	Median	IQR
angioplasty	47.0407	*	*
artherectomy	19.5256	*	*



Risk Factors Analysis

- **Atherectomy+PTA Intervention has significant longer lesions in both Claudication and CLI group**
 - 51.3 vs. 7.7, 46.1 vs. 3.3 (P<0.05)
- **Atherectomy+PTA Intervention has significant higher percentage patients with dyslipidemia**
 - 65% vs. 19%, 55.6% vs. 14.6% (P<0.05)
- **Atherectomy+PTA Intervention has significant higher stenosis in Claudication group**
 - 90.3% vs. 81.8% (P<0.05)



Complications

	Claudication	CLI	Total
Angioplasty only	1	3	3.5%
Atherectomy +PTA	0	0	0%
Provisional Stent	0	1	6.7%



Major/Minor Amputations

- **No major/minor amputations in Claudication Group**
- **In CLI group**
 - 3 Major amputations (1.8%)
 - 5 minor amputations (3%)
- **Subsequent Outflow procedures not involving CFA**
 - 9 cases (5.4%)



Limitations

- **Non-randomized retrospective analysis**
- **Selection bias on means of endovascular intervention**
- **Small atherectomy and stent group**



Conclusion

- **Standard surgical endarterectomy remained preferred treatment for CFA occlusive lesions**
- **Endovascular intervention on CFA is relatively safe, and effective in carefully selected patients.**
- **Atherectomy +/-PTA improves primary patency of CFA endovascular repair compared to PTA alone up to 20 months**
- **A randomized control trial is warranted**

